MDDE 602: Research Methods in Distance Education

Assignment 3

Instructor: Professor Blodgett-McDeavitt

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Overview of Grounded Theory and coding procedures (a)

Grounded theory (hereafter, GT) can be defined as "a qualitative research **method** that uses a **systematic** set of **procedures** to **develop** an inductively derived grounded **theory** about a phenomenon" (bold extant in the original text, Strauss & Corbin, 1990, p.24). GT is one of the key research epistemologies, and is one of the most accepted and acknowledged qualitative analytical methods standing against/alongside quantitative epistemologies (Creswell, 2006). In contrast to quantitative research methods where testing a theory/hypothesis under more or less controlled conditions to modify/reject it is the norm, GT aims to inductively generate a theory via data analysis (Neuman, 2006).

The origin of GT lies in *The Discovery of Grounded Theory: Strategies for Qualitative Research* (1967) co-authored by the sociologists Glaser and Strauss; this book is recognized as being the first to establish a credible opposition to the then dominant quantitative research epistemology which was at its apogée in 1960s, and which also presented the theory generation process, the fundamental tenet of GT, to a wider audience (Charmaz, 2006; Strauss & Corbin, 1990). However, in later years the authors split due to their developing conflicting views towards the meaning and the process of the research epistemology (Charmaz, 2006; Kelle, 2005). In particular, Glaser accused Strauss of forcing data into a theory rather than allowing a theory to emerge from the data (Glaser, 1992).

As with other research methods, the research question precedes any decision to use GT, which takes the form of "a statement that identifies the phenomenon to be studied" (Strauss & Corbin, 1990, p.38). Also, Strauss and Corbin state that the research question in GT is likely to be oriented to "action and process" (Strauss & Corbin, 1990, p.38).

Coding is the primary analytical process applied in GT. Though it may be more often associated with the content analysis of textual data, such as the analysis of interview scripts, journals, and field notes, recently, coding has also been applied in the analysis of audio-visual data (Neuman, 2006). Though the applied coding process varies among

researchers and even between Glaser and Strauss, this paper first examines the GT coding process described in Strauss and Corbin's 1990 book which provides a very systematic overview of it.

The coding process begins with sampling data. The data is collected to the point of *theoretical saturation* when the researcher feels that sufficient patterns and concepts necessary for theory generation have been collected (Glaser & Strauss, 1967). Though it should not pre-establish the degree of sampling, as that is contrary to the idea of saturation, Creswell gives an indication of "20 to 30 interviews" (2006, p.64) in the case of field research interviews. Also, since saturation is recognized in the process of coding, the data collection and its analysis are not separate but rather have to be undertaken simultaneously and alternately (Strauss & Corbin, 1990).

Charmaz, a protégé of Strauss, seems to be trying to extract and integrate the core elements of GT from the ideas of both Glaser and Strauss, and summarizes the procedure of coding in GT as consisting of at least two phases, which she refers to as *open coding* and *focus coding*; that is, "1) an initial phase involving naming each word, line, or segment of data, followed by 2) a focused, selective phase that uses the most significant or frequent initial codes to sort, synthesize, integrate, and organize large amounts of data" (2006, p.46).

These processes are respectively named **open coding** and **axial coding** by Strauss and Corbin (1990). Open coding is defined as "the process of breaking down, examining, comparing, conceptualizing, and categorizing data" (p. 61) and axial coding as "a set of procedures whereby data are put back together in new ways after open coding, by making connections between categories" (p.96). Therefore, open coding includes the definitions of concepts and their categories (a category is defined as "a higher order, and more abstract concept") whereas axial coding relates to the connections among the categories. Finally, **selective coding** is defined as the process of "selecting the core category, systematically relating it to other categories, validating those relationships, and filling in categories that need further refinement and development" (p.116). This process may be difficult to visualize, but

the example of application of this procedure given by Creswell, where it was applied to a case in clinical psychology (Morrow & Smith, 1995 in Creswell 2007) provides a clearer image; that it is more like constructing a storyline by deriving the core categories in relation to subcategories from the categories identified in the axial coding. Finally, as Strauss and Corbin acknowledge, "the lines between each type of coding are artificial," that is, each coding process does not necessarily happen in step-by-step order, but rather swing back and forth among the different coding processes.

Throughout this process, a series of inductive processes are constantly applied: the mental functions of segmentation, comparison, categorization, integration, and generation. The constant weighing of similarities and differences of concepts and categories to find recurrent themes and patterns is called **constant comparative method** by Glaser and Strauss. It is reasonable to ask to what extent we can rely on these mental abilities, however, both Glaser and Strauss believe in the human ability to "recognize what is important in data and to give it meaning" which they referred to as the **theoretical sensitivity** (Strauss & Corbin, 1990, p.46; Glaser, 2002) of the researcher.

In GT, a detailed literature review is not strongly recommended but should be done to the extent of relevancy to the research question in hand because "if we are effective in our analysis, then new categories will emerge that neither we, nor anyone else, had thought about previously" (Strauss & Corbin, 1990, p.50). That is, after certain categories emerge from the data, it is useful to go back to the relevant literature to see what has been found or said about them by other researchers.

Other strategies accompanying the coding and theory generation processes are **memoing** where written records are kept of reflections that are relevant to the theory generation and **diagramming** to represent the relationships between the concepts (Strauss & Corbin, 1990). Many examples of memoing can be found in the most recent edition of Basics of Qualitative Research (Corbin & Strauss, 2008), although we may find it puzzling that the amount of memo writing is almost equal to that of the main text in volume.

Finally, it is worth mentioning that GT was originally conceived by sociologists Glaser and Strauss while they were attending and observing dying patients in hospitals to integrate a theory about awareness contexts of dying named *Awareness Theory*, which took the form of a monograph, *Awareness of Dying* (1965). Therefore, in its origin, rather than deskbound theory, GT was conceived to provide a theoretical explanation of an unrecognized clinical phenomenon.

Analysis of the Meeting transcripts

Procedures

The analysis of the assignment texts largely follows the three steps posited by Strauss and Corbin (1990). Much of the coding process depended on the model codes and categories provided in the course assignment directions. As some sort of research question is necessary for analysis, it is tentatively established to analyze the phenomenon of distance education that has become more and more popular recently.

Open coding. Besides the definable codes in the assignment directions (step 4), the following new codes were added, particularly in the meeting three script.

Table 1. Definable codes table (b1)

Accessibility	Flexibility
Adult learning	Fragility
Autonomous learning	Instructional design
Change	Incidental learning
Collaboration	Learner differences
Community of learners	Learnability
Connectivity	Lifelong learning

Convenience	Motivation
Cost	New challenge
Usability	Planning
Empowerment	Quickness
Lack of liveliness	Support

Table 2. Code definitions (b2)

Code	Definition	Example
Accessibility	The ability to be reached.	Computer conferencing offers maximum accessibility and independence, while allowing us to work together.
Adult learning	Learning specifically designed for adult learners rather than for younger age groups.	It isn't only about continuing to learn it is also about how we learn-and how we are taught to learn as adults in our distance education program.
Autonomous learning	Learning more or less independent and controlled by the learner.	Computer conferencing offers maximum accessibility and independence, while allowing us to work together.
Change	The difference in situations/contexts over time.	When we were younger, it seemed that all there was, was traditional forms of schooling-I mean face to face stuff. . .or that is all we were aware of. Now there is distance learning-and not just correspondence-but programs that use technologies that support learning independently and together.
Collaboration	Working together.	And besides, we don't always work alone on our assignments, we have had opportunities to work in groups. I never

		really though about it before, but I guess this too is a design consideration.
Community of learners (learning community)	A group of people getting together for learning.	What I mean to say is, we may be separated from each other, but because we are connected via our computers we are given the opportunity to learn together and build on each other's strengths-knowledge strengths, that is.
Connectivity	Mutual linkage.	Although what you've said is true, there are other things worthy of consideration. Like how we as learners connect together, on-line.
Convenience	Utility.	Other than computer conferencing in this program, the only other technology I've used for learning purposes in this program--has been videotapes. Not sophisticated, but useful none-the-less.
Cost	Financial and monetary issues.	And although it was just a matter of time before we replaced old Nellie, with me losing my income and having to pay for a premium for distance education courses, it was a bit of a financial hardship.
Empowerment	Strengthening one's abilities.	And it also seems to be about personal and professional advancement, and how we have to prepare educationally for it.
Lack of liveliness	Social/emotional "flatness."	I do miss the F2F debates that take place in a traditional learning environment. There is an energy present, which is completely lost in computer

		conferencing.
Flexibility	The ability to meet new conditions/demands.	I just feel the whole thing is really pretty flexible.
Fragility	Likelihood of system failure/disruption.	I mean when you are wholly reliant on your computer as a means of connecting to your learning world, not to mention just the word processing functions of ones computer-when it breaks down it can leave you high and dry.
Instructional design	A systematic and effective way of putting things together.	I have always felt that the way courses are set up and technology used in our program were well suited for one another.
Incidental learning	Learning occurring unexpectedly/by chance.	In other words, there can be much learning that is serendipitous.
Learner differences	Differences in preferences, styles, etc., of the learners.	So I guess you are saying, despite the advantages of this technology, there will always be those who don't care for it.
Learnability	The feeling that learning is happening.	I want to express myself meaningfully
Lifelong learning	Needs/styles to learn over long periods of time in life.	Now it is about learning many things, at different times in your life, to prepare you for, potentially, many jobs. Like an educational continuum.
Motivation	Desire to proceed.	Oh, and I can't forget that you need a heck of a lot of internal drive-revisited on a daily basis.
New challenge	New demands.	Well, for one, it seems we are talking about meeting the challenges of a new era-new needs, new expectations, new

		surroundings and contexts.
Planning	The management of time and work.	For instance, if you were the kind of person who just left things to the last minute, I don't think you would do very well studying at a distance. It requires organization of your time, and deciding what you need to do first, second, etc., etc.
Quickness	Speed/rapidity of response/feedback.	You can post a question to your professor anytime day or night and within 24 hours you have an answer.
Support	Help – both hierarchical and heterarchical.	It's like we support each other academically. And mentally, too.
Usability	Ease of use.	In my opinion, how easy the tool is to use is as important as what it can do.

Note. *Distance Education: Definition and Glossary of Terms* (Schlosser & Simonson, 2002) and *Oxford Advanced Learner's Dictionary* (OALD) were consulted to gain ideas for the code definitions.

Axial coding. The following categories were established following the coding paradigm of context, causal condition, phenomenon, strategies, process, and consequences (Strauss and Corbin, 1990). Additionally, one category of 'attribute' was added from the domain analysis by Spradley (1979, p. 111; Neuman, 2006) in order to represent the characteristics referring to the nature of distance learning and technology.

Table 3. Codes, categories, and frequencies (c1)

Categories	**Codes**	**Frequencies**
Context	Change	4
Causal condition	New challenge	1

Phenomenon		Adult learning	3
		Lifelong learning	3
Strategies		Planning	2
		Instructional design	9
		Support	9
		Motivation	2
Action/Interaction		Collaboration	1
		Community of learners	4
Consequences		Empowerment	1
		Autonomous learning	6
		Incidental learning	1
Attributes	Positive	Accessibility	2
		Connectivity	4
		Convenience	1
		Flexibility	4
		Learnability	4
		Quickness	1
		Usability	5
	Negative	Cost	1
		Lack of liveliness	1
		Learner differences	2
		Fragility	2

Table 4. Category definitions (c2)

Category	Definition
Context	The specific set of properties that pertain to a phenomenon such as location.
Causal condition	Events, incidents that lead to the occurrence or development of a phenomenon.

Phenomenon	The central idea, event, or happening.
Strategies	The structural conditions bearing on action/interactional strategies that pertain to a phenomenon.
Action/Interaction	Strategies devised to manage, handle, carry out, and respond to a phenomenon under a specific set of perceived conditions.
Consequences	Outcomes or results of action and interaction.
Attributes	Quality or feature of something/somebody.

Note. Large part of definitions of coding categories rely on the coding paradigm posited by Strauss & Corbin (1990, pp.96-97).

Selective coding. Finally, to reconstruct the phenomenon of distance learning, the codes with frequencies higher than four are selected as core categories (Strauss & Corbin, 1990);

The phenomenon of distance learning is happening because of the social ***changes*** and the ***new challenges*** that demand us to cope with them. Especially, three strategies of ***instructional design*** and good ***support*** systems on the side of DE providers and students' ***independence*** and ***learnability*** are keys that lead to learner success and consequent empowerment in their careers and lives: learning with others or ***community of learners*** is also an important factor to realize the paradox of independence and connectedness. As for the attributes that support the DE systems, many of the positive attributes such as ***connectivity***, ***flexibility***, and ***usability*** appear in reference to the usage of technology. From these, we may think that ***technology*** plays a crucial part to realize the successful distance learning, therefore copes with the new challenges and demands of the social change in the present era.

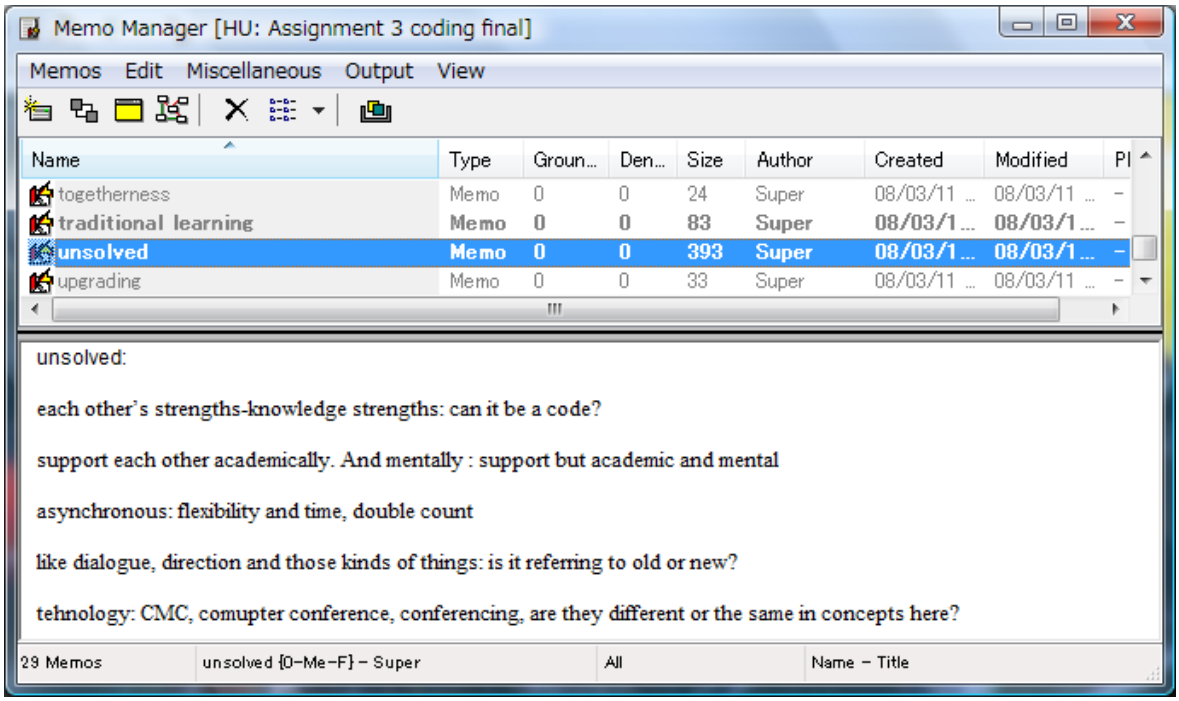
Discussion (d)

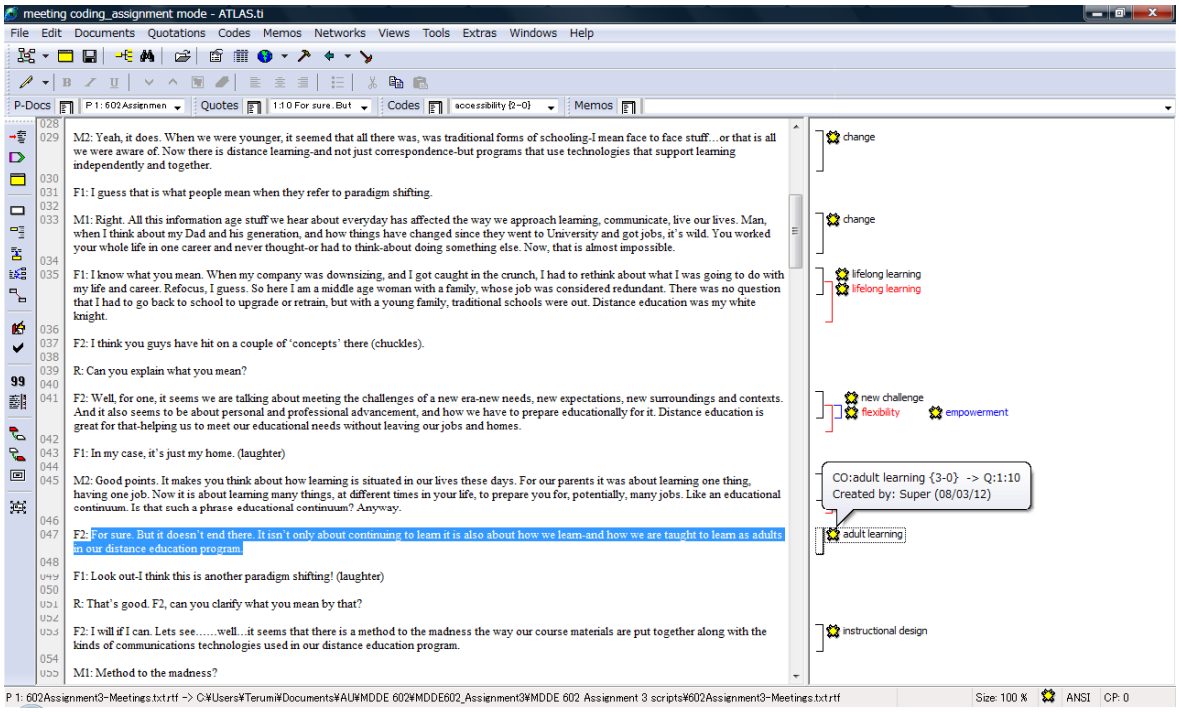
In this paper, the linkage or interrelations between codes and categories were based on the coding paradigm presented by Strauss and Corbin (1990). This is because open and axial coding processes were felt to be somewhat ambiguous, so that the author felt the need of some sort of systematic strategy to make the distinction between lower and higher order

categories. However, even though the coding paradigm of Strauss and Corbin seems to work well to develop a theoretical explanation for pathological cases, the five core categories were felt to be somewhat insufficient to cover all social events. In this assignment was therefore added the core category of 'attributes' by the author. However, later thought concluded that this category could also be a subcategory under instructional design. Additionally, the idea of the positive and negative direction of attributes was obtained from Neuman (page 325) in reference to quantitative coding: the chapter explains that word count or frequency of occurrence is included as a feature of quantitative text analysis. Though word and concept/category are different in nature, this assignment seems to be moving towards the complementarity of both quantitative and qualitative perspectives.

A segment from my memoing (e)

Below are the screenshots of 1) my memos generated on ATLAS.ti under the topic of unsolved problems – items that I was not sure how to code or categorize while doing the coding, and 2) coding at open and axial levels.



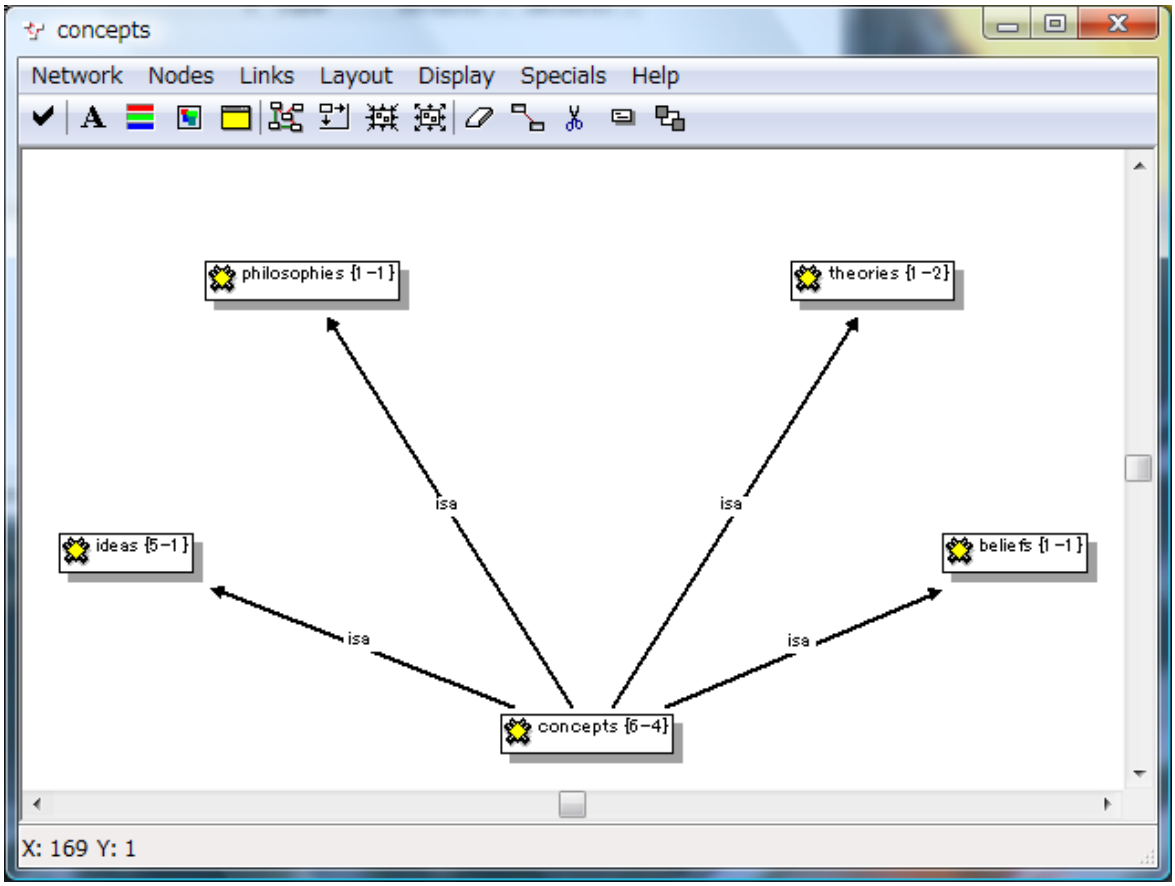


Conclusion (f)

Glaser and Strauss (& Corbin) move from a unified position in the *Discovery* book (1967) to confrontation in *Basic Qualitative Research* by Strauss (1990) and even to personal attacks on Strauss by Glaser with *Basics of Grounded Theory* (1992). These developments seem, to the author the a sincere expression of the problematic issues innate to the concept of GT; that is, whether GT can be a science or the mere product of the subjectivity of the researcher, as well as the nature of a theory/hypothesis within social phenomenon that sits on the uncertain border between deduction and induction. Though it is too early to state a conclusive decision of the GT approach, the author feels that there is much to be done before GT can show its full potential in its application to text analysis in distance education.

The process of writing this paper gave me a chance to acquire the basic usage of ATLAS.ti as well. Though the software does not appear easy to use, the do and redo process of coding made the author realize the usefulness of features such as auto recalculation of the concept/category count, code merger, etc. because it could avoid a large part of the redundant and laborious aspects of the analysis. Above all, the in vivo coding function or

direct copying of quotations from the primary document was helpful as it helped maintain the original texts and literal expressions used by the speakers/authors more easily. Also, though it has yet been fully mastered, the diagram (network view) function eases the visual presentation of the concepts/categories linkage and seems to help show the outcome in an easily presentable way.



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