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Qualitative Research and a Modified Grounded Theory Approach

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Abstract

The purpose of this article is to introduce the modified grounded theory approach (M-GTA) developed by Kinoshita (2003, 2007) for the English language. M-GTA is a modified version of the grounded theory approach (GTA), but is different from GTA in its strict coding procedures. It does not employ the method of finely fragmenting data (e.g., coding data line by line), and it forms concepts straight from interpretations of data on an analysis worksheet (Kinoshita, 2003). Kinoshita (2003) uses a two-stage data analytical procedure: *open coding* comprises concept formation, while *selective coding* comprises thematic category formation. In *open coding*, written responses or recorded interviews are transcribed verbatim. Sentences that seem to have similar patterns are then gathered and given a concept name. On an analysis worksheet, the concept name, its definition, examples, and theoretical notes are recorded. Questions, ideas, or opposite examples, etc., are recorded in theoretical notes. Several concepts are integrated into a category, and several categories are then integrated into a core-category. A Diagram with descriptions of relationships among concepts, categories, and core-categories is developed. A narrative theme called Storyline is then presented. The point of *theoretical saturation* should be determined by the scope of the research question, the practicality of time allotment, and the appropriate resources available to conduct the study.

Keywords: M-GTA, GTA, qualitative research, Diagram, Storyline

1. Introduction

The purpose of this article is to introduce M-GTA for the English language and to show the differences between M-GTA and GTA. While GTA is well known internationally, M-GTA is known only in Japan, because most articles regarding M-GTA have been written in Japanese. I will review articles on M-GTA and GTA and I will also mention

paradigms, perspectives, research methods (quantitative and qualitative), and validity and reliability to further understand M-GTA and GTA.

2. Positivism and interpretivism

Research is based on paradigms, mainly positivist or interpretivist (Punch, 1998). Neuman (1991) defined a paradigm as "a framework or a set of assumptions that explain how the world is perceived" (p. 57). He distinguished between positivist and interpretivist paradigms. Khan (2014) explained Neuman's definition as "The positivist view of the world is objective where behaviour and cause and effect can be measured and human activity can be predicted" (p. 225). This means that results can be generalized, as a large number of participants can participate in the research. On the other hand, he explained the interpretivist view as below:

> An interpretivist view of the world is subjective, where individuals form their own reality of the world in different contexts through interactions with others. Every individual perceives the world differently and views it in different contexts. Therefore, their actions and behaviours are unpredictable. (p.225)

This means that the results are not generalized, but are grounded in the particular realities of each participant and provide in-depth accounts of the subjects. These paradigms are based on two perspectives: ontology and epistemology (Denzin & Lincoln, 2003; Punch, 2013). Ontology is concerned with the nature of reality (Creswell, 2007; Punch, 1998), while epistemology is concerned with the researchers' perception of reality (Creswell, 2007; Gratton & Jones, 2004; Punch, 1998).

3. Quantitative and qualitative approaches

There are two standard ways of conducting research, the quantitative approach and the qualitative approach. A quantitative approach is experimental, focuses on numerical data, and uses statistical analysis. It is used to generalize results from a larger sample population. Quantitative data collection methods include various forms of surveys.

On the other hand, a qualitative approach is an interpretive and naturalistic approach and is non-experimental, focusing on verbal narratives like spoken or written data. A qualitative research design provides the best means to explore complex processes and investigate little-known phenomena. As Denzin and Lincoln (1994) write, "Qualitative researchers study things in their natural settings, attempting to make sense of, or

interpret phenomena in terms of the meanings people bring to them" (p.2). Therefore, subjectivity is valued. Consequently, a qualitative approach allows the researcher to get closer to the data and typically requires a smaller sample size than the quantitative analyses to gain an in-depth analysis of the subjects.

4. Validity and reliability in qualitative research

In quantitative research, validity refers to the believability of the research. There are two aspects of validity. Internal validity comprises the appropriateness of the instruments or procedures used in the research. External validity means that the results can be generalized beyond the immediate study. Reliability refers to the replication of findings (Merriam, 1998).

Since validity and reliability are rooted in positivist perspectives, they should be refined for use in an interpretivist approach (Golafshani, 2003). Lincoln and Guba (1985) proposed rigorous criteria for judging qualitative research and explicitly offered it as an alternative to quantitative criteria. "Credibility" is an alternative to internal validity. It denotes that the results of qualitative research are credible or believable from the participants' perspectives. Longitudinal observation of participants, triangulation, and peer debriefing are needed to show "credibility." "Transferability" is an alternative to external validity and refers to the degree to which the results of qualitative research can be transferred to or resonate with other contexts or settings. This requires a thorough description of the research process. In qualitative research, there is no expectation of replication (Simon, 2011) as the in-depth analysis of a phenomenon within the particular context in which it exists may be difficult to replicate. The essence of reliability for qualitative research lies in the consistency of the data and results (Leung, 2015) regarding the phenomenon under study. Lincoln and Guba (1985) use "dependability" in qualitative research, which closely corresponds to the notion of reliability in quantitative research. It is necessary to document all procedures in the study to increase the consistency (Creswell, 2009). Thick description, which comprises a detailed account of the context and a description of the procedures from beginning to end, allows readers to follow the process and understand validity and reliability in the study.

There are various approaches a researcher can take to address validity and reliability in qualitative studies. The most popular of these are triangulation and peer debriefing (Simon, 2011). "Triangulation is the process of corroborating evidence from different individuals, types of data, or methods of data collection" (Creswell, 2005, p. 600). "Peer debriefing is the review of the data and research process by someone who is familiar with the research or the phenomenon being explored" (Creswell & Miller, 2000, p. 129). Peer debriefing requires researchers to work together with one or several colleagues who hold impartial views of the study. The impartial peers examine the researcher's transcripts,

final report, and general methodology. Afterwards, feedback is provided to ensure validity and reliability.

5. Grounded theory approach (GTA)

GTA (Glaser & Strauss, 1967) comprises a discovery oriented research framework aimed at gaining insights from the point of view of participants. It is a way of strengthening qualitative research. GTA is an inductive approach through which theory is generated from the data rather than testing a preconceived idea or hypothesis (Strauss & Corbin, 1998). In sociology, the inception of GTA was to bridge the gap between theory and empirical research by connecting theory to evidence through the process of engaging with the data rather than using a deductive approach (Dey, 2004).

Glaser and Strauss (1967), originators of GTA, use the *constant comparative* method of analysis. This process is reiterative as data collection and analysis occur almost simultaneously. The idea is that a researcher gathers and analyzes data, and compares them with previously collected data in order to determine variables. In GTA, sampling is conducted according to the principle of *theoretical sampling*. As the data are collected and analyzed, it is further decided what data are to be collected next (Glaser & Strauss, 1967; Strauss & Corbin, 1998). Regarding the issue of *theoretical sampling*, Glaser and Strauss (1967) recommend the concept of *theoretical saturation* (when data collections offer no new understandings) for achieving an appropriate sample size in qualitative studies. However, Thompson (2011) points out that little has been written about sample size. Following Glaser and Strauss, Thompson (2011) also states that sample size should be determined by the point of *theoretical saturation*, which can be affected by the scope of the research question, the sensitivity of the phenomena, and the ability of the researcher. Patton (1990) writes that when deciding on sample size, there is no precise number. He posits that the number depends on the purpose of the research, what the researchers hope to learn, and the feasibility of accomplishing what the researchers wish to achieve within a reasonable time-frame with the resources that are available.

Since Glaser and Strauss first developed GTA in 1967, it has continued in a developmental process of amendments for the last five decades, as Glaser and Strauss specified very little in the way of coding (Suddaby, 2006). Moreover, a rift emerged between the two founders after each altered their own method in different ways. GTA is mainly split into two versions: the Glaser version (Glaser, 1978, 1992), and the Strauss and Corbin version (Strauss, 1987; Strauss & Corbin, 1990, 1998). These reflect the different philosophical backgrounds of the two founders. According to Charmaz (2006), Glaser's background lies in Columbia University positivism, while Strauss was educated at the Chicago School of Sociology with its stress on qualitative research.

At first, Glaser (1992) specified phases to analyze the data: *open coding*, *selective*

coding, and *theoretical coding*. He suggested 18 coding families covering ideas like dimensions and elements, mutual effects and reciprocity, social control, recruitment and isolation, and many other ideas for categories and relationships. Glaser (2005) has since expanded the number of coding families to 41 in total. However, these are difficult to understand especially for novice researchers.

On the other hand, Strauss (1987) moved the method towards verification, and Strauss and Corbin's version is more famous than the earlier version of GTA (Khan, 2014), because its detailed and systematic methods are more friendly for the novice user. Strauss and Corbin (1990, 1998) elaborated on the original work and divided the data analysis process into three main phases of *open coding*, *axial coding*, and *selective coding*, which are the most widely accepted in the world. In Strauss and Corbin's (1998) version, the data are transcribed verbatim. Every word, phrase, or sentence in each line of data is analyzed. Each analyzed line is then broken down into codes. This microscope analysis serves to prevent researchers from biased analyses. Then, in *open coding*, the codes are compared, and similar codes are grouped together, with each group becoming a concept. These concepts are contrasted and clustered on an abstract level as categories (Strauss & Corbin, 1998). *Axial coding* is the "process of relating categories to their subcategories" (Strauss & Corbin, 1998, p. 123). In other words, axial coding comprises "intense analysis around one category" (Strauss, 1987, p. 32) using properties and dimensions. Properties ask "What are the characteristics of items?" or "What attributes are specific to this one concept?" Dimensions answer questions about the variance of such properties. LaRossa (2005) wrote that there is confusion about the mechanics of axial coding.

> Strauss and Corbin's (1990, 1998) use of the term *subcategory* is not very helpful. In many people's minds, the prefix *sub* denotes under or beneath as in submarine or subsample. Thus, a subcategory can be thought to refer to a category that is under another category (e.g., pens and pencils subsumed under writing instruments). But this is not how sub has been used in Strauss and Corbin's version of GTM [grounded theory methods]. In their scheme, subcategory denotes a category that is related to–not a subclass of–a focal category. (pp. 847–848)

Saiki (2014), a student of Strauss, also pointed out the misunderstanding of the term "subcategory." After one primary category is chosen from among various categories, the other categories then become subcategories; that is, they become related categories that further inform the selected category. According to Strauss and Corbin (1998), "subcategories answer questions about the phenomenon such as when, where, why, who, how, and with what consequences" (p. 125). *Selective coding* leads to the formation of core themes that operate as an umbrella category (or categories) in which to cover the data labeled under open and axial coding. Thus, "selective coding refers to the integration of the categories to structure the initial theoretical framework so as to analytically come up

with the grounded theory from the data" (Khiat, 2010, p. 1472). This continues until *theoretical saturation* has been reached; that is, when data collections offer no new understandings (Strauss & Corbin, 1990). Strauss and Corbin (1998) state that this process is "a free-flowing and creative one in which analysts move quickly back and forth between types of coding, using analytic techniques and procedures freely" (p. 58).

Glaser, however, did not agree with the concept of *axial coding*. He thought that it would encourage researchers to force conceptual linkages upon their data. "In his view, the stage of *axial coding* is too rigid, forces data, hinders emergence and leads to conceptual description instead of grounded theory" (Seidel & Urquhart, 2013, p.237). Glaser noted that conceptual linkages between or among variables should emerge without bias from the researcher. Glaser (1992) also argued strongly that research should begin in an area of interest to understand a phenomenon with no preliminary literature review and no defined research problem prior to the first interviews and observations. The initial data collections should help the researcher discover the ''emergent'' research problem (Glaser, 1992). Strauss, on the other hand, moved to favoring the selection of a research problem before beginning a research project (Strauss & Corbin, 1998). Whereas Glaser placed heavy emphasis on the unbiased view of emergence, Strauss and Corbin adopted the view that a researcher does play a role in emergence and that this reality should be taken into consideration. Strauss argued that it is naïve to assume that a researcher with an educational background could enter a research situation, as Glaser believed, with a *tabula rasa*, i.e., without any preconceived views of the research environment. Adopting their view, it would be unrealistic to assume that researchers could enter into that environment with any preconceptions.

6. Modified grounded theory approach (M-GTA)

M-GTA is a modified version of the GTA, which was developed by Kinoshita (2003, 2007). Kinoshita (2003) wrote that all versions of GTA should have the following five components: 1) They should be grounded on data, and theory is generated, 2) data are categorized using *open coding* and *selective coding*, 3) categories emerge from data using the *constant comparative* method, 4) *theoretical sampling* occurs as the researcher considers the next steps in data collection, and 5) *theoretical saturation*, in which conceptual categories have sufficient substantial evidence to support them.

Kinoshita (2003) recognized that Glaser, who was trained in quantitative methodology, aimed at rigorous analysis (e.g., data were broken down minutely into words, phrases, or utterances and were labeled by categorizing them into codes) for qualitative studies to protest against the preoccupation of quantitative studies. Kinoshita (2003) understood that this would be meaningful because qualitative approaches suffered from being labeled as impressionistic and were criticized for not being rigorous or systematic; on the other

hand, in the 1960's, quantitative methods were seen as rigorous and scientific.

However, Kinoshita does not follow Glaser's approach in two distinctive ways. One is the researcher's role in the emergence of the data, and the other is the fragmentation of data during the coding process. He disagrees with Glaser's insistence on the "emergence from data" unbiased from the researcher, because this is not realistic (Kinoshita, 2003). Kinoshita (2003) is in agreement with Strauss on this point. He evaluates Strauss as an interactionist and interpretivist, and follows his stance that the researcher plays an interactive role in categorical formation from the data. However, Kinoshita (2003) disagrees with Strauss's position that data should be broken down into small chunks, labeled, and coded. Kinoshita (2003) insists that fine fragmentation narrows the context of participants' statements or actions, which would otherwise help researchers to formulate richer concepts from the data.

In relation to the above, M-GTA differs from GTA in terms of its strict coding procedures. M-GTA forms concepts straight from interpretations of data on an analysis worksheet, not using codes (Kinoshita, 2003). Analyzing codes in the second and third stages of analysis in GTA makes interpretation difficult (Kinoshita, 2003). Although the data have been fragmented for rigid analysis, researchers cannot be unbiased and transparent. They need questions and interest to analyze data. In M-GTA, researchers conduct a preliminary literature review and define a research problem before conducting interviews. It is necessary to have the researcher's view or theoretical stance on his/her own research.

M-GTA is an analysis method suitable for cases with process characteristics, such as when research subjects change through a process. Additionally, M-GTA is suitable for analyzing interview data and focuses on organizing substantive theory for practical utilization (Kinoshita, 1999, 2003). Saiki (2014) analyzed 430 Japanese articles that utilized grounded theory. The findings indicate that M-GTA was adopted in 213 articles. Thus, it can be said that M-GTA is well known in Japan.

7. Analysis procedure of M-GTA

M-GTA aims to generate knowledge that can be generalized within a limited and particular scope. It requires the following condition setting using the terminology put forth by Kinoshita (2003): the *Researcher-At-Work* generates the knowledge through the *Analytically-Focused Person*, and the individuals apply the knowledge in actual settings through the viewpoints of the *Analytically-Focused Person*. M-GTA requires that *Analytical Themes* be clarified, meaning research questions need to be composed.

Analysis is conducted in the following manner. To avoid fragmentation of the data analysis, M-GTA uses a two-stage procedure. *Open coding* comprises concept formation, while *selective coding* comprises thematic category formation. In *open coding*, all written

responses or recorded interviews are transcribed verbatim. Examining sentences that seem to have similar patterns are gathered and given a concept name. Analysis worksheets are then made. Kinoshita (2003) recommended using word processor software rather than spreadsheet software. On an analysis worksheet (see Table 1), a concept name, its definition, examples, and theoretical notes are recorded. Questions, ideas, or opposite examples, etc., are recorded in theoretical notes. One analysis worksheet is created for each concept (Okazaki, 2012). In *selective coding*, several concepts are integrated into a category and several categories are integrated into a core-category. Core-categories are not always necessary in M-GTA (Kinoshita, 2003). A Diagram with descriptions of the relationships among concepts, categories, and core-categories is developed according to the results. Then, the Storyline, which is a narrative theme with the words of concepts, categories, and core-categories, is presented. To further clarify the analytical process of M-GTA, I will show an analysis worksheet, Diagram, and Storyline using my previous research on pre-service teachers' (PSTs') developmental process for teaching English in their teaching practicum. Table 1 is an example of an analysis worksheet.

Table 1
Analysis Worksheet of Concept

Concept	<Guessing>	
Definition	Trying to understand English from gestures, expressions, and situations	
Examples	PST-A	I was impressed that the children guessed meanings of English words without the teacher's translation or explanation. (Oct. 17, log)
	PST-B	The children could somehow understand English that they had not yet learned by understanding the situations. (Oct. 17, log)
	PST-E	Even if a teacher used slightly difficult English, the children could understand the meaning from the teacher's expressions and gestures. (Oct. 17, log)
	PST-D	Previously, I thought that children could not understand English without explanation or translation. Now, I know I was wrong about this. (Oct. 18, discussion)
	PST-B	The children could guess the meanings of English words from the teacher's gestures. It is important to make children guess the meanings of English words. (Oct. 18, discussion)
	PST-C	It is significant to develop the ability to guess meanings. (Oct. 18, log)
	PST-D	Teachers should speak English almost all the time, because children can understand English through the teacher's gestures and expressions. (Oct. 18, log)
	PST-E	I understood that it was important to make children think about the meanings of English words through the teacher's

	use of lots of English with gestures and expressions. (Oct. 18, discussion)
Theoretical notes	The children were learning English in an inductive way without explanations or translations. This is different from pre-service teachers' traditional ways of learning. Teachers should make children guess the meanings of English words.

This concept <Guessing> made up a category [Children's ways of learning English] together with other concepts <Listening>, <Alphabet>, and <Grammar>. The category [Children's ways of learning English] created a core-category "Learning in an authentic classroom" with another category [English knowledge]. The Diagram (Figure 1) and Storyline are shown below.

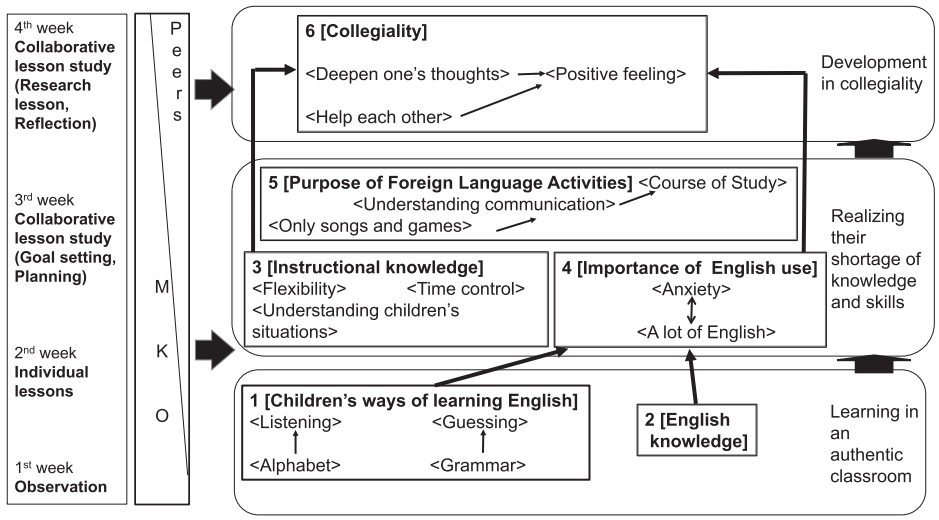

Figure 1. Diagram showing relational core-categories, categories, and concepts

Storyline

In the first week, the pre-service teachers observed the homeroom teacher's lessons, and a change in their conceptualizations of teaching occurred. They were able to observe (1) [Children's ways of learning English], especially children's <Listening> and <Guessing> abilities. They changed their beliefs regarding <Alphabet> and <Grammar>. They also gained (2) [English knowledge] of familiar English words and practical expressions. "Learning in an authentic classroom" had an impact on the pre-service teachers.

In the second week, the pre-service teachers conducted individual lessons and were able to learn (3) [Instructional knowledge]. They struggled in conducting their lessons and recognized their lack of <Flexibility> and <Time control>, as well as the necessity of <Understanding children's situations>. They also learned the (4) [Importance of English use]. Although they understood that they should use <A lot of English> in a lesson, they felt <Anxiety> when using English with the children.

In the third week, they started their collaborative lesson study, which involved making one lesson unit together. During their discussions, they realized (5) [Purpose of Foreign Language Activities], supported by the homeroom teacher. First, they thought that activities were <Only songs and games>. However, after <Understanding communication>, they understood the purpose of Foreign Language Activities in the <Course of Study>. In the second and third weeks, "Realizing their shortage of knowledge and skills" occurred.

In the fourth week, they conducted a research lesson and had a post-lesson discussion in their collaborative lesson study. At this stage, they came to recognize (6) [Collegiality]. They were able to <Deepen one's thoughts> and <Help each other> in their peer interactions. In the end, they had a <Positive feeling> about teaching Foreign Language Activities. They had "Development in collegiality."

In the *constant comparative* method, data are gathered, analyzed, and compared against previously collected data. Regarding *theoretical sampling* (purposeful sampling), Kinoshita (2003) uses "methodological restriction," which means that sampling should be restricted to the research questions. He says that the sample size may best be determined by the study objectives. The point of *theoretical saturation* should be determined by the scope of the research question and the practicality of time allotment, as well as the appropriate resources available to conduct the study. Kinoshita (2003) mentions that for the decision of *theoretical saturation*, it is difficult to precisely determine at what state the cutoff point should be in the data collection and analysis, and it does not have to be done perfectly.

8. Conclusion

I have introduced M-GTA for the English language and shown the differences between M-GTA and GTA. As stated, M-GTA is well known in Japan and there is a great deal of research using M-GTA. However, M-GTA is not known internationally because most studies are written in Japanese. Hence, I hope that this article contributes to introducing M-GTA outside of Japan.

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