

An Overview of Grounded Theory Design in Educational Research

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Abstract

Over past decades, grounded theory is increasingly popular in a broad range of research primarily in educational research. The current paper aims to provide useful information for the new-comers and fit them well in grounded theory research. This paper starts with definitions, origin and applications of grounded theory, followed by types of grounded theory research designs and the key characteristics of grounded theory. Other aspects covered include data collection and data analysis, general steps, and ethical issues in grounded theory. Discussions on the strengths and limitations of grounded theory, as well as evaluation aspects, are found in the last part of this paper.

Keywords: grounded theory, educational research, research design, qualitative research

1. Introduction

Grounded theory is a form of qualitative research designs. Lincoln and Denzin (2005) viewed qualitative research as a practice of examining studied subjects in natural settings and then transforming and making sense of the studied phenomenon through the interpretation of gathered field notes, photographs, conversations, and the other similar representations (as cited in Greg et al., 2013). Qualitative research is also concerned about an individual's assumptions and values, thus it tends to gather enriched data for data interpretation (Hancock, 1998). Grounded theory was advocated and developed by Strauss and Glaser in the last century, in the 1960s (Birks & Mills, 2011). At that time, Strauss and Glaser conducted social science research in hospitals on death awareness. They were trying to produce a new theory rather than verify the existing theory. Based on their research, the grounded theory has begun to be established.

According to Opie (2004), grounded theory is a process of collecting qualitative data and undertaking data analysis to generate categories (a theory) to explain a phenomenon of interested. As the theory is generated from the collected data, it could not be a discrepancy from truth. Similarly, Creswell (2012) viewed grounded theory as a powerful tool when a researcher needs a broad theory or explanation of a natural phenomenon. Creswell (2012) also viewed that the emerging theory is "grounded" or rooted in the data, thus it will provide a more sophisticated explanation than a theory derived from other studies. Thus, grounded theory design can be used when the current available theories fail to describe the phenomenon of interested (Leedy & Ormrod, 2005). Apart from creating new theories, grounded theory could be viewed as a process to examine data in order to discover theories that contained within (Bound, 2011). Furthermore, grounded theory is applicable to complex behavioral problems even though the contributor factors have not been identified (Stern, 1980). Besides, the created theory has the advantage of to be consistent with empirical evidence due to its nature of rooted in the real data (Eisenhardt, 1989).

According to Bryant and Charmaz (2007), grounded theory design arguably turns up to be the most common and popular qualitative approach. Moreover, grounded theory research has been successfully conducted in many educational studies (Laws & McLeod, 2004). For instances, to seek the life model of physicists and chemists, the nature of a prestigious school, effective counseling, and a school principal's leadership.

2. Types of Grounded Theory Designs

In order to produce high quality grounded theory research, researchers need to understand the grounded theory paradigm and the nature of the study. As advised by Mills et al. (2006), researchers should select a research design paradigm that is parallel with their beliefs about the nature of the phenomenon of interested. Basically,

there are three dominant grounded theory designs, namely the systematic design, the emerging design, and the constructivist design (Creswell, 2012).

2.1 The Systematic Design

This type of grounded theory design is broadly applied in educational research (Creswell, 2012). A typical systematic design in grounded theory is composed of three stages of coding, namely open coding, axial coding, and selective coding (Creswell, 2012).

In the first stage of coding, open coding, a grounded theorist is required to construct initial categories of information about the studied subject by segmenting the collected data (Creswell, 2012). To do so, the grounded theorist needs to identify the important words or phrases and label them by using a suitable term (Birks & Mills, 2011). Later, all collected data are classified into the corresponding categories. According to Waller & Myrick (2008), a grounded theorist might code the data in multiple possible ways and use memos to construct an emergent concept or theory during data analysis. In short, open coding is the initial stage of forming emergent theory or conceptualization.

Axial coding comes second after the open coding (Creswell, 2012). According to protocol described by Creswell (2012), the researcher needs to choose an open category and relate it to other categories. The said categories are related based on their causal conditions of the studied phenomenon, the strategies that used to resolve the studied phenomenon, environmental factors that influence the strategies adoption, and outcomes. In this coding stage, hypothetical relationships between the major categories and their corresponding subcategories are built (Babchuk, 1997).

According to Creswell (2012), selective coding is the third of the three stages of coding. In selective coding, a grounded theorist generates theory by interpreting the interrelationships that emerge among categories formed in axial coding (Creswell, 2012). Selecting coding retains only relevant variables to the core variables in order to yield an explicit theory (Glaser & Holton, 2004). The generated theory can be delivered through writing out the story line that interconnects the categories (Creswell, 2012). The resultant story line enables a grounded theorist to investigate how certain factors affect the studied phenomenon and how certain strategies lead to certain outcomes (Creswell, 2012).

A typical systematic design has been demonstrated by Peine (2003) to investigate gifted students' experience of sitting and waiting in a regular classroom. The researcher used purposive sampling to select 16 participants. The data were collected through a combination of methods, including semi-structured interviews, field notes from classroom observations and conversations with teachers, and maps that were drawn by the participants. Maps were used as a data source because they allowed the participants to represent their learning setting in an alternative way, Peine (2003) further claimed. In open coding, three main categories and 15 subcategories were formed. The main categories were 'School and Classroom Structure Waiting', 'Instructional Waiting', and 'Assignment Waiting'. Then in axial coding stage, the researcher used a model to illustrate the relationships emerged among the main categories and subcategories. The researcher used six components to construct the model, namely (i) the phenomenon, (ii) causal conditions, (iii) the context, (iv) intervening conditions, (v) action/interaction strategies, and (vi) consequences. Finally, in the selective coding stage, the core category was expressed as a grounded theory statement, namely 'Waiting is boring; sometimes waiting is fair'. The researcher explicated the grounded theory by using three propositions: (i) 'Already knowing'; (ii) 'Adjusted doing'; and (iii) 'Being fair'. Based upon Peine (2003), explication of the theory through propositions statements allow the voices of the participants providing concrete evidence to support the generated theory.

2.2 The Emerging Design

Glaser (1992) criticized the approach that advocated by Strauss and Corbin (1990) which overly emphasized a set of particular rules and procedures rather than theory generation (as cited in Creswell, 2012). By contrast, Glaser (1992) emphasised that the generated theories should be guided from the collected data itself and they are more valuable as compared to the operation on a set of preset categories (as cited in Creswell, 2012). Hence, Robson (2002) claimed that the emerging design is especially suitable to be applied to study 'real world' which seems relatively complex, poorly controlled, and messy (as cited in Wright, 2009).

On the top of that, Glaser (1992) further pointed out that the key objective of the grounded theory is to explain a 'basic social process', focusing on the delineation of the relationships between categories and emerging theory rather than purely describing categories (as cited in Creswell, 2012). Eventually, researchers construct a theory by discussing the interrelationships among the emerged categories without referring to a diagram (Creswell, 2012).

An exemplar of the emerging design conducted by Larson (1997) has been discussed by Creswell (2012). The aim of the study was to develop an explanation for high school teachers' conception of the classroom discussion. The researcher examined data to develop categories at first, then the categories were refined into fewer categories, followed by comparing data with emerging categories, and lastly an emerging theory regarding the process of classroom discussion was written without presenting a diagram. Besides, Wright (2009), who has also adopted the emerging design to study adult education, concluded that data analysis is the core component in this research design as the researchers are requested to 'listen' and immerse themselves in the data.

2.3 The Constructivist Design

This design is developed by Kathy Charmaz (Hallberg, 2006). Constructivists viewed that multiple social realities occur simultaneously rather than a single reality (Hallberg, 2006). The design advocator, Charmaz (2008a), viewed that the constructivist design has advantages in addressing why questions and preserving the complexity of social life. Charmaz (1990, 2000, 2006) paid more attention in individuals' principles, opinions, beliefs, sensations, expectations, and philosophy rather than truths and explaining acts (as cited in Creswell, 2012). In other words, constructivist design emphasizes the values and beliefs of the researchers. Thus, constructivist design gives a new interaction between researchers and participants and this on-going interaction will continue contributing to data construction (Hallberg, 2006). It is also assumed that the reciprocal relationships between actions and meanings- actions affect meaning and meanings influence actions (Hallberg, 2006).

According to Guba and Lincoln (1994) and Schwandt (1994), a constructivist design aims to explain participants' meanings towards a process in reality (as cited in Ghezalje & Emami, 2008). For instance, Charmaz (1994) used a constructivist design research to explore the experiences of chronic illness among 20 participants (as cited in Creswell, 2012). The researcher reported and captured participants' feelings by using active codes, for examples, awakening, accommodating, and defining (as cited in Creswell, 2012). Finally, Charmaz (1994) summarized participants' experiences, conditions, and consequences in narrative discussion without using any diagrams or figures (as cited in Creswell, 2012). For another, McMillen (2008) adopted a constructivist design to study the feelings and experiences of eight intensive care unit (ICU) nurses (as cited in Ghezalje & Emami, 2008). Constructivist design was adopted because the researcher had the experience in the studied phenomena and worked with the participants, thus it would be easier to reflect the reality as compared to objective outsiders (as cited in Ghezalje & Emami, 2008).

3. The Key Characteristics of Grounded Theory Research Design

Creswell (2012) has listed out six major characteristics of typical grounded theory research, which are widely utilized by grounded theorists. These characteristics are as follows:

a) *Characteristic 1: Process Approach.* Corbin and Strauss (2008) viewed that the research process in grounded theory research is a series of interactions and outcomes among a group of people regarding the studied phenomenon (as cited in Creswell, 2012). In educational research, some examples of the said phenomenon include AIDS prevention, how the first year teaching life of a new teacher, or the leadership of a school principal.

b) *Characteristic 2: Theoretical Sampling.* Theoretical sampling refers to the on-going process of coding the data, comparing the data, and grouping similar data to build categories and core categories (Jones & Alony, 2011). The purpose of theoretical sampling is to systematically direct the grounded theorists to choose the most important data for the studied phenomenon (Jones & Alony, 2011). According to Brown et al. (2002), theoretical sampling can be stopped when theoretical saturation is achieved. Theoretical saturation can be identified through three parameters: (i) no new data is distilled from a certain category, (ii) the category could sufficiently cover salient variations and process, and (iii) the interrelationships between categories have been delineated appropriately, as suggested by Brown et al. (2002).

c) *Characteristic 3: Constant Comparative.* One of the fundamental features of grounded theory pertains to constant comparative (Moghaddam, 2006). As implied by the name, constant comparison is the process of comparing like with like, to trace out the emerging pattern and theory (Goulding, 2002). Besides, Hallberg (2006) viewed the constant comparative method as the 'core category' of a grounded theory design because all the collected data are compared constantly to find out their commonalities and variations. For instances, it involves comparing events to events, events to codes, codes to codes, codes to categories, and categories and categories (Birks & Mills, 2011).

d) *Characteristic 4: A Core Category*. The core category (or central category) portrays the main theme of a study (Strauss & Corbin, 1990). According to Hallberg (2006), a core category can be viewed as the integration of other major derived categories into a theory that rooted in the collected data. Thus, Birks and Mills (2011) proposed that a grounded theorist should choose a core category that is able to explain the rooted theory as a whole. Several criteria for choosing the core category have been pointed out by Strauss (1987) including: (i) the core category can be related to other major categories, (ii) it should emerge frequently in the data, (iii) the generated explanation must be logical and consistent when comparing to the major categories, (iv) the core category should be named sufficiently abstract so that it can be used in other relevant studies, (v) the generated theory should have explanatory power, and (vi) the generated explanation should have the ability to hold among various conditions (as cited in Strauss & Corbin, 1990).

e) *Characteristic 5: Theory Generation*. The outcome of grounded theory research is to construct a theory that explains a studied phenomenon from the collected data. Since the generated theory is close to the data, it does not have an excellent ability for generalization, thus it could not be applied widely for many situations and people, as believed by Creswell (2012). Creswell (2012) further pointed out that the resultant theory can be presented in three forms: (i) as a visual coding paradigm, (ii) as a series or hypothesis, (iii) or as a narrative story. Brown et al. (2002) viewed that building 'story' is a crucial aspect in generating theory as it is capable of expressing the most salient factors of the actual data in narrative sentences. Brown et al. (2002) further added that a good 'story' should delineate the relationships between subcategories to the core category.

f) *Characteristic 6: Memos*. Grounded theorists create memos about the collected data. Mavetera & Kroeze (2009) argued that memo writing is a good idea to record emergent concepts or ideas throughout the research process. These types of memos are known as theoretical memos. Documentation of these ideas and thoughts would prevent paralysis in the process of generating theories as memo writing is helpful to direct researchers into data and questions that need further exploration. Besides, Birks & Mills (2011) reviewed that memo writing is an on-going process from the beginning to the completion of the research and these memos will be transformed into research findings. Corbin and Strauss (2008) added that memo writing is also a powerful analytic tool for researchers to achieve conceptualization. Other than this, memo writing will increase a researcher's intellectual assets (Birks & Mills, 2011). Thus, Babchuk (1997) advised researchers not to underestimate the importance of memo writing as a source of creativity and as a fundamental component to generate emerging theory.

4. Data Collection and Data Analysis in Grounded Theory

To ensure rich data, the data collection stage is a crucial stage to obtain different kinds of sources as an endeavour to develop explicit theories. In general, data could be collected in forms of interviews, observations, focus group discussion, and documents. Of these, interviews arguably the most frequently reported method (Egan, 2002). Egan (2002) proposed that an effective interview should be lengthy at the beginning stage of a study and be more specific and focus on the topic of interest during the final stage. Egan (2002), however, suggested that data could be collected using a combination of methods. Egan (2002) further pointed out that data collection is an on-going process which involves exchanging collected data between the developed codes and categories. The data are likely collected in broad-based and unstructured manner during the initial phase, but when the research process advances, the central themes become more specific, data collection becomes more structured (Egan, 2002).

According to Miles & Huberman (1994), data analysis process for a qualitative research deals with massive data in terms of words, language, and the implied meanings from them (as cited in Walker & Myrick, 2006). The aims of data analysis are to organize and reduce the great deal of data, further sampling each piece of data into themes with similar properties, and consequently lead to theory formation (Walker and Myrick, 2006). Corbin and Strauss (1990) viewed that data coding is an analytic tool for researchers to manage large amounts of raw data. During data coding, data are broken down into smaller chunks, compared, and grouped in categories based on their similarities (Walker & Myrick, 2006).

Along with data coding, Strauss and Corbin (1990) suggested line-by-line analysis for open coding, that is, data are examined phrase by phrase or even in word by word manner. Although line-by-line analysis is somewhat time-consuming, it enables researchers to line out categories quickly (Strauss & Corbin, 1990). Allan (2003), however, claimed that line-by-line analysis not only time-consuming but sometimes it makes researchers lost within massive data. Instead, Allan (2003) suggested the use of 'Key Point Coding', in which researchers should identify the key points from interview data and then concentrate the subsequent analysis on them. Besides, Dey (1993) suggested the researchers to adopt computer software analysis packages to organise data, such as

NUD.IST and ATLAS.ti, as they offer an advantage in generating theoretical categories from only a small amount of data (as cited in Opie, 2004).

Unlike typical qualitative research, research process for grounded theory unlikely is a linear process (Charmaz, 2006). Data collection and data analysis, in general, are woven through the research process (Egan, 2002). That is, grounded theorists collect and analyse the data almost concurrently (Dunne, 2011), and the theory continues to develop along with the existence of new data (Bound, 2011). According to Campbell (2011), the continuous checking and rechecking data process ensure the resultant theory is truly applicable to the studied phenomenon (as cited in Bound, 2011). This on-going course should not be stopped unless the data saturation point is achieved (Egan, 2002).

5. General Steps in Grounded Theory Design Research

Creswell (2012) has outlined eight major steps to conduct grounded theory research. The steps are summarized as below:

- a) *Step 1: Decide whether a Grounded Theory Design Suits the Research Problem.* Grounded theory is applicable to generate a new theory or adjust an existing theory, giving a more explicit explanation to a studied process, and to discover a general perception of the interactions and actions among human being. Grounded theory also appropriate for sensitive topics or when participants request to protect their privacy. Goulding (1999) viewed that grounded theory is also suitable to elicit a theory that receives only a little attention in previous studies, or has been overlooked in the literature.
- b) *Step 2: Plan a Feasible Process to Study.* As discussed before, grounded theory research aims to generate theory for a topic of interest in reality. To accomplish the goal, researchers need to recognize a tentative process in the early stage. The tentative process, however, is changeable during the research. The tentative process should follow from the nature of the research problems and questions that needed to be resolved by the researchers.
- c) *Step 3: Seek Approval and Access.* As the nature of research, grounded theory research also requires researchers to get the agreement from the interested institutions and interviewees to seek the approval to collect data. For instance, in a study with intellectual disabilities adults conducted by Carey (2010), to get access to the participants, the researcher needs to provide the details of the study to the ethics committees, including aim of the study, interview questions, and observation guides. Carey (2010) furthered added that gaining voluntary consent from adults with intellectual disabilities is an on-going negotiation process rather than simply a single act of give-and-accept. A novice grounded theorist not only learns how to conduct grounded theory research, but also learns how to manage the ethical issues (McCallin, 2010).
- d) *Step 4: Theoretical Sampling.* Theoretical sampling is one of the key fundamental concepts in grounded theory, in which it requests researchers keep returning to the original data sources to attain in-depth data. Hence, the researchers need to collect data continuously until the developed categories are saturated and an explicit theory is developed successfully. Thus, Charmaz (2008b) viewed that theoretical sampling is a process of collecting data which will contribute to the illumination of the theoretical categories and consequently construct the emergent theory. Besides, the purpose of theoretical sampling is not to increase the generalizability of the study, but to develop the emerging theory, hence, ground theorists have to seek more uncover cases in the initial stages, as described by Charmaz (2008b). Besides, Glaser (1978) has outlined two main steps in theoretical sampling (as cited in Jones & Alony, 2011). First, a grounded theorist undertakes constant comparison to the collected data in term of their minimal differences. This step is helpful in developing and defining categories quickly. Later, the researcher needs to maximize the differences in collected data to ensure all the categories are fully defined and the data saturation is achieved.
- e) *Step 5: Code the Data.* During the data collection process, all the data need to be coded. Data coding process aims to guide researchers to determine what data to collect next. The researchers also need to compare the collected data and group the data into the corresponding categories based on their commonalities. A number of 10 developed categories may meet the needs of typical grounded theory research; however it depends on the complexity of the studied phenomenon.
- f) *Step 6: Use Selective Coding and Develop the Theory.* In this step, a grounded theorist needs to triangulate and delineate the relationships between categories in the coding paradigm logically. This step also refines the developed axial coding paradigm and presents it as a conceptual model or a theory of the studied phenomenon. Writing a story to show the emerged interrelationships among categories, as well as describe them narratively, are suggested.

g) *Step 7: Validate the Emerging Theory.* To generate an understandable theory to the public, a grounded theorist needs to render the studied events in the correct sequence. To check the data against categories, the researcher asks questions relevant to certain categories, and return to the data to seek evidence. After forming a theory, the researcher is required to validate the theory by comparing it with extant theories that found in the current available literature.

h) *Step 8: Write a Grounded Theory Report.* Since the grounded theory report is more systematic as compared to other qualitative research, for examples ethnography and narrative research, the structures of a grounded theory research should be more scientific. Besides, the problem statement, methods, discussion, and findings should be included as well.

6. Ethical Issues

A grounded theorist plays an active role in seeking explicit theory from a substantive phenomenon. Hence, an array of ethical issues arises throughout the grounded theory process. According to Creswell (2012), these ethical issues range from how the grounded theorist advancing the purpose of the study, assigning appropriate authority and power to the interviewees, and documenting a logical framework for the grounded theory research in order to enable other grounded theorists to replicate similar research.

To prevent ethical pitfalls, as outlined by American Educational Research Association (2005), educational researchers should (i) avoid any exploitations upon either research populations or organisational settings for private gain, (ii) not force any participants to take part in research, (iii) take individual differences in terms of gender, cultural, and religious into account in their research, (iv) reduce the use of research techniques which might adversely affect the participants, for instance, interventions that might harm students' important parts in standard curriculum, (v) be conscious to the on-going organisational activities and report to the organisations for any possible disturbances resulting from the research, and (vi) report the research findings to the relevant research populations, organisations and others in clear and suitable language (as cited in Drew et al., 2008).

Besides, Khan (2014) viewed that an ethical researcher should inform the details of the conducted research to the participants and their participation must be voluntary. Thus, according to Neuman (2011), the researcher should gain informed consent from participants before approaching them for data collection (as cited in Khan, 2014). Furthermore, for research involving children as participants, the informed consent should be obtained from both children and parents (Diggs-Brown, 2012). Furthermore, gaining access and informed consent from vulnerable groups are somewhat more complicated. For example, to consult with participants with learning difficulties, Stalker (1998) needed to first obtain formal agreement from relevant organisations, such as social work departments and hospital committee, and then the second stage was to seek permissions from professionals within the studied settings. However, gaining permissions did not guarantee that individuals with learning difficulties would agree to participate in the research, Stalker (1998) further added.

During data collection, in regard to ethics approval perspective, Khan (2014) suggested that researchers should try to reduce the institutions' involvement, for instance, researchers could recruit participants through their social networks instead of enrolling participants through participants' institutions. Khan (2014) also suggested several ways to protect participants' identities including: (i) using pseudonyms for participants when transcribing audio-recorded interviews, (ii) keeping all the data in a safe place, for example, a locked cabinet, and (iii) storing all the electronic data in a password protected computer.

7. The Strengths and Limitations of the Grounded Theory

As with other research methods, grounded theory exists with some drawbacks and is not perfect. This part presents some strengths and limitations of grounded theory research. Researchers should take them into account in order to select the most appropriate research methods for their educational inquiry.

7.1 Strengths

Unique to grounded theory, according to Bryant (2002), grounded theory takes researchers' perceptions into account in the research process. In other words, grounded theory offers opportunities to the researchers to use their values and understanding in order to generate a new theory for a very complex phenomenon. This statement greatly manifests the benefits of the grounded theory that allowing researchers to develop a more rigorous theory since many others qualitative research methods are designed to examine an existing theory. Martin & Turner (1986) viewed that grounded theory is a theory discovery method that enables the researcher to generate a theory for a process by grounding the theory from the collected data (as cited in Jones & Alony, 2011). Similarly, Cho & Lee (2014) stated that grounded theory permits researchers to have a glance at the studied phenomena with

new angles and construct new perspectives without restriction on extant theories. Thus, grounded theorists are able to understand the studied phenomena holistically, Cho & Lee (2014) further added.

Some main features of the grounded theory research design belong to constant comparison and theoretical sampling. Theoretical sampling enables participants continuously to provide new evidence until theoretical saturation; meanwhile, constant comparison is an on-going process that requires researchers comparing across the data to generate an emerging theory (Goulding, 2002). Hence, Laws & McLeod (2004) viewed that grounded theory has the great potential to produce a theory with detailed information. As stated by Jeon (2004), “these strategies of comparing and asking questions are embedded in the entire research process to sharpen the researcher’s thinking and help him/her understand what is in the data”. Furthermore, Jones & Alony (2011) highlighted that grounded theory research design enables the researchers to involve themselves into the field to gather useful information about the studied process.

As compared to other qualitative research, case study for example, grounded theory provides a somewhat systematic methodology for researchers (Lawrence & Tar, 2013). Patton (2002) pointed out that data analysis in grounded theory begins with basic descriptions, followed by conceptual ordering and then moves to theory formation (as cited in Walker & Myrick, 2006). For instance, Jones & Alony (2011) felt comfortable with the guiding structure provided by grounded theory, as the analytical process was systematic. This feature possesses some particular significance to doctoral and other graduate programmes. This is because these programmes require that students to select a set of appropriate procedures to distill disciplinary knowledge of diverse philosophies (Birks & Mills, 2011).

7.2 Limitations

Grounded theory provides greater freedom and flexibility for researchers (Jones & Alony, 2011). Potrata (2010), however, has rethought whether the freedom and flexibility would contribute to potential harm in grounded theory research. Potrata (2010) concluded that a set of less rigid guidelines should be outlined for novice researchers, but greater freedom is allowed for skilled and experienced researchers.

To report grounded theory research, writing doctoral thesis in particular, Dunne (2011) argued that writing grounded theory in traditional format, namely ‘literature review ->findings ->discussion’ might lead to a problematic situation because this linear way does not reflect how the actual grounded theory developed. Although that is not an one-size-fits-all template, Dunne (2011) proposed that grounded theorists should express their grounded theory research in a manner that is best suited to the nature of their studies and present their findings in an effective manner. Even more, some grounded theorists, novice researchers in particular, misunderstanding that they should ignore the literature review as grounded theory design is able to generate a theory that does not available in the current literature (McCallin, 2003; Suddaby, 2006). McCallin (2003) held that literature is important to stimulate thinking and promote better theoretical understanding in grounded theory, which in turn contributes to the generation of rigorous knowledge. McGhee et al. (2007), however, suggested that researchers should practice reflexivity, namely an explicit quest to prevent the prior knowledge or available literature distorting researchers’ judgment of the data.

As a fact of the matter, grounded theory is not perfect for all the research questions. According to Suddaby (2006), grounded theory is more appropriate for understanding how a process that subjectively perceived by a group or person, or to study how a reality is understood rather than to generate knowledge regarding objective reality. Besides, there is a risk in conducting grounded theory research to the areas which supported by extensive empirically based literature as the resultant theory might not be truly guided from the data, but prejudiced by the extant literature whether consciously or unconsciously (Goulding, 1999). To avoid this, ground theorists should enter the field to collect data at the initial stage, as suggested by Goulding (1999). Besides, Charmaz (2008c) claimed that, the openness offered by grounded theory permits researchers to conduct investigation on major processes. Charmaz (2008c) found that, ironically, many researchers adopt grounded theory for preconceived problems.

Apart from that, Glaser (1978) concerned about the risk that grounded theorists fail to develop a solid theory after interpreting data (as cited in Jones & Alony, 2011). As a matter of truth, ones’ perceptions on the collected data are somewhat subjective. As stated by Charmaz (2008b), the research process appears to be relying on researchers’ subjectivity. For example, individuals’ thoughts might affect the data coding process and inevitably affect the major categories (Moghaddam, 2006). Thus, data analysis and theory generation also depend on the researchers’ ability. As claimed by Glaser & Strauss (2006), some researchers are incredulous towards themselves and their generated theories as they depend on questionnaires or other “objective” research methods. To resolve this vulnerability, Charmaz (2008b) suggested that grounded theory research should be conducted

with an intersubjective attitude; that is, researchers should always aware their role as researchers and have psychological attitudes rather than merely biographical attitudes in conducting research.

One of the key features of grounded theory is a grounded theorist has the right not to refer back to the participants if the participants agree with the data analysis that did by the grounded theorist (Elliott & Lazenbatt, 2005). In this point of view, the generated theory might be contaminated by researcher's bias, for example, when the researcher believes that extant theories can be applied to many other conditions directly (Glaser & Strauss, 2006). After examining a pool of adult education research, Babchuk (1997) suggested that grounded theory research should be conducted in a collaborative way as researchers could have on-going discussions at all research process. This method will facilitate internal triangulation as well as peer review, according to Babchuk (1997). Collaborative forms of inquiry seem effective in avoiding personal bias. Other than working in collaborative forms, Elliott & Lazenbatt (2005) claimed that memo writing is also an effective way to reduce distortion as it can increase researchers' sensitivity to personal bias.

8. Evaluation for the Quality of Grounded Theory Research Design

There is not an acceptable definition of the 'best' grounded theory research design exists worldwide. Lincoln & Guba (1985), however, have suggested some qualitative criteria to evaluate grounded theory research, including credibility, transferability, dependability, and confirmability (as cited in Elliott & Lazenbatt, 2005). As cited in Brown et al. (2002), credibility refers to what extent the collected data reflect the reality (Lincoln & Guba, 1985); transferability means research's theoretical parameters (Marshall & Rossman, 1995) and the applicability of the findings to other conditions; dependability examines to what degree the data represent the changing conditions of the studied phenomenon; and confirmability ensures the "objectivity" of the researchers, namely to what degree other researchers confirm the study from the same data.

Bitsch (2005) has suggested a series of measures to ensure good quality grounded theory research. To strengthen credibility, Bitsch (2005) proposed that the research team should (i) invest enough time in the study, (ii) conduct a persistent in-depth study to obtain relevant data, (iii) have an on-going discussion with individuals who do not involve contractually, (iv) refine hypotheses for all cases, (v) aware for bias, (vi) re-check data and interpretations with participants' input, and (vii) perform multiple forms of triangulation to enhance research findings. To increase transferability, Bitsch (2005) viewed that probability sampling is an effective way to minimise context-dependence and lead to better generalizability. Besides, as advised by Bitsch (2005), researchers should be consistent in research methods as any changes might jeopardize the dependability of research. Lastly, researchers should follow the research process correctly to ensure that the research findings are truly anchored in the data and not directed by their values or political persuasions (Bitsch, 2005).

Another set of evaluation criteria has been articulated by Strauss & Corbin (1990). They assessed the quality of grounded theory research based on the research process and the research findings. As an effort to assess the research process, they examine: (i) how the sample had been selected, (ii) what were the categories formed, (iii) how the events pointed to the major categories, (iv) how the theoretical sampling proceeded, (v) what were the hypotheses and how were the hypotheses formed and validated, (vi) what were the discrepant events for the generated hypotheses and how did the discrepancies influence the hypotheses, and (vii) how the selection of the core category was undergone. For the assessment on the research findings, they examine: (i) are concepts formulated, (ii) are the generated concepts related systematically, (iii) are there many conceptual relationships and are the categories well-formulated, (iv) how much the variations accounted for the theory, (v) are the broader factors built into the theory, (vi) has the changes or movements been identified, and (vii) do the findings significant and to what degree. Strauss & Corbin (1990) concluded that these guidelines would assist researchers to judge to what extent the generated theory 'fit' the studied process. Furthermore, it also help researchers deliver the research limitations clearly to the interested parties.

To ensure high quality research findings, Sbaraini et al. (2011) have outlined a few guidelines for data collection including: (i) record interviews digitally, (ii) analysis the interview transcripts as soon as possible, (iii) write memos immediately after every interview session in order to grasp the initial concepts, (iv) find opportunities to get access to participants to clarify concepts after interviews, and (v) employ phone interviews in order to have a wider range of participation. During data analysis, Sbaraini et al. (2011) advised researchers to: (i) keep detailed analysis records which help to produce an explanatory paper later on, (ii) make maximum use of constant comparative method in order to generate a well-explained social process model, and (iii) have regular research team meeting to discuss emerging concepts which help to generate a broader scope of disciplinary perspectives.

9. Conclusion

The current paper has presented the general review on the multifaceted aspects of grounded theory. Grounded theory has been widely used to seek an explanation for a phenomenon of interest in social life. Grounded theory research design is especially helpful in generating explanations or refining contemporary theories for complex phenomena in social life. Grounded theory also is applicable to practical problems in which established theories do not exist. Thus, grounded theory can be viewed as a powerful tool to explain a social process which is difficult to reveal with other inquiry methods. In short, grounded theory is worth pursuing in educational research.

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