Extrapolating Practice from Theory:
A User-friendly Guide to Conducting Grounded Theory in the Social Sciences

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Abstract

This paper presents an easily comprehensible, non-theoretical introduction to grounded theory, a form of qualitative research that has become increasingly popular among scholars in the social sciences in recent years. Following an introduction to the basics of qualitative research and grounded theory, the author draws on his experiences investigating the acquisition of academic writing among Taiwanese doctoral students to illustrate the procedures involved in carrying out this type of naturalistic inquiry. The final section of the article, in the form of an appendix, contains a glossary of terms commonly used in the conducting and the reporting of the findings of studies employing grounded theory, as well as a list of references to consult to learn more about qualitative research methodology in general.

Keywords: academic writing, grounded theory, naturalistic inquiry, qualitative research

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I. Introduction

One of the most endearing aspects of the “Taiwan miracle” has been unprecedented educational opportunities for current and future generations of Taiwanese youth. As record numbers of Taiwanese university graduates are opting to pursue advanced degrees overseas, it is becoming increasingly crucial that the Taiwanese educational establishment does its part to arm these scholars with the research skills they will need to complete their studies as efficiently as possible. However, this will not only entail informing them of how to conduct research in their immediate fields of study but also instilling in them an awareness of-and an appreciation for-current international research trends so they can locate appropriate publishing outlets for their work once it is completed.

Perhaps the most widely-debated such topic regarding research in the United States in recent years has been the open questioning of the quantitative (positivist) research tradition, particularly by scholars who have been influenced by the postmodernist approach to inquiry.¹ While most scholars would scoff at extremists’ suggestions of abandoning the

¹ Please see Appendix A for a definition of postmodernism and a description of its basic epistemological assumptions concerning the relationship between naturalistic inquiry (research) and reality.
quantitative paradigm altogether, many have become increasingly critical of the academy’s wholesale acceptance of a received tradition that, they claim, is founded on the premise that all phenomena can be examined through statistical procedures and other means of quantification. A lamentable result of this complacency with the positivist research tradition, this school of thought contends, has been the tendency to overlook - or better yet dismiss as “soft-science” - other traditions that employ less quantifiable ways of investigating reality, namely the qualitative research paradigm.

While this debate continues to rage in North America, an informal investigation of a number of recently published Taiwanese journals and contributions by Taiwanese writers to major North American journals in the social sciences reveals a deeply entrenched predilection for quantitative research methods in Taiwan. It is beyond the scope of this paper to discuss in depth possible explanations for this phenomenon (e.g., Taiwanese students studying at North American universities might opt to conduct quantitative research due to their fear of lacking the English proficiency necessary to carry out language-intensive qualitative research studies), however, one possible reason might be the dearth of condensed, easy-to-read instructional guides in Taiwan that delineate the procedures

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2 Gall et al. (1996) define quantitative research as: “Inquiry that is grounded in the assumption that features of the social environment constitute an objective reality that is relatively constant across time and settings. The dominant methodology is to describe and explain features of this reality by collecting numerical data on observable behaviors of samples and by subjecting these data to statistical analysis” (p. 767).

3 Many scholars would agree that rather than dismissing the qualitative research tradition as “soft science” the academy would benefit by adopting mixed-methods research designs that combine qualitative research methods (e.g., interviews, observations, etc.) with quantitative ones (e.g., statistical analysis).
involved in carrying out basic qualitative research.\(^4\)

Aware of this lacuna in the literature, the author of the present paper chronicled his experiences conducting grounded theory for his dissertation research on Taiwanese doctoral students in hopes of compiling these notes into this user-friendly introduction to the basics of qualitative research.

In interpreting the information provided in this paper, however, the reader is urged to note its shortcomings and limited purpose. This paper does not delve into all aspects of what it means to conduct grounded theory, nor does it catalogue all of the problems one might encounter when employing qualitative research. Moreover, the author does not claim that his analysis and coding of the data as presented herein is the only “correct” way the data could be interpreted. Rather, the goal of the present paper is to foster an awareness among Taiwanese scholars of the basics of grounded theory (and, thereby, qualitative research) by demonstrating how the author employed some of its basic codification procedures in his investigation of the academic writing of five Taiwanese doctoral students at a major American research university.

This paper is comprised of five sections. The first section offers a broad description of qualitative research and grounded theory, followed by an overview of the author’s study and the data-collection instruments he used to carry it out. The third and fourth sections offer a step-by-step account of the data-analysis procedures employed and demonstrate how they were implemented on actual data samples, respectively. The final section, in the form of an appendix, lists a glossary of commonly-used

\(^4\) Please consult Appendix A for a list of references to consult to learn more about conducting qualitative research methods.
terms and a number of references to consult to learn more about qualitative research methods.

II. Qualitative Research Methods and Grounded Theory

Probably the most effective way to describe qualitative research is to contrast it to what some would consider its nemesis, the quantitative research paradigm. At the risk of making gross generalizations, the typical quantitative research project is conducted with the purpose of proving or disproving a series of pre-established hypotheses in a controlled environment on a pre-planned schedule through statistical procedures or quantified means (Bogdan & Biklen, 1998). In qualitative research, on the other hand, the investigator first establishes a general research problem and seeks out a case or cases (such as a particular person, group of people, or environment) that exemplifies the context in which that phenomenon occurs. As opposed to the one-shot data collection measures applied by many quantitative researchers, a principal aim of qualitative inquiry is to investigate process. This emphasis on longitudinal changes taking place with the phenomenon under investigation over time explains why qualitative research studies typically take months, years, or even decades to complete.

In other words, rather than conducting the investigation in a removed laboratory or establishing hypotheses prior to carrying out a study, the qualitative researcher enters the context in which the phenomenon occurs

5 A number of advocates of the postmodernist school refer to qualitative research as postpositivist research to emphasize their dissatisfaction with and disdain for this type of inquiry. (See, for example, Gall et al., p. 766).
and continues the inquiry until he or she has gathered enough information
to make assumptions about why the situation functions the way it does. As
the main research instrument of the study, the qualitative researcher not
only determines the length of the study but also the manner in which all
data are gathered and analyzed. Then, in an effort to gain as comprehensive
a perspective as possible of the phenomenon under investigation, the
analyst triangulates his or her data sources by employing a variety of
data-collection instruments (i.e., interviews, observations, photographs,
graphic representations, reflective journals, etc.). The researcher attempts
to maximize the credibility (validity and reliability) of his or her findings
by constantly comparing and contrasting the information derived from
each data source.\(^6\)

**Grounded Theory**

Among the many types of qualitative analytical techniques, grounded
theory (Strauss & Corbin, 1998) has become extremely popular in recent
years. Its popularity stems from the fact that it enables the researcher to
identify themes and categories in the data through a three-pronged
codification process: open coding, axial coding, and selective coding.\(^7\)

In the first type of coding, open coding, the analyst seeks to identify
concepts, their properties and dimensions, as they exist in the data. After
attaching a series of codes to the data, the analyst then ascertains
similarities or differences between these codes and then categorizes them

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\(^6\) Please consult Appendix A for more information on the problems of validity (construct validity,
internal validity, external validity, interpretive validity) and reliability in qualitative research.

\(^7\) Please see Appendix A for a working definition of grounded theory.
into “a more abstract higher order construct” (Strauss & Corbin, 1998, p. 113).

In the second step, axial coding, the analyst deals with the categories derived from the open coding process, “relating categories to their subcategories along the lines of their properties and dimensions” (Strauss & Corbin, 1998, p. 124). This procedure is referred to as axial coding because in this stage, the coding occurs along the “axes” of the derived categories.

The final form of coding in grounded theory, selective coding, is the process through which theory emerges from the data by a process described by Strauss and Corbin (1998) as “theory building” (p. 145). In this stage of analysis, the investigator integrates the major categories “to form a larger theoretical scheme that … take the form of theory” (p. 143) and performs an extensive cross-comparison of all heretofore derived codes, patterns, and themes to align them in a way that allows him or her to eliminate those that lead to “dead-ends.” As the researcher continues to align elements of the data, distinct patterns and themes are detected in the data and the resulting categories lead to the emergence of theory from the data.

III. An Overview of the Author’s Study

Having described the basics of qualitative research and grounded theory, the author will now describe his research project on the academic writing of Taiwanese doctoral students and the steps he took to carry it out. As mentioned above, the first steps a qualitative researcher must take are choose a topic of interest, establish a general research question, and then
seek out ways (data-collection instruments) of examining fully all aspects of the phenomenon.

As a former writing instructor to Taiwanese students at universities in Taiwan and the United States, the author decided to focus his study on the role that Taiwanese dissertators’ interactions with others (classmates, spouses, professors, dissertation advisors, etc.) have on how they conceptualize the writing tasks required of them in graduate school.

After contacting a number of Taiwanese students at the university where the study took place, the author located five who were kind enough to volunteer to serve as participants for the entire five months of the (semester-long) study. Participants agreed to meet with the author bi-weekly for structured/semi-structured interviews, audio-tape their interactions with “others” (friends, spouses, instructors, etc.) in which they discussed their academic writing tasks, submit as many drafts of their writing (e.g., course assignments, e-mails) as possible to the author for analysis, and keep a reflective journal of their thoughts about their writing projects. Moreover, to gain a more comprehensive picture of the data gathered on the focal participants, the author requested that the participants inform him of “others” with whom they had discussed their writing projects and, with the participants’ permission, interviewed these “other” individuals as well.

IV. Data Collection and Analysis

About a month into the study, the author discovered that the participants tended to interact only minimally with their classmates when completing their writing projects; therefore, he had no choice but to
redefine the focus of the investigation to the participants’ interactions with their instructors and dissertation advisors. Each interview was audio-taped and transcribed using a court transcriber (an audio-cassette player equipped with a foot pedal to monitor tape playback speed) so all aspects of the interviews could be analyzed without having to continually replay the tapes.

After transcribing each interview, the author made three copies of the transcript. Two copies were filed away (one as an emergency backup and the other for later analysis), and a third copy was analyzed according to the procedures explained below.

Several days after transcribing an interview, the author reviewed the typed transcript, making any notes in the margins of ideas or reactions that came to mind as he read. As he continued to code and compare the emerging categories, the author occasionally microanalyzed (Strauss & Corbin, 1998) the data, or select specific words or phrases used by the participants and speculate on his or her intentions in making these comments. Following each microanalysis session, the author took from ten to twenty minutes to draft himself an e-mail memo to record what he was seeing in the data.

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8 A significant finding of the study was the limited interaction between the participants and their American classmates. Interestingly enough, several of the participants spent as much or more time discussing their academic writing tasks with their Korean classmates than either their American or Taiwanese classmates.

9 This is done by choosing a particular word or phrase made by one of the participants (a.k.a., an in vivo concept (see Appendix A) and examining it through the wh questions (who, what, where, why, how).

10 The author found it extremely useful to write memos in the form of an e-mail message and send them to his own e-mail account; this not only kept them safeguarded on the e-mail provider’s server but also allowed him to print them out for further analysis.
After waiting a couple of days to gain the appropriate psychological distance, the author re-read each transcript, jotting down in, a different colored ink, any additional codes or notes he could think of in the margins of the text. All new codes were then added to a “master code list” kept on dry erase white boards the author kept on permanent display in his office. The author continued to re-examine all of the data gathered up to that point in light of the ever-growing list of master codes.

In the third pass over each data sample, the author commenced the axial coding stage in which he first reviewed the lists of codes and categories (located in front of him on the white boards), to test and re-test the categories that were slowly congealing into solid categories that comprised multiple subcategories.

A fundamental characteristic of grounded theory is that it involves recursive rather than linear procedures. Accordingly, it is crucial for the researcher conducting this type of inquiry to envision this type of inquiry as a process, for it is usually not until later in the study that the analyst can detect the emergent of related themes in the data. Since more than 150 categories were generated in the author's study on Taiwanese graduate students, he often felt as if he were slowly but surely sinking into an ever-deeper a sea of data. When it appeared as if his study was becoming too unwieldy, he found it necessary to employ a number of data reduction methods to make the study manageable. This was done through an exhaustive, not to mention extremely frustrating, two-month “weeding out” of “dead end” categories from those deemed worthy of pursuing.

Returning to the white boards, the author then set out to rearrange the categories and challenged himself to isolate the similarities and differences
in the themes he was detecting. In order to confirm the accuracy of these themes (as an internal audit) he cut and pasted all of the coded quotations (about 900 in all) into a single computer file, printed them onto card stock, and cut them into single strips. Then, he placed all of the quotation strips in a shoebox and shuffled them, so he could rearrange them once again to ascertain whether or not similar categories would emerge on yet another pass over of the data.

To test further the internal validity\textsuperscript{11} of his coding procedures, the author conducted several peer-debriefing sessions throughout the study. In these sessions, he gave a colleague random data samples and requested that he code the data according to Strauss and Corbin’s (1998) methods.

One of the major difficulties encountered by the author in the study described herein was ascertaining when he had reached the point of data saturation, the point at which the researcher should stop collecting data and begin the final analysis of the data. He found that the most effective ways of making this decision were continuing discussions with the peer debriefer (to glean another perspective of the data) and reading and re-reading his memos and research log.

V. Demonstrating Data Analysis on Actual Data Samples

Having provided a brief description of the tenets of grounded theory and a brief background of the author’s study, a complete data-set will be provided along with illustrations of the manifestations of the aforementioned coding procedures in the data.

\textsuperscript{11} Please see Appendix A for a definition of internal validity.
The participant whose data is being examined in this case was a 26 year-old (Taiwanese) female in the third year of her doctoral studies in educational psychology at the university where the study took place. As will soon become evident, this particular participant believed that her dissertation advisor would “take her more seriously” if she presented him with as ambitious a dissertation research design as possible. Whereas she had hoped that this strategy would impress her advisor, this approach backfired in that her advisor was extremely concerned that the participant’s “over-ambitious” tendencies would interfere with her ability to complete successfully her dissertation. Fearing that she would “bite off more than she could chew” and extend her research design to the point that it would be impossible to carry out the study, the participant’s dissertation advisor adopted a number of strategies to “corral” what he referred to as her “overzealous” research plans.

Set out below are transcriptions of the actual interviews and the original codes the author subscribed to them. Following each data sample is a listing of the codes and comments (written in brackets and in bold font) the author drafted while analyzing each data sample. The data set to be examined below is comprised of five elements:

1. The dissertation proposal the participant presented to her advisor prior to the meeting;
2. An excerpt from the transcription of the audio-taped meeting between the participant and her advisor;
3. An excerpt from the transcription of the follow-up meeting the author held with the participant immediately following her meeting with the advisor;
4. An excerpt from the transcription of the meeting the author held with the participant’s advisor the day after his meeting with the participant;

5. A research log entry the author wrote while analyzing the sample data set.

1. The dissertation proposal the participant presented to her advisor prior to the meeting:

Several days before meeting with her advisor, the participant presented her advisor with the following dissertation proposal:

The Interplay of Various Motivational Factors of EFL Students at a Taiwanese University

[interesting but potentially broad title for study purposes listed below]

A. Definitions of Motivation

B. Aims of the Study

The purpose of this study is two-fold:

1) How Taiwanese college students make sense of their English learning experience.

2) How learners' perception and interpretations of their learning interact with contextual factors and are connected to L2 motivation.

[EXTREMELY BROAD TOPICS][Generalizations about English learning experience]

C. Statement of the Problem
D. Significance of the Study

This study is one of the first attempts to include both contextual and individual factors in examining Taiwanese students’ foreign language motivation. Previous studies on this group of learners are carried out either with Gardner's integrative-instrumental model or from purely cognitive perspectives. Unfortunately, such approaches to L2 motivation miss the interplay of internal and external motivational factors in the language learning process. Using the analytical framework developed by social-constructivists, I hope to present a more comprehensive picture of academic motivation with regard to L2 learning. [Is first person singular appropriate here?]

E. The Setting

The participants of this study are enrolled in the Department of Applied English at a technical university in Southern Taiwan.

* The social environment & the value of English learning in Taiwan
* An overall description of the university under investigation
* Student background

F. Review of the Relevant Literature (20 pages)  

* Achievement goals (goal orientations)
* Classroom structures & other contextual influences (e.g. Ames)
* Attributions
* Cognition (subjective beliefs, perceptions and expectations) and motivation
* Emotions and motivation

G. Research Questions

1. What are the reasons of the students to engage in English learning? What are each student's learning goals?
2. What is the perceived value of English learning for each participant? What aspect(s) of English learning is the most significant to them? Why?
3. What are the participants' past experiences in EFL learning? How do they perceive themselves as language learners? Do they consider themselves as successful or unsuccessful learners?
4. What individual factors does each participant bring to the process of English learning?
5. Does the participants' motivation change and fluctuate over time? How are their motivation and emotions influenced by their interpretations of various contextual factors (such as instructors,
peers, classroom structures, learning materials and tasks)?

6. How is the participants' motivation related to societal or cultural influences?

[Quite a few research questions!]

[What will the advisor say about these?]

[Is it possible to answer all these questions in one project?]

[Possibly unrealistic expectations in study design]

A compilation of some of the notes taken by the author while coding the above data set:

[interesting but potentially broad title for study purposes listed below], [EXTREMELY BROAD TOPICS], [Is first person singular appropriate here?], [Generalizations about English learning experience], [why 20 pages?], [overachievement?: 20 page-lit review], [Quite a few research questions!], [What will the advisor say about these?], [Is it possible to answer all these questions in one project?], [Possibly unrealistic expectations in study design]

2. Excerpt from the transcription of the audio-taped meeting between the participant and her advisor:

In the forty-minute meeting that took place between the participant and her advisor, the advisor skimmed over the participant’s proposal and asked one or two questions regarding each section. When he reached the research questions, he paused, and the following exchange ensued:
Advisor: Okay, you have a lot of questions here. ["a lot of research questions"]

Participant: Yeah (laughing). [cultural tendency to laugh when embarrassed?]

Advisor: Can you really - can you deal with all these questions in one study? [is the study doable?] [don't bite off more than you can chew] [rhetorical question?] [overachievement concerns] [note use of the phrase: DEAL WITH]

Participant: No, I don't think so - so that's why I am asking for help to try to narrow down because I think motivation is such a big topic and it seems that every factor interact with others yeah, so - [FP's reason for calling meeting] [request for help] [self-doubt] [explanation for meeting: narrow down] [big topic - every factor interact with others] [self-awareness of overachievement]

Advisor: Uh.

Participant: So I'm trying to find, yeah to narrow - [goal: narrow the focus] [note: NARROW]

Advisor: Right.

Participant: Down the focus. [goal: narrow the focus]

Advisor: Um, well unfortunately they all look like interesting questions to me – [com-mem’s positive assessment of FP’s work] [INTERESTING – what does advisor mean by interesting?]

Participant: (laughing) Yeah, they are interesting – [INTERESTING –
what does participant mean by interesting?]
Advisor: So I –
Participant: Interesting. [INTERESTING – is there mutual understanding of the term as it’s used here?]
Advisor: So I can’t –
Participant: (laughing) Uh. [note the laughter] [frequent laughter in meeting with authority figure] [cultural tendency to laugh when embarrassed?]
Advisor: I can’t say “oh throw this away it is not good.” [possible suggestion by “other”] [demonstration of limitation of help he can give] [possible advisor strategy to foster academic independence]
Participant: Yeah.
Advisor: Um. But it does seem to me like you’re going to have to not pursue them all or you might be really overwhelmed. So I – [make it “doable”] [don’t bite off more than you can chew] [“overwhelmed”] [concern for participant’s overachievement]
Participant: Well at first, I’m thinking about um asking students’ perception just focus on the perception of themselves and focus just on the learners themselves – [FP’s research plan] [note the word FOCUS]
Participant: Like their beliefs and um attribution. Attributional qualities. I
am not sure, yeah, there if I ask that question (pointing to the research questions) I can see motivation as a process because there are two focuses – [unsure of focus] [insecurity of focus]

Advisor: There’s that old question of “do you have all the questions that you’re going to ask me ahead of time – do you let the conversation evolve ‘spontaneously’?” [“old question”] [“Other’s” vision?] [methods] [advisor strategy: checking up on background knowledge] [concern for participant: does she know the interview procedures?]

Participant: I would ask them spontaneously but I would also follow the questions, yeah, follow their responses to my questions and then see which, yeah, aspect deserves more attention from them so I can go deep into the next part. [FP’s research plan]

Advisor: Okay, so like if you started making attributions and beliefs were a special part of your study and if your participant just starts talking about beliefs then you would let attributions go and just concentrate on beliefs? [“Other’s” question: “What would you do then?”] [advisor strategy: checking up on interview strategies] [advisor strategy: checking to see if she’s ready for the study]

Participant: (laughing) uh, yeah, perhaps. [cultural tendency to laugh when embarrassed?] [what does she mean by perhaps?] [Is advisor’s understanding of this word the same as hers?]

A compilation of some of the notes taken by the author while coding the above data set:
[“a lot of research questions”], [cultural tendency to laugh when embarrassed?], [is the study doable?], [don’t bite off more than you can chew], [rhetorical question?], [overachievement concerns], [note use of the phrase: DEAL WITH], [FP’s reason for calling meeting], [request for help], [self-doubt], [explanation for meeting: narrow down], [big topic – every factor interact with others], [self-awareness of overachievement], [goal: narrow the focus], [note: NARROW], [goal: narrow the focus], [advisor’s positive assessment of participant’s work], [INTERESTING – what does advisor mean by interesting?], [INTERESTING – what does participant mean by interesting?], [INTERESTING – is there mutual understanding of the term as it’s used here?], [note the laughter], [frequent laughter in meeting with authority figure], [cultural tendency to laugh when embarrassed?], [possible suggestion by “other”], [demonstration of limitation of help he can give], [possible advisor strategy to foster academic independence], [make it “doable”], [don’t bite off more than you can chew], [“overwhelmed”], [concern for participant’s overachievement], [FP’s research plan], [note the word FOCUS], [Advisor strategy: repetition for clarity], [unsure of focus], [insecurity of focus], [“old question”], [“Other’s” vision?], [methods], [advisor strategy: checking up on background knowledge], [concern for participant: does she know the interview procedures?], [FP’s research plan], [“Other’s” question: “What would you do then?”], [advisor strategy: checking up on interview strategies], [advisor strategy: checking to see if she’s ready for the study], [cultural tendency to laugh when embarrassed?], [what does she mean by perhaps?], [Is advisor’s understanding of this word the same as hers?]
3. Excerpt from the transcription of the follow-up meeting the author held with the participant immediately after her meeting with her advisor:

Shortly after the above conversation between the participant and her dissertation committee member, the author met with the participant to discuss her impressions of the meeting. In the following excerpt, the participant describes her feelings during the discussion regarding her proposed research questions:

Participant: And I – I felt so stupid – how do you say? (laughing)  
[negative self-assessment] [felt stupid] [cultural tendency to laugh when embarrassed?] Well, actually I showed him a very brief outline of what I am going to do in my proposal and he really gives a lot of very useful suggestions. [positive re-cap of meeting] [compliment of advisor]

Author: Well, good. Now –

Participant: Well, actually I listed some questions that I’m interested in and his suggestion to me was that all these questions are good but just one question will keep you busy for a long time so I –  
[positive re-cap of suggestions] [re-cap of “others” suggestions] [positive re-cap of meeting]

Author: I see.

Participant: So I think that this suggestion is very important to my decision and he helped me to narrow down my focus on just one or two questions. [suggestion – keep focused] [potential in-vivo concept: narrow down focus] [her perception that the
Author: Okay.

Participant: He suggested that I combine some of them and maybe keep it more focused. [reiteration of other’s suggestion] [suggestion: combine and keep focused] [“keep it more focused”] [not the frequent return of the word focus in her speech]

A compilation of some of the notes taken by the author while coding the above data set:

[negative self-assessment], [felt stupid], [cultural tendency to laugh when embarrassed?], [positive re-cap of meeting], [compliment of advisor], [positive re-cap of suggestions], [re-cap of “others’” suggestions], [positive re-cap of meeting], [suggestion – keep focused], [potential in-vivo concept: narrow down focus], [her perception that the meeting was successful], [reiteration of other’s suggestion], [suggestion: combine and keep focused], [“keep it more focused”], [not the frequent return of the word focus in her speech]

4. Excerpt from the transcription of the meeting the author held with the participant’s advisor the day after his meeting with the participant:

Advisor: Oh, yeah, She had an incredibly ambitious [note words incredibly ambitious] [concern for participant] set of questions that she was considering, and at first I think I thought she really wanted to do all of that. [misunderstanding of participant’s intentions] And THEN I realized that she realizes she’s in the early stages of focusing on her methods, so at first I
was a little worried. [worried for participant] So my first impression was to be a little worried about her and that she was maybe biting off more than she could chew. [biting off more than can chew] And THEN when I realized that she wasn’t really thinking about all of that – then I felt less worried about her. [worried for participant]

Author: Was that a little confusing?

Advisor: I was a little confused at first because at first I thought she was saying she really wanted to do all the things on that list and it turned out that it wasn’t true, so I was confused for a while, and so if I sound confused during the interview, that’s because I was. [initial confusion due to misunderstanding of FP’s intentions] [confusion]

A compilation of some of the notes taken by the author while coding the above data set:

[note words incredibly ambitious], [concern for participant], [misunderstanding of participant’s intentions], [worried for participant], [biting off more than can chew], [worried for participant], [initial confusion due to misunderstanding of FP’s intentions], [confusion]

5. A research log entry the author wrote while analyzing the sample data set:

Finally, the author drafted a memo to capture his impressions of the interaction and how he saw the data interacting with each other during
MEMO-Interview with Participant’s Dissertation Committee Member 10/16

Just finished transcribing Participant’s interview with [dissertation committee member] and I learned a lot of things that I am going to classify as pedagogical implications.

Discussing his meeting with Participant yesterday and transcribing it today, I realize that I will need to include several findings in the write-up. First, the professors and the participants seem to recall the meetings somewhat differently. Advisor’s meeting with Participant suggests that he adjusts his “help” according to the task at hand. Participant came in needing help with the prospectus and it was apparent that advisor has done that task (page 1) many times over the years so he knew exactly where to go with it and what to expect. It wasn’t the case, however, with Participant who requested a meeting and came in and didn’t really make it clear what she needed help with … Advisor was clearly was concerned about and frustrated with Participant (page 2) because his first impression was that “she was biting off more than she could chew” and he was worried and confused and then later understood what she needed and was instantly less confused.

Then the next day the advisor said that the source of their nervousness in visiting professors is maybe that they need to interact in a way that’s different than how they interact with professors in Taiwan…and this is difficult for them because they “are not used to this style of communication and are not quite sure what the rule here is” (p. 3). This would be a good quote to file for later use.
As is evident in the memo entry above, the author relied heavily upon his reflective memos as a free-thinking space in which he chronicled his reactions all aspects of the data. Knowing he would be the only one to read over his memos, he paid no attention to correctness of grammar or vocabulary use; his purpose was to record his ideas as rapidly as possible.

In reading the above memo, it is important to note that the author did not subject his own memos to the data codification procedures described above. While he did take copious notes in the margins of these memos, the purpose of his reflective memos was to help him process his reactions to the data. Moreover, he feared that coding his own words might inadvertently shift his take on what he was seeing in the data.

As is evident through a review of the codes derived from data samples 1-4, a number of patterns continued to play themselves out in the data. While limited space forbids the author from expounding on crucial aspects of grounded theory, such as the recursive process through which the codes data and categories evolve into theory, suffice it so say that the following five topics were explored in detail in the final research report of the study:

1. “biting off more than she could chew”;
2. The dissertation advisor’s concern for the participant’s over-ambitious (“overzealous”) approach to her study;
3. The participant’s frequent use of the word “focus” in describing the self-perceived deficiencies and difficulties in her study design;
4. The frequent use of strategies on the part of the advisor to encourage the participant to limit the scope and range of her study to keep it doable;
5. The cultural differences between the advisor and the participant
(e.g., her constant laughter during the interview when she was nervous) and the participant’s (possibly culturally, possibly idiosyncratic) desire to impress her advisor by creating what her advisor believed to be an “over-zealous” research design (Johanson, 2001).

VI. Reaching a Saturation Point in the Data Collection Process

A chief advantage of the recursive nature of grounded theory research is that it enables the researcher to identify process in the phenomenon being investigated. By marking carefully his or her reactions to the data in either a research log or through reflective memos, the researcher can determine when to stop collecting data and when to begin the final write-up of the research report. Once the researcher reaches this saturation point in the data, he or she would be advised to compile all memos written up to that point and expose them to the same codification procedures as listed above. If he or she has been diligent in recording his or her reactions to the data in the research log or memos, all there remains to be done is to weed out the “dead-ends” and write up the findings in a final research report. Like all aspects of qualitative research, however, this is easier said than done.

VII. Conclusion

This paper serves as a brief, user-friendly explanation of what it

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12 In all, the author composed more than 300 memos, ranging from a couple of sentences to several pages, over the five months of the study.
means to conduct grounded theory, a type of qualitative research, in the social sciences. Drawing on his own research on the role of interactions in the academic writing of five Taiwanese doctoral students pursuing advanced degrees at an American university, the author explains the basic tenets of qualitative research and demonstrates how to implement the necessary coding processes on samples of actual data. It is the author’s hope that this article, despite its myriad limitations, inspires Taiwanese researchers in the social sciences and beyond to consider the benefits of conducting this type of naturalistic inquiry.

Appendices

Appendix A: Terms Frequently Used in Conducting Qualitative Research

Set out below is a list of some terms commonly used in the qualitative research literature. While this list is far from exhaustive, it should give the consumer and producer of qualitative research enough information to familiarize him/herself with this type of research inquiry.

Case: “a particular instance of a phenomenon of interest to the researcher” (Gall et al., 1996, p. 754).

Case study research: “The in-depth study of instances of a phenomenon in its natural context and from the perspective of the participants involved in the phenomenon” (Gall et al., 1996, p. 754). (See Yin [1994] and Stake [1994, 1994] to read further about case studies.)

Chain of evidence: “the validation of a study’s findings by
demonstrating clear, meaningful links among the study’s research questions, the raw data, the data analysis, and the findings” (Gall et al., 1996, p. 754).

Coding: “The analytic processes through which data are fractured, conceptualized, and integrated to form theory” (Strauss & Corbin, 1998, p. 3).

Constant comparison: “In the grounded theory approach, a process for analyzing qualitative data to identify categories, to create sharp distinctions between categories, and to decide which categories are theoretically significant” (Gall et al., 1996, p. 756).

Construct validity: “the extent to which a measure used in a case study correctly operationalizes the concepts being studied” (Gall et al., 1996, p. 751).

Convenience sample: “A group of cases that are selected simply because they are available and easy to access” (Gall et al., 1996, p. 756).

Cross case analysis: the process through which the analyst compares the findings of each case (in a collective case study) with the other cases

Emic perspective: “The research participants’ perceptions and understanding of their social reality” (Gall et al., 1996, p. 758).

Etic perspective: “the researcher’s conceptual and theoretical understanding of the research participants’ social reality” (Gall et al., 1996, p. 759)

External validity: the extent to which the relationships drawn between elements of the phenomenon being investigated can be
generalized to other settings

- **Generalizability**: the extent to which the findings of a study can be generalized to similar such cases

- **Grounded theory**: “An approach to theory development that involves deriving constructs and laws directly from the immediate data that the researcher has collected rather than drawing on an existing theory” (Gall et al., 1996, p. 760).

- **Informed consent**: “The ethical and legal requirement that a researcher tell all potential research participants about the study’s procedures, the information that they will be asked to disclose to the researcher, and the intended uses of that information” (Gall et al., 1996, p. 761).

- **Intense-case sample**: “A group of cases that manifest the phenomenon of interest to a considerable degree, but not to an extreme degree” (Gall et al., 1996, p. 761).

- **Internal validity**: “the extent to which the researcher has demonstrated a causal relationship between X and Y by showing that other plausible factors could not have caused Y” (Gall et al., 1996, p. 571).

- **Interpretive validity**: “The extent to which the knowledge claims (i.e., interpretations) resulting from a qualitative study satisfy four criteria: they have useful consequences’ they take context into account; they acknowledge the researcher’s role in the study; and they are accepted as authentic by readers” (Gall et al., 1996, p. 761).

- **In vivo concept**: a term that exists in the data and that the investigator chooses to use as its own category to represent the
phenomenon under investigation (Strauss & Corbin, 1998)

Matrix: “In a qualitative research report, a type of variable that has defined rows and columns for reporting the results of data analyses and other information” (Gall et al., 1996, p. 763).

Member check: a process in which the researcher confirms the accuracy of his or her impression of the results of the study with the participants.

Microanalysis: “the detailed line-by-line analysis necessary at the beginning of a study to generate initial categories (with their properties and dimensions) and to suggest relationships among categories, a combination of open and axial coding” (Strauss & Corbin, 1998, p. 57).

Observer effect: “Any action or bias of an observer that weakens the validity or reliability of the data that the observer collects” (Gall et al., 1996, p. 764).

Participant-observer role: “the observer’s assumption of a meaningful identity within the group being observed, but that does not involve engaging in activities that are at the core of the group’s identity” (Gall et al., 1996, p. 765).

Participant observation: when the researcher becomes part of or an actual participant in the situation being observed.

Peer debriefer: a person who serves as a sounding board for the researcher during the data-collection and analysis procedures for a study.

Postmodernism: “A broad social and philosophical movement that questions the rationality of human action, the use of positivist
epistemology, and any human endeavor (e.g., science) that claims a privileged position with respect to the search for truth or that claims progress in its search for truth” (Gall et al., 1996, p. 767).

- **Qualitative research:** “Inquiry that is grounded in the assumption that individuals construct social reality in the form of meanings and interpretations, and that these constructions tend to be transitory and situational. The dominant methodology is to discover these meanings and interpretations by studying cases intensively in natural settings and by subjecting the resulting data to analytic induction” (Gall et al., 1996, p. 767).

- ** Reflexivity:** “the researcher’s act of focusing on himself of herself as a constructor and interpreter of the social reality being studied (Gall et al., 1996, p. 768).

- **Reliability:** “the extent to which other researchers would arrive at similar results if they studied the same case using exactly the same procedures as the first researcher” (Gall et al., 1996, p. 769).

- **Snowball sample (chain sample):** “A group of cases that are selected by asking one person to recommend someone suitable as a case of the phenomenon of interest, who then recommends another person who is a suitable case or who knows of potential cases; the process continues until the desired sample size is achieved” (Gall et al., 1996, p. 770).

- **Structured interview:** “A type of interview in which the interviewer asks a series of closed-form questions that either have yes-no answers or can be answered by selecting from among a set of short-answer choices (Gall et al., 1996, p. 771).
Subjectivity audit: (see Strauss & Corbin [1998] for more information)

Tacit knowledge: “Implicit meanings that the individuals being studied either cannot find the words to express or that they take so much for granted that they do not explicate them either in everyday discourse or in research interviews” (Gall et al., 1996, p. 772).

Theme: “an inference that a feature of a case is salient and characteristic of the case” (Gall et al., 1996, p. 772).

Theoretical saturation: “In the grounded theory approach, the point in data collection when the researcher concludes that no new data are emerging to call into question established coding categories, no additional categories are necessary to account for the phenomena of interest, and the relationships between categories are well established” (Gall et al., 1996, p. 773). [See Strauss & Corbin, 1998, p. 143 for more information.]

Thick description: “a richly detailed report that re-creates a situation and as much of its context as possible, along with the meanings and intentions inherent in that situation” (Gall et al., 1996, p. 773).

Triangulation: “The use of multiple data-collection methods, data sources, analysts, or theories as corroborative evidence or the validity of qualitative research findings” (Gall et al., 1996, p. 773).
Appendix B: Some Useful References To Consult Regarding Qualitative Research


Publications.


Works Cited


社會科學學門中實施基礎計量研究之導論

周若漢*

提要

此篇文章針對近年來在社會科學學界相當受歡迎的一套語言研究——實證理論，提出一個易於理解、且非理論性的介紹。依循概略介紹到計量研究和實證理論的基礎，作者藉由自身探討台灣博士班研究生學術論文寫作習得的經驗，以說明實行如此較自然研究方式的相關過程。文章的最後一部分——附錄處，包含了許多常用來指導和報告計量研究相關結果的語彙、以及參考書目以供讀者們欲深耕一步認識計量研究方法論之用。

關鍵字：學術著作、實證理論、自然主義研究、計量研究

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