Creating and Using Learning Objects in Qualitative Research Education

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Abstract

Based upon the lessons learned and the educational materials generated from a doctoral course on qualitative data analysis, a group of doctoral students, their professor, and a linguistics consultant launched an on- going project to create a series of reusable learning objects designed to help other groups of students and professors learn how to analyze qualitative data. The results of the first six months of this project are shared, as the team describes how they have begun to use instructional design and software applications to create a digital learning environment in the form of a series of activities engineered to help analysts learn how to master grounded theory open coding

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Based upon the lessons learned and the educational materials generated from a doctoral course on qualitative data analysis, a group of doctoral students, their professor, and a linguistics consultant launched an on-going project to create a series of reusable learning objects designed to help other groups of students and professors learn how to analyze qualitative data. The results of the first six months of this project are shared, as the team describes how they have begun to use instructional design and software applications to create a digital learning environment in the form of a series of activities engineered to help analysts learn how to master grounded theory open coding. Key Words: Grounded Theory, Reusable Learning Objects, Qualitative Data Analysis, and Digital Learning Environment

In the summer of 2005, a group of marriage and family therapy doctoral students took their second course in a two-course qualitative research sequence. In the first course, they learned about a variety of qualitative research methodologies such as ethnography (Fetterman, 1998), phenomenology (van Manen, 2002), and grounded theory (Glaser, 1994; Glaser & Strauss, 1967; Strauss, 1987; Strauss & Corbin, 1998), and had begun to master the skills needed to design a study, and to collect qualitative data via fieldwork and interviews. The second course picked up where the first course ended, and the students began to learn how to analyze the data they had collected and prepared the semester before.

This second class was taught by Ron Chenail in the form of an extended workshop; week after week the students analyzed the interviews they had conducted with each other the previous semester. This was done from a variety of methodological perspectives such as generic qualitative analysis (Caelli, Ray, & Mill, 2003), grounded theory (Glaser, 1994; Glaser & Strauss, 1967; Strauss, 1987; Strauss, & Corbin, 1998), phenomenology (van Manen, 2002), and recursive frame analysis (Chenail, 1995). They would come to class each week with their analyzed transcripts, memos, audit trails, and journals in hand, and share their results, insights, questions, successes, and frustrations with their fellow classmates, Ron, and Jan Chenail, a linguistics expert who served as a participant-observer for the class. As a result of this intensive immersion into the world of qualitative data analysis, the students successfully mastered the skills and knowledge they would need to conduct similar analyses in their forthcoming dissertations and other future qualitative studies.

The students also produced an extensive body of valuable educational product in the form of their various rendered analyses of their interviews and their archived reflections on this learning process. In reviewing these materials, it became clear to all of the participants in the class that these artifacts were just the sort of insider perspectives and tacit knowledge that could prove to be useful for subsequent groups of novice qualitative data analysts to review. The work could also be mined for insights on the learning of this process and also for them to see that everyone struggles in their pursuit of mastering these analytical systems.

To distill the potential value of these materials and insights, Ron invited the students to continue their learning process after the course, and to work as a team with Jan and him to transform the materials they had *used* to learn qualitative data analysis into a new set of learning activities that could be *re-used* by future groups of learners. From that invitation, Jennifer Spong, Michele Liscio, Lenworth McLean, Holly Cox, Brenda Shepherd, and Nura Mowzoon, from the class, volunteered and the newly formed team began working on deconstructing the original, face-to-face doctoral class and reconstructing it into a digital learning environment (Chenail, 2004) consisting of a system of reusable learning objects (Barritt & Alderman, 2004; Wiley, 2002b). This paper is a report on the first six months of this project.

Deconstructing SFTD 7350 - Qualitative Research II

The team started to deconstruct their original class, SFTD 7350 - Qualitative Research II, by gathering all of the materials they had generated during the semester-length course and reviewing them along with the class syllabus. After this re-familiarization process, they next turned their focus to the course's four learning objectives: (1) Students will be able to understand the historical development of qualitative data analysis; (2) Students will be able to understand how qualitative data analysis is connected to data gathering and data presentation; (3) Students will be able to identify the different types of qualitative data analysis methodology; and (4) Students will be able to apply the theory of data analysis to practice. Of the four learning objectives, the group elected to begin the project with the fourth. This objective was selected because the group agreed that mastering the knowledge and skills needed to conduct an actual qualitative data analysis made this objective the most difficult one of the course and the one objective on which learners needed to demonstrate their competencies or they would not otherwise be able to conduct and complete a study of their own.

After selecting this learning objective as a focus, they then reviewed the four major methodologies they had covered in the class: generic qualitative data analysis (Caelli et al., 2003), grounded theory (Glaser, 1994; Glaser & Strauss, 1967; Strauss, 1987; Strauss & Corbin, 1998), phenomenology (van Manen, 2002), and recursive frame analysis (Chenail, 1995) with the intent of selecting one methodology on which to apply the learning objective they had previous selected. In a process of elimination, they selected grounded theory because of its popularity and its relatively small body of foundational works (e.g., Glaser, 1994; Glaser & Strauss; Strauss; Strauss & Corbin). These characteristics made grounded theory a good candidate to start the project.

With an organizing learning objective, "Students will be able to apply the theory of grounded theory to practice," now in place, the team set about focusing on the particulars of grounded theory, and breaking the qualitative research approach into its major distinctions. They did this by reviewing the major texts produced by the originators of the methodology, Barney Glaser and Anselm Strauss (e.g., Glaser, 1994; Glaser & Strauss, 1967; Strauss, 1987; Strauss & Corbin, 1998), as well as other important grounded theory texts (e.g., Dey, 1999) and papers (e.g., Harry, Sturges, & Klingner, 2005).

This review of the grounded theory body of literature produced two significant findings: (1) There were significant differences between the model as described and prescribed by Glaser (e.g., Glaser, 1994, 2002; Glaser with Holton, 2004) on one hand, and Strauss and Corbin (Strauss, 1987; Strauss & Corbin, 1998) on the other hand (see Boychuk Duchscher & Morgan, 2004); and (2) There were significant differences between the originators versions of grounded theory and subsequent interpreters of the approach (see Dey, 1999). Faced with this dilemma, the team decided to focus primarily on the Strauss and Corbin version of the model, with some portions of Glaser's (2002) approach mixed in as well, as the original presentation of the approach (Glaser & Strauss, 1967). The team made this decision for a number of reasons: (1) Focusing primarily on one approach helped to bring a degree of simplicity to the project; (2) The Strauss and Corbin text was widely used; and (3) The text was available electronically including a digital, full-text version through the university's electronic library as well as a limited full-text access version through Google's new online Book Search website (http://books.google.com/). This last rationale was especially important because when it came time to develop the learning objects, the team could rely on portions of the digitalized text of the book, which would also be accessible online.

Parallel to this review of the grounded theory literature, the team members also began to review those class assignments that dealt with grounded theory. These artifacts from the class included the interviews they had conducted, recorded, and transcribed from their first qualitative research class, their open coding attempts on the transcripts and the associated memos, the subsequent categories constructed from the concepts identified during the open coding phase, their initial forays at constructing grounded theories, and their reflective accounts on these activities from their journals.

The next decision point for the team to decide was where to start the process of reconstructing the learning of grounded theory into a series of reusable learning objects (Barritt & Alderman, 2004; Wiley, 2002b). Although Strauss and Corbin (1998) do not see the grounded theory coding process as a series of separate activities, they do acknowledge that such a presentation strategy is helpful for analysts first attempting to learn coding. While there were a countless number of possible starting points, the team began with the process of conceptualization in open coding (Strauss & Corbin).

Conceptualization is the process by which grounded theory analysts explain the meanings they find in the data by giving these patterns names (Glaser, 2002, p. 4). Conceptualization is a distinctive feature that makes grounded theory a unique approach to qualitative data analysis: This critical task must be mastered by analysts in order to ultimately generate grounded theory. In other words, if the analysts cannot generate sound explanatory concepts as a foundation of their analysis, then they cannot move on to

the other steps entailed in grounded theory: simply put—"No concepts—No grounded theory."

With the initial conceptualization complete, the team moved into its next phase of development. In this stage, the team began learning more about the world of digital learning environments, reusable learning objects, and instructional design.

Digital Learning Environments, Reusable Learning Objects, and Instructional Design

In order to make the valuable materials produced during SFTD 7350 - Qualitative Research II available and reusable for subsequent learners, these electronically stored files would need to be organized and made easily accessible so learners could retrieve them on demand in either a "just-in-time" or "just-in-case" basis of need. One model for conceptualizing the architecture of such a virtual learning sphere is called Digital Learning Environments (Peters, 2000). In this approach, materials are digitalized and made accessible so learners can access them according to their own needs. Digital Learning Environments also incorporate an autonomous approach to pedagogy in that learners can use the materials they deem necessary as compared to materials assigned by a teacher, who is primarily managing the learning process in a traditional class.

The team began to conceptualize its digital learning environment based upon the notion of the Research Park Online (RPO) that Ron (Chenail, 2004) had previously developed. Ron conceived the RPO to have interesting digital attractions to excite park goers and to make their experience of the park an enjoyable one. One type of attraction Ron envisioned would be "park rides" that would consist of highly structured journeys for learners consisting of lectures, demonstrations, simulations, or some combination. The rides in the RPO would include a pre-ride component in which learners as ride-goers would be introduced to the concept of the ride, its prominent features, and its overall goals. The ride would have an overall linear quality, but it would also allow for hyperlinked, random-accessed departures because it would be important for ride-goers to be able to re-ride any part. In learning architecture terms, this type of structure is termed "exploratory" (Barritt & Alderman, 2004, p. 14) because learners visiting the RPO could access those parts of the ride that interested them the most or were most relevant to their learning needs.

Like the other attractions in the RPO, the basic building block for creating these attractions would be the learning object (Barritt & Alderman, 2004; Chenail, 2004). Based upon the notion of an object found in computer science, learning objects in education are self-describing, self-contained small chunks of learning that accomplish a specific learning objective (Oakes, 2002) or as Wiley (2002a, p. 6) describes them, ''any digital resource that can be reused to support learning.'' By their self-descriptive and self-contained nature, learning objects are designed to operate as independent learning environments. Everything the learner needs to demonstrate competency, regarding the organizing learning objective, can be found in the object itself. From the literature available on learning objects, Jennifer developed an outline of what to include for each individual object.

- Specific Learning Objective (i.e., What will learners accomplish in this object?)
- Prerequisite Objectives (i.e., What do learners need to know how to do before they can complete this learning object?)
- Knowledge Components (i.e., What is the specific knowledge that is included in this objective, and what do learners need to know at the end?)
- Skill Components (i.e., What do learners need to be able to do at the end?)
- References/Source Materials (i.e., What will be provided to learners to support this learning object?)
- Learning Activity (i.e., What do you want the learners to do during this learning object: complete an exercise, reading a transcript, take a quiz?)
- Objective Evaluation (i.e., How will you and/or the learners know that they have successfully mastered the learning object?)
- Sequencing (i.e., The goal is that each learning object stands alone, but if this one must be done in conjunction with another one, identify the other learning objects)
- Other Information/Comments (i.e., What else is needed to know to design this learning object?).

Learning objects can consist of a variety of resources such animations, case studies, collections, drills, lecture presentations, practice exercises, quizzes and tests, simulations, and tutorials through which learners can master certain skills, competencies, or knowledge. Another important part of the learning objects approach is to incorporate reflections and feedback of learners into the object itself. This sharing of the experiences further enhances the learning object by giving others an insider's perspective. This insider knowledge can be as simple as a tip for completing the assignment more effectively, or as involved as sharing a variation of the activities that evolved from using the object (Wiley, 2002a).

To gain a better idea of what learning objects can be, the team members visited Merlot (http://www.merlot.org/Home.po), a major online repository of learning objects. The visit to Merlot helped the team see that some learning objects are interactive and incorporate fancy graphics and video whereas other objects are text-based and resemble lecture notes with built-in quizzes. The team also took notice that learning objects differ in their "granularity" (i.e., how small or how large the object is), connectivity (i.e., how discrete learning objectives are connected with other objects in a coherent form), and delivery of content (i.e., the content is static, that is, the same content for each learner using the object; or the content is dynamic, that is, the content changes each time a learner accesses the object).

For example, a learning object could be one exercise helping a learner to learn basic grounded theory concepts or the object could be a series of interconnected activities that help a learner gain expertise in grounded theory analysis from beginning to end. In either case, the material could be static or stable depending on the design of the object, but the key point in this approach to learning is that the learning objects cohere with the learning objective regardless of granularity, connectivity, or choice of content delivery. After that agreement or coherence of objective and object has been established, the rest of the process comes down to engineering the object so it works well and learners can demonstrate that they have accomplished the competency the learning object was destined to address (Wiley, 2002a).

A necessary step in the conceptualization and development of learning objects is to connect them with an instructional learning system that will provide a prescriptive guide needed to suggest the structure of objects, their sequencing, and their evaluation (Wiley, 2002a). Jennifer, who has experience in creating learning objects, suggested the team adopt Benjamin Bloom's (1984) famous taxonomy to guide the creation of their learning objects. Bloom's approach to instructional design is based upon a hierarchical system or taxonomy of intellectual behavior. In accordance with Bloom's taxonomy the team would attempt to construct its learning objects by blending the level of skills learners would need to master in order to demonstrate their competencies. Depending on the objective, learners would show they could (a) recall bits of information (knowledge); (b) summarize main points (comprehension); (c) translate knowledge into new contexts (application); (d) solve problems using required skills; (e) identify patterns (analysis); (f) relate knowledge from several areas (synthesis); and (g) compare between ideas (evaluation).

The team now had chosen all of the ingredients it needed to create a grounded theory ride in their Research Park Online. They would use Bloom's taxonomy to create a series of connected learning objects that would provide a digital learning environment, in which learners could, on a variety of cognitive levels, demonstrate their competencies at conceptualizing word patterns as part of open coding in grounded theory. At this point, all they had to do was build and test their learning objects.

Creating Learning Objects

To create their learning objects, the team first broke down open coding into its discrete but connected parts. This would help them build corresponding learning objects that could be designed to address specific open coding learning objectives. In reviewing open coding (Strauss & Corbin, 1998), the team identified a number of critical distinctions:

Open Coding	Concepts	Conceptualization	Memos
Categories	Microanalysis	Dimensions	Code Notes
In Vivo Codes	Constructed Codes	Constant Comparison	Memoing

From this identification exercise, the team decided to organize this set of distinctions into two basic categories: open coding and memoing, and organized their first grounded theory ride in the Research Park Online around the knowledge and skill competencies needed to code a transcript for concepts and to write the accompanying memos. Additionally, as a way of including an introduction to this ride, Lenworth would also create a "Demonstrating basic grounded theory knowledge" learning object.

The team would then need to build a number of activities and materials through which learners could learn open coding, conceptualization, and memoing in grounded theory. They would demonstrate their competencies across a variety of learning objectives by completing exercises and taking quizzes constructed with Bloom's hierarchy of cognitive levels.

In order to create an organization for our series of learning objects, Ron used Bloom's taxonomy (see http://www.coun.uvic.ca/learn/program/hndouts/bloom.html for

a brief listing of the competencies taxonomy with associated sample questions) and focused on the different levels of competence: knowledge, comprehension, application, analysis, synthesis, and evaluation. This listing helped Ron understand both the connection between these levels of competence and their distinct qualities. It also led him to construct a proposed series of learning objects focusing on grounded theory memos, with an emphasis on their use within open coding generally and conceptualization specifically. The following is a sketch of these learning objects with their main Bloom's taxonomy competencies identified.

• Memoing Learning Object 1 (Bloom competencies: knowledge and comprehension): Learners read assigned passages on memoing in Glaser and Strauss (1967), Strauss (1987), and Strauss and Corbin (1998) and take a quiz.
• Memoing Learning Object 2 (Bloom competency: synthesis): Learners create a memoing quiz and answer guide of their own based upon their reading of Glaser and Strauss (1967), Strauss, and Strauss and Corbin.
• Memoing Learning Object 3 (Bloom competencies: comprehension and application): Learners read assigned exemplary memos from SFTD 7350 – Qualitative Research II and/or Strauss and Corbin and answer questions regarding their characteristics and functions.
• Memoing Learning Object 4 (Bloom competency: analysis): Learners analyze examples of memos from SFTD 7350 – Qualitative Research II and/or Strauss and Corbin and compare and contrast the variety of memo types and elements.
• Memoing Learning Object 5 (Bloom competencies: application and synthesis): Learners will utilize a structured memo template to generate memos in conjunction with their conceptualization in open coding of transcripts from SFTD 7350 – Qualitative Research II.
• Memoing Learning Object 6 (Bloom competencies: application and synthesis): Learners will utilize a structured memo template to generate memos in conjunction with their classification in open coding of transcripts from SFTD 7350 – Qualitative Research II.
• Memoing Learning Object 7 (Bloom competencies: application and synthesis): Learners will utilize a structured memo template to generate memos in conjunction with their categorization in open coding of transcripts from SFTD 7350 – Qualitative Research II.

This same general format used to create the memoing objects will serve as the basis for creating learning objects for other areas of open coding and grounded theory analysis.

From all of these potential learning objects, the team focused on the following four learning objects as well as Lenworth's "Demonstrating basic grounded theory knowledge" learning object as their trial run at creating a grounded theory ride for the park.

• Comprehending open coding
• Comprehending memoing
• Analyzing open coding and memoing
• Creating open coding and memoing

The team used the following template (see Figure 1), designed by Jennifer, to generate the learning objectives and content for the learning objects.

Figure 1. Template for creating learning objects.

Specific Learning Objective	Specific, measurable objective in accordance with Bloom's Taxonomy.
Prerequisite Objectives	What do learners need to know how to do BEFORE they can complete this learning object?
Knowledge Components	What is the specific knowledge that is included in this objective, what do learners need to know at the end?
Skill Components	What do learners need to be able to do at the end?
References/Source Materials	What will be provided to learners to support this learning object?
Learning Activity	What do you want learners to DO during this learning object? (Is it an exercise, reading a transcript, etc.)
Objective Evaluation	How will you and/or the learners know that they have successfully mastered the learning object?
Sequencing	The goal is that each learning object stands alone, but if this one MUST be done in conjunction with another one, list that here.
Other Information/Comments	What else do we need to know to design this learning object?

The completed template for the "Analyzing open coding and memoing" learning object is presented in Appendix A. This learning object asks learners to first read an essay on memoing in relationship to conceptualization in the preliminary phases of open coding. After reading the essay, learners then answer a series of questions based upon their analysis of three exemplars taken from segments of a coded transcript and its associated memos. The colorful text balloons in the margins and the colored text highlighting were generated by two editing features of Microsoft Word. These tools were used by the students to conduct their analyses of their transcripts.

Templates were drafted for each of the four learning objects, making up the team's initial attempt to build a learning object structure for learning grounded theory. The next phase for the team was to select the software applications and build the digital version of our learning objects.

Digitalizing the Learning Objects

Jennifer took the lead in selecting the software applications for developing the digitalized versions of the four learning objects. She selected Microsoft PowerPoint (http://office.microsoft.com/en-us/FX010857971033.aspx), the popular presentation

software, for those objects that consisted of reading and testing content and Adobe (formerly Macromedia) Captivate (formerly known as RoboDemo) (http://www.macromedia.com/software/captivate/?promoid=BINN), software that automatically records all onscreen actions and instantly creates an interactive Flash simulation, for those learning objects that involved following multiple steps. Jennifer selected these two applications because their products are easily delivered over the Internet and can be easily accessed by learners online or at their desktop.

Jennifer created a number of prototypes in PowerPoint and Captivate for the team to review, and to gain a more concrete picture of what the learning objects would look like online. This also helped the team make adjustments to the learning object templates based upon what worked and did not work when the content was transformed by these software packages.

The following are screen shots of the digitalized version of the "Analyzing open coding and memoing learning object" (see the Appendix A).

Figure 2 shows the slide that introduces learners to their learning objectives for the learning object.

Figure 2. Lesson objectives.
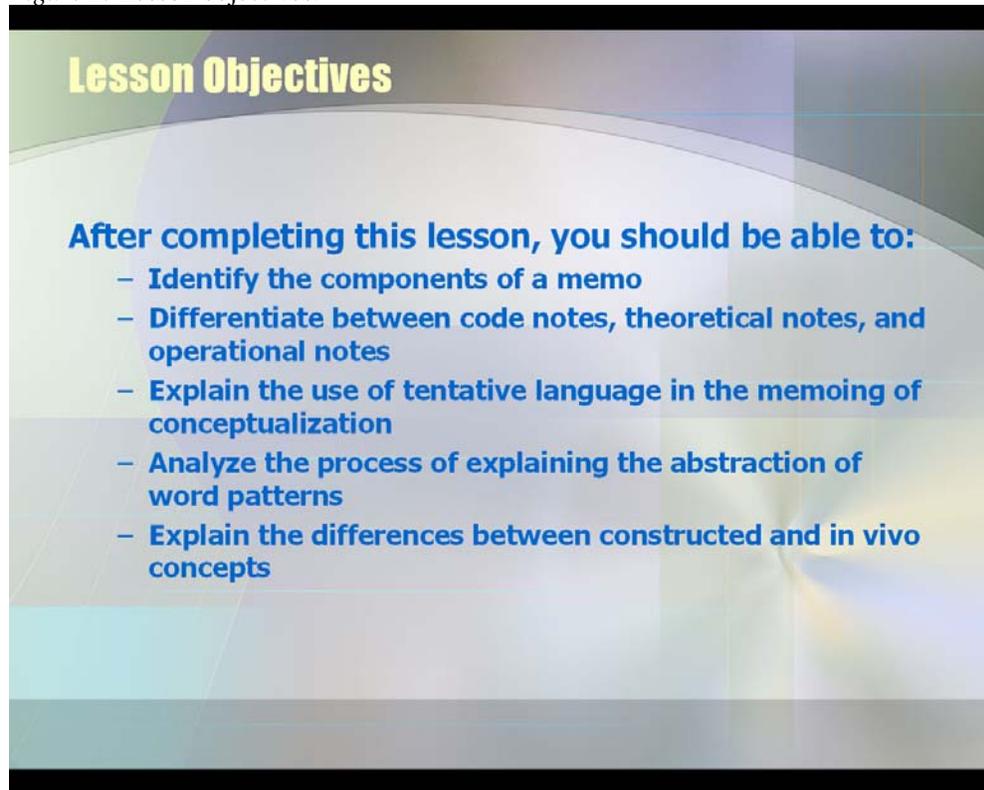
After the learners have read an essay on memos and coding of transcripts, they are shown a sample of how a page of transcript coded with Microsoft's Highlight Text and Insert Comments features appears (see Figure 3). The digital version of this page is interactive, allowing the learner to click on featured elements, such as a word pattern, a code, and an associated memo, to see an example and definition of that element. (see Figure 4).

Figure 3. Sample transcript with memos.

Figure 4. Sample transcript with memos and definitions.

The interactivity of the learning objects allows for learners to complete both "self checks" and multiple-choice questions. Figure 5 shows the result of the learner correctly answering one of the multiple-choice questions in the learning object. In this example the learner has correctly identified the highlighted memo as a "code note" and is provided an explanation of the correct answer.

Figure 5. Exercise two.

The design and development of the objects, including testing slides, making corrections to the learning object materials, and reformatting the slides is an iterative process. The team continues this revision process through a number of cycles before the learning object is ready for formal evaluation.

The team evaluated the effectiveness of their objects internally, by Jennifer sending the object via email attachment to the other team members for their review and evaluation. The digital versions of the learning objects are evaluated for their clarity, readability, and ease of use. The team also tested their prototypes during a presentation at the 19th Annual Conference on Interdisciplinary Qualitative Studies at the University of Georgia, Athens, GA (Chenail et al., 2006). The results of this ongoing evaluation will be used to refine their current group of learning objects as well as develop their next generation of learning objects.

Next Steps in the Creation of the Research Park Online

Over the next year, the team plans to continue the development of the grounded theory learning objects. Ron is scheduled to teach SFTD 7350 - Qualitative Research II again this summer, and those students will help the team test the reusable qualities of the objects within the context of a face-to-face course, and make refinements to their first

generation learning objects. For example, the team is contemplating adding audio to the learning objects, so learners could also hear directions and additional commentary on the activities. Ron is also speculating on redesigning the class and to have students demonstrate their competencies in qualitative data analysis by virtue of creating their own learning objects.

The work of the first six months of the project has also suggested the introduction of a new attraction into the Research Park Online (Chenail, 2004) development plan, the digital workbook. In reflecting upon the emerging structure of the grounded theory learning objects, the team has found their system of objects to resemble something akin to a digital workbook that could be used in concert with pre-existing books as has been done with the Strauss and Corbin (1998) text. The organization of learning objects into digital workbooks helps to make the creation of an object's requisite References/Source Materials easier, but it also raises intellectual property issues.

As for future lines of learning object development for the Research Park Online (Chenail, 2004), the team is considering recursive frame analysis (Chenail, 1991, 1995) as its next project, since many of its foundational materials are available in open access sources (Lessig, 2001), and Ron has additional, unpublished materials that could be used for learning object construction. Also, the basic knowledge base for recursive frame analysis is available online (http://www.nova.edu/~ron/rfa.html), and the team members have already been introduced to the methodology and have generated some interesting artifacts during SFTD 7350 - Qualitative Research II last summer.

The experiences of the team in creating the grounded theory learning objects can also serve as a blueprint for others who may wish to develop and create their own qualitative research learning objects, either on web sites of their own or as part of the RPO proper. To help facilitate this process, the team also plans to share its system for developing learning objects in papers such as this one as well as via web-based instructions.

Discussion

In reflecting upon the work completed during the first six months of the project, team members agreed that they now know grounded theory in far greater detail due to their work on constructing these learning objects. They credit this new-found insight to the active deconstruction-reconstruction process in which they all engaged throughout the development of the learning objects. Such a finding seems to be consistent with those learning theorists who advocate for learning approaches that are more constructionist (LeFoe, 1998) and engaging in nature (Smith, Sheppard, Johnson, & Johnson, 2005).

The team members also have found that the complexity of combining a qualitative research methodology like grounded theory with the intricacies of instructional design, learning objects, and software application require a multitude of competencies and can be quite overwhelming at times. In addition they found that by simplifying the process, whenever possible, was a good strategy for managing the complexity, and they support the team approach for undertaking such an endeavor and for populating the team with members with a variety of knowledge and skill backgrounds.

As the first six months of the project to create and use learning objects in qualitative research education come to a close, the team has also found that although the

process can be overly complicated and sometimes frustrating, the results of this half year of work begin to demonstrate that learning objects can be used to learn qualitative data analysis, and that they can also be engineered in creative ways to build the beginning of a Research Park Online.

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Appendix A

Analyzing Open Coding and Memoing Learning Object

Specific Learning Objective	*Copy from the list above. Make one copy of this table for each of the specific learning objectives you have created.*
	Analysts will be able to analyze memos used in the early phases of conceptualization in open coding

Prerequisite Objectives	• What does the learner need to know how to do BEFORE they can complete this learning object? Analysts will be able to comprehend open coding Analysts will be able to comprehend memoing
Knowledge Components	• What is the specific knowledge that is included in this objective, what do people need to know at the end?
Skill Components	• What do people need to be able to do at the end? Analysts will be able to • Identify the components of a memo • Differentiate between code notes, theoretical notes, and operational notes • Explain the use of tentative language in the memoing of conceptualization • Analyze the process of explaining the abstraction of word patterns • Explain the differences between constructed and in vivo concepts
References/Source Materials	• What will be provided to the learner to support this learning object? Transcript Segments "General Features of Memos during the Preliminary Stages of Open Coding" essay abstracted from Strauss, A. L., & Corbin, J. M. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (2nd ed.). Thousand Oaks, CA: Sage.
Learning Activity	• What do you want the learner to DO during this learning object? (Is it an exercise, reading a transcript, etc.) Introduction: The following learning object has been designed to help you to analyze memos from the

early stages of open coding and to see how analysts begin to document conceptualization and record their thoughts and reflections on this process.

1. Read the following essay:

General Features of Memos during the Preliminary Stages Conceptualization in Open Coding

Open coding is the initial analytical process in Grounded Theory by which the analysts "opens up the text" by analyzing field notes and interview transcripts line-by-line and provisional identifies and names concepts and categories in the data. Open coding also involves the process of memo writing, a process by which the analyst makes overt the thinking that went into the naming of concepts and categories (Strauss & Corbin, 1998, p. 101).

In open coding concepts are the provisional names analysts give to explain particular word patterns or bits of data they identify in their field notes and interviews. Throughout the analytical process, these provisional concepts or abstractions are constantly compared with other concepts identified and are classified or grouped together based upon their similarities to form categories (Strauss & Corbin, 1998, p. 105).

Conceptualization is a process in open coding by which analysts provisionally name discrete parts of field notes and interview transcripts so as to explain or abstract the meaning the words evoke for the analysts. Analysts may create these provisional concepts using words they have constructed themselves or using words spoken by the respondents themselves (i.e., in vivo codes) (Strauss & Corbin, 1998, p. 105).

Broadly speaking, during open coding, data or word patterns are broken down into discrete parts, closely examined, and compared for similarities and differences in meaning. Analysts provisionally name these concepts to explain the meaning evoked by these bits of data and word. Concepts that are found to be similar in nature or related in meaning are

grouped under more abstract concepts termed categories (Strauss & Corbin, 1998, p. 102).

Specifically speaking, the steps of Open Coding are as follows:

a. Analysts minutely scrutinize each field note, interview, or other documents line by line, or word by word (Strauss, 1987, p. 28);

b. Analysts identify bits of data or word patterns that interest them or seem significant and ask a variety of questions about these discrete pieces:

- What could this word pattern mean?
- What is my general notion, idea, theory, or abstraction about the meaning of this word pattern?

c. Analysts give provisional names to each concept by asking the following questions (Strauss, 1987, p. 30);

- What would be a good provisional concept name that explains the meaning of this word pattern?
- What is the source of the provisional concept name—constructed by me or taken by me from the interviewee's words (in vivo)?
- How does my provisional concept name and meaning for this word pattern fit with the context provided by the words surrounding the word pattern itself?
- How do your provisional concept name and meaning for this word pattern fit with the surrounding context of the interview itself?
- How is the meaning of this word pattern similar to other word patterns you have noticed and provisionally named?

d. Analysts continue to ask questions pertaining to conditions, strategies, interactions, and consequences of these provisional concepts (Strauss, 1987, p. 28);

e. Throughout the process, analysts interrupt the open coding of concepts to write memos (Strauss,

	1987, p. 32). Generally in Grounded Theory, memos are written records that "contain the products of analysis or directions for the analyst" (Strauss & Corbin, 1998, p. 217). In the early phases of open coding, memos help the analyst to gain analytical distance from the materials being studied in that they force the analyst to move from working with the data to conceptualization. In other words, the process of writing memos in the early phases of open coding encourages the analysts to shift from simply describing what they see in their field notes and interviews to creating or discovering provisional concepts that attempt to offer analysis, explanations or abstractions of the word patterns (Strauss & Corbin, 1998, p. 218). Memoing also offers analysts an opportunity to be creative and imaginative and to reflect on their analytical thought (Strauss & Corbin, 1998, p. 220). Memos at this stage vary in length but are often brief, simple, and sometimes awkward. Over time, memos take on greater depth, clarity, and complexity as the analysis progresses (Strauss & Corbin, 1998, p. 218). The provisional nature of analysis and conceptualizing in the early stages of the open coding phase suggests that analysts should use a tentative or hedging style of reporting (Strauss & Corbin, 1998, p. 223). These memos can take several forms—code notes, theoretical notes, and operational notes. Code notes contain material pertaining to the codes themselves (e.g., open codes, axial codes, and selective codes). Theoretical notes pertain to the analyst's thoughts about theoretical sampling. Operational codes deal with procedural directions and reminders (Strauss & Corbin, 1998, p. 218). From a pragmatic perspective, memos should be dated and should make reference to the portion of the field note or transcript section about which they are being written. Each memo should also contain a heading denoting the concept or category to which they pertain (Strauss & Corbin, 1998, p. 221).

2. The following examples have been excerpted from an interview of a doctorial student (Nancy) regarding her experiences in a PhD in Family Therapy program. Mary is the interviewer and the number before each speaker's name designates the placement of these speaker turns within the entire span of the interview. Read each example and answer the accompanying questions.

I.

7. Mary   How does your working affect your ability to handle schoolwork?

8. Nancy   (sighs deeply) UMM, it doesn't affect how I handle my schoolwork – I'll handle it, regardless. But, sometimes it does suck my energy out, and it takes more effort to knuckle down and do work. But, I'm lucky in that my job – one of my jobs – is in the school environment and I can study when it's quiet and slow.

a. Identify the names of the concepts being discussed in Turn 8 and list them below along with their corresponding word patterns.

b. Identify whether Memo [RC1] is a code note, theoretical note, or operational note and explain the rationale for your choice.

II.

15. Mary   Tell me the best part of going to school?

16. Nancy   HMM. Knowing that I'm getting an incredible education, from professors who for the most part I truly respect and admire. Sometimes I wish I could just sit and bask in all their knowledge, experience, and expertise! Education through osmosis! (laugh)

Comment: 5/10/05: "Surviving": It seems her formula for surviving is to take change and handle things or manage them.

Comment: 5/10/05: "Energy Level": It appears one aspect of making all of these conflicting demands priorities is to have sufficient energy to "do it all."

Comment: 5/10/05: "Effort" (in vivo): As a way of connecting this concept to the one above I may re-name this one "Energy Efficiency" in that knuckling down is one way to remain energy efficient.

Comment: 5/10/05: "Work Time": This one seems to be about the time she spends on her job. I also am thinking about a concept of "job construction" in that she appears to construct work and school as jobs or her jobs.

Comment: 5/10/05: "Studying": Her concept of "Studying" seems to include "multitasking."

Comment: 5/10/05: "Work Time": She appears to decide when she can do her school work or other things at work job and this decision appears to be predicated on whether or not there is a high level of activity at her work job.

Comment: 5/10/05: "Admirable Faculty": It appears that her concept of "admirable faculty" are those who are worthy of respect and admiration.

Comment: 5/10/05: "Education through Osmosis" (in vivo): It seems she jokingly suggests that "just being there" can have educational value. In relationship to the "Admirable Faculty" concept above, I think we can add "knowledge, experience, and expertise" to her concept of "Admirable Faculty."

	a. In Memo [RC8], the provisional concept, "Education through Osmosis" is labeled as "(in vivo)." Please define what an in vivo code is and explain why the analyst designated this concept as an in vivo one. b. In memos [RC7] and [RC8], the analyst has placed the names of the concepts in quotation marks and uses words such as "appears" [RC7] and "It seems" [RC8] when discussing explanations of these concepts. Please explain why the memos are presented in such a style. III. 5. Mary — What aspect of your life, schoolwork or personal, seems to take precedence? 6. Nancy — Again, it varies depending on the week! If my schoolwork is more demanding, it takes precedence. Otherwise, I tend to play before I work. (laugh) Not a good habit, but what can I say? (laugh again) a. The process of conceptualizing involves the analysts moving from description to explanation. After reading memos [RC9] and [RC10], describe how the analyst abstracts the word patterns to produce these concepts.
Objective Evaluation	• *How will you and/or the learner know that they have successfully mastered the learning object?* After completing the questions, compare your responses to the following ones to see if your compare favorably. If any of them do not, please re-read the essay above to find the section that corresponds to the answer in question, and then try responding to the question or questions again. I. a.

Comment: 5/10/05: "School Demands" (in vivo): This one could also be termed "Precedent" in that her concept for what takes precedence is based upon what is most demanding during a given week.

Comment: 5/10/05: "Balance": At first I thought this was her way of expressing how she balances play and work, but I'm now thinking this may be like her concept of how to figure our priorities.

- Surviving: doesn't affect how I handle my schoolwork – I'll handle it
- Energy Level: sometimes it does suck my energy out
- Effort: takes more effort to knuckle down and do work
- Work Time: one of my jobs
- Studying: is in the school environment and I can study
- Work Time: when it's quiet and slow

b. Memo [RC1] is a code note because the content of the note presents the analysts explanation of the coding of the word pattern as "Surviving." If it were theoretical note, it would have contained information regarding the analyst's thoughts about theoretical sampling and if it were an operational code, it would have contained information regarding procedural directions and reminders.

II.

a. An in vivo provisional concept name is one taken from the actual words of an interviewee. In the case of this particular in vivo code, Nancy actually states the words, "Education through osmosis!" and that is the exact concept name the analyst has decided to use to explain the word pattern identified for this concept.

b. The provisional nature of analysis and conceptualizing in the early stages of the open coding phase suggests that analysts should use a tentative or hedging style of reporting. The use of quotation marks around concept names can suggest their provisional nature as well as the selection of hedging words such "seems," "appears," and "apparent."

III.

a. In [RC9], the analyst explains that the concept, "School Demands," involves the notion of setting precedents among competing priorities. This slight abstraction of Nancy's actual words will make it easier for the analyst to compare this concept with

	other concepts involving "setting precedents" instead of comparing descriptions of Nancy's talk about school. In [RC10], the analyst proposes the meaning of Nancy's words, "play before I work," suggests how she balances her demands or how she prioritizes her time. This too is an abstraction by which the analyst attempts to explain what is meant by the words instead of simply describing what Nancy has said.
Sequencing	• *The goal is that each learning object stands alone, but if this one MUST be done in conjunction with another one, list that here.*
Other Information/Comments	• *What else do we need to know to design this learning object?*

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