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Grounded theory in Educational Research: A literature review of features and processes

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Abstract

Grounded theory which is a systematic methodology of discovering theory from data in social science and educational research is considered a general methodology and a way of thinking about conceptualizing data. Using Grounded theory, meaning is negotiated and understood through interactions with others in a social process. This desk top research provides an overview of the features of grounded theory, and in the process, activities involved in using grounded theory are highlighted. Further weaknesses and strengths of grounded theory are discussed. In this article we argue that using an appropriate research method for an inquiry is critical to successful educational research.

Keywords: Grounded Theory Method, Qualitative Research, Data Analysis, Emerging Themes, and Coding

Introduction

Using an appropriate method for analysing research data is critical to successful research and also generating results that can be applied. Grounded Theory techniques are used to analyse and interpret qualitative data. Grounded theory method is a systematic generation of theory from data that contains both inductive and deductive reasoning (Denscombe, 2010) [12]. The goal of grounded theory is to formulate hypothesis based on conceptual ideas generated form a text. The other goal of grounded theory study is to discover the participant's main concern and how they continually try to resolve it (Dunne, 2011) [13]. The process of using grounded theory in analysing qualitative data involves the researcher repeatedly asking questions such as "What is going on?" and what is the main problem of the participants and how are they attempting to solve the problem?" (Glasser 1992) [17].

Thus, the purpose of this paper is to highlight the features of grounded theory, discuss its processes and finally analyse the strength and weakness of grounded theory. We have also discussed the historical background of grounded theory and how it was discovered. Through this discussion we expect to provide in-depth knowledge and understanding of grounded theory that can assist educational researchers in the Southern Africa countries in the selection of appropriate research methods for their inquiries.

Historical background of grounded theory

The Grounded Theory (G.T) method was developed by two sociologists, Barney Glaser and Anselm Strauss. (Clarke 2005) [8]. The term grounded theory was introduced in the discovery of Grounded Theory (1967) [18] by Glasser and Strauss as, "the discovery of theory from data – systematically obtained and analysed in social research" (p.1). Instead of verification of theories they introduced a research method to arrive at a theory suited to its supposed uses contracting with a theory generated by logical deduction from a priority assumption (Glasser and Strauss 1967) [18]. Classical grounded theory as an inductive approach was developed to challenge the methodological restrictiveness of the hypothetic deductive approach by allowing theory to emerge from the organising and reducing of data. (Kelle 2005) [26]. In the words of Groat and Wong, (2002, p181) Grounded theory involves the "use of an intensive, open-ended and interactive process that simultaneously involve data collection, coding, analysis and memo-writing".

Since their original publication in 1967, Kelle (2005) [26] argued that Glasser and Strauss have disagreed on how to apply the grounded theory method and this disagreement resulted in a split between Straussion, and Glasserian paradigms. According to Kelle (2005) [26] the split occurred most obviously after Strauss published Qualitative Analysis for social Scientists in (1987). Thereafter Strauss together with Corbin published their book, Basics of Qualitative Research: Grounded Theory Procedures

and Techniques in 1990. This was then followed by Glaser (1992) [17] who set out chapter by chapter to highlight the differences differences in what he argued was original grounded theory and why. According to Glaser, Kelle (2005) [26] argues, what Strauss and Corbin had written was not grounded theory in its intended form but was rather a form of qualitative data analysis. This divergence in methodology has become a subject of much debate in the academic landscape which Glaser (1998) regards as a rhetorical wrestle.

According to Kelle (2005) [26], the controversy between Glasser and Strauss boils down to the question of whether the researcher uses a well-defined coding paradigm and always looks systematically for causal conditions or whether theoretical codes are employed as they emerge in the same way as substantive codes emerge, but drawing on a huge fund of coding families. Kelle (2005) [26] argues that since the paradigm consists of theoretical terms which carry only limited empirical content the risk is not very high that data are forced by its application.

Glaser according to Charmaz (2006) [5] originated the basic process of grounded theory method described as the constant comparative method where the analyst begins analysis with the first data collected and constantly compares indicators, concepts and categories as theory emerges. The Glaserian method, Charmaz (2006) [5] argues, is not a qualitative research method, but claims the dictum all is data. This means that not only interview or observational data but also surveys or statistical analysis or whatever comes the researcher's way while studying a substantive area can be used in the comparative process. Thus, the method according to Glaser is not limited to the realm of qualitative research, which he calls qualitative Data Analysis (QDA) which is devoted to descriptive accuracy while the Glasserian method emphasizes conceptualization abstract of time, place and people. This therefore means that, a theory discovered with the grounded theory method should be easy to use outside of the substantive area, where it was generated. Charmaz's constructivist grounded theory differ from Glasser's and Strauss's approaches in that the focus is on a mutual construction of knowledge by the researcher and participant and the ability to develop subjective understanding of participants meaning (Charmaz, 2000; Shannack & Aldhmour,2009) [6, 32].

Kelle (2005) [26] argues that, Strauss and Corbin have their own approach which is an approach for looking systematically at qualitative data from transcripts of interviews or protocols of observations aiming at the generation of theory. Grounded theory is seen as a qualitative method, that combines a specific style of research with pragmatic theory of action and some methodological guidelines.

According to Kelle (2005) [26] this approach was written down and systematized in the 1960s by Aselm Strauss a student of Herbert Blumer and Barney Glaser also a student of Daul Lacarsfeld while working together in studying the sociology of illness at the University of California, San Francisco. These developed a specific style of research with pragmatic theory of action and with some methodological guidelines. Kelle (2005) [26] identified three important concepts of grounded theory as, categories, codes and codings. The research principle behind grounded theory method is either inductive or deductive, but combines both in a way of abductive reasoning. This leads to a research practice where data sampling, data analysis and theory development are not seen as distinct and disjunct, but as different steps to be repeated until one can describe and explain the phenomenon that is to be researched (Dunne, 2011) [13].

Shervier (2004) in an interview conducted shortly before Strauss' death in (1994) he named three basic elements every grounded theory approach should include and these are:

- Theoretical sensitive coding which involves generating theoretical strong concepts from the data to explain the phenomenon researched
- Theoretical sampling, which involves deciding whom to interview or what to observe next according to the state of theory generation, this also involves starting data analysis with the first interview and writing down memos and hypothesis early.
- The need to compare between phenomena and contexts to make the theory strong.

Grounded theory methods according to Glaser (2001) [15] emphasises induction of emergence, and the individual researcher's creativity within a clear frame of stages, while Strauss is more interested in validation criteria and a systematic approach. However, a later version of grounded theory called constructivist grounded theory was suggested in pragmatism and relativist epistemology, which assumes that, neither data nor theories are discovered but are constructed by the researcher as a result of his interaction with the field and its participants (Charmaz 2006) [5]. Data are constructed by researcher and participants, and coloured by the researcher's perspectives, values, privileges, positions, interactions and geographical location (Creswell, 2013).

Conceptualizing Grounded Theory.

The Grounded Theory Institute, run by (Glaser,2003) [14] defined GT as follows; Grounded theory is an inductive methodology. Although many call Grounded Theory a qualitative method, it is not. It is a general method. It is the systematic generation of theory from systematic research. It is a set of rigorous research procedures leading to the emergence of conceptual categories. Grounded Theory can be used with either qualitative or quantitative data (Grounded Theory Institute, 2013). According to Groat and Wang, (2002. P. 181) "Grounded theory involves the use of an intensive open ended, and iterative process that simultaneously involves data collection, coding (data analysis), and memo-writing (theory building)" The conceptual orientation of grounded theory resembles that of symbolic interactionism (Priest et. Al., 2002) which is based on the belief that, human beings are acting rather than just responding beings and that human action is purposeful and based on the meanings that the individual has for them. Inherent in the symbolic interactionism is the position that "meaning is negotiated and understood through interactions with others in social process" (Storks and Trinidad, 2007, p. 1374).

After the Glaser and Strauss' introduction of grounded theory, it developed in several directions with variations (Tan, 2010). Glaser emphasized openness and creativity in interpreting of data, whereas Strauss and Corbin emphasised rigorous and prescriptive routines in data analysis (Tan 2010). Charmaz (2006) [5] suggested a social interaction

approach in using grounded theory that emphasized the researcher's interaction and involvement with participants in constructing theory. Grounded theory method (Creswell, 2014) is a systematic methodology in the social sciences involving the discovery of theory through the analysis of data (Tan 2010). The first step in grounded theory is the collection of data through a variety of methods and from the data collected, the key points are marked with a series of codes which are extracted from the text. The codes are grouped into similar concepts in order to make the data more workable (Charmaz 2006) [5]. From the concept's identified categories are formed, which are basic for the creation of theory, or a reverse engineered hypothesis. This however contradicts the traditional model of research, where the researcher chooses a theoretical framework and only then applies this model to the phenomenon to be studied. The figure below shows a comparison of grounded theory and conventional research.

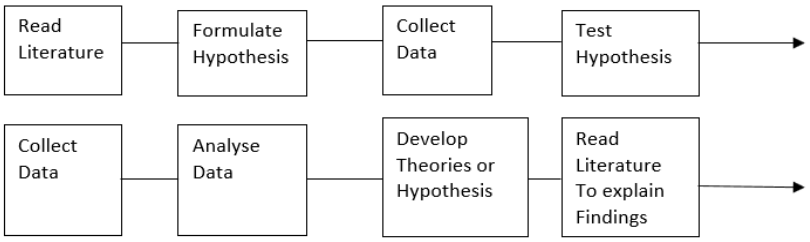

Fig 1: Comparison of Conventional Research Methods to Grounded Theory (Jones 2005) [25]

Grounded theory method is a systematic generation of theory from data that contains both inductive and deductive thinking and the goal is to formulate hypothesis based on conceptual ideas (Glasser 1992) [17]. According to Berge 2009 grounded theory is an entirely inductive process, which does not seek to verify findings but moulds the data to the theory. It is a general method that can use any kind of data even though the most common use is with qualitative data (Glasser, 2001, 2003) [15, 14].

Characteristics of grounded theory

According to the founders of grounded theory Glasser and Strauss, (1967) [18] grounded theory has two unique characteristics which are; constant comparative analysis and theoretical sampling. The constant comparative method (CCM) together with theoretical sampling constitutes the core of qualitative analysis in the grounded theory approach developed by Glaser and Strauss, (1969), Strauss, (1987) Glasser, (1992) [17]. Constant comparative analysis entails an iterative process of concurrent data collection and analysis, which involve "the systemic choice and study of several comparison groups" (Glaser and Strauss, 1967, p. 9) [18]. Using the constant comparative analysis, the researcher does not wait until data analysis stage; instead, data collection and analysis occur simultaneously so that the analysed data guides subsequent data collection. During the data analysis process, an incident should be compared and contrasted with other incidents (Corbin and Strauss, 1990) [10]. Gregory (2010) [20] argues that researchers need to make comparisons between empirical data and concepts, between concept and categories, among data, and among different slices of data in order to reach higher levels of abstraction and advance with the conceptualization. The idea behind comparative analysis is to obtain accuracy of evidence in the conceptual category and also to establish the generality of fact. Glasser and Strauss (1967) [18] proposed that constant comparative analysis consists of "explicit coding and analytic procedures" (p. 102) and suggested four procedures of data analysis which are:

- Comparing incidents applicable to each category
- Integrating categories and their properties
- Delimiting the theory
- Writing the theory (p. 105)

On the other hand, Corbin and Strauss (1990) [10] explained coding as the process of concept labelling and categorising. They considered the concept a s a "basic unit of the analysis" (P. 7) Coding is also considered as categorising segments of data with a short name that simultaneously summarises and accounts for each piece of data "Charmaz, 2006 [5], P. 43 and as "the piratal link between collecting data and developing an emergent theory to explain these data" p.46. Through coding the research or can pick the meaning of data.

Along with the evolution of grounded theory, different versions of coding process were proposed. Glaser 1979, 1992) [17] suggested three stages of coding as substantive coding which consist of open coding and selective coding and theoretical coding. On the other hand, Corbin and Strauss (1990) [10] suggested three stages of coding: open coding similar to Glaser 1978, 1992) [16, 17], axial coding and selective coding. Charmaz (2006) [5] like Corbin and Strauss also proposed three stages; Initial coding, focused coding and theoretical coding. Harry, Strurges and Klingner (2005) [23] suggested six stages of constant comparative analysis levels of grounded theory approach which are; open coding, conceptualising categories developing themes, testing the themes, interrelating the explanations, and delineating the theory. The constant comparative analysis method is an interactive and inductive process of reducing the data through constant re-coding (Glaser and Strauss, 1967) [18].

According to Glasser, (1992. P. 39) [17] open coding is "the initial step of theoretical analysis that pertains to the initial discovery of categories and their properties. It is the interpretive process by which data are broken down analytically" (Corbin and Strauss 1990, P. 12) [10]. Open coding in comparative content analysis includes comparison of incident with other incidents in terms of similarity and differences, giving conceptual labels to incidents, and grouping those concepts together into categories (Corbin and Strauss, 1990) [10].

Axial coding in comparative content analysis is on the other hand a process of exploring the relationships among categories (Strauss 1987). Using axial coding, researchers relate categories with their sub categories; they also test the

relationships against data, and test the hypothesis (Corbin and Strauss, 1990) [10]. There is also selective coding which refers to the process by which researchers select one or more categories intended to generate a story that connects the categories. Glaser's (1978) [16] theoretical coding is a process of theorizing the relationships among substantial codes and at the end of the analysis, a theory or a set of theoretical propositions, is generated (Corbin and Strauss, 1990) [10]. In Charmaz's (2006) [5] coding process, initial coding is similar to open coding, during which the researcher develops categories of information. Focused coding is a process designed to narrow initial codes down to frequent and important codes. According to Charmaz (2006) [5] theoretical coding which is a process used to find relationships between codes and categories, has the potential to result in a theory.

In the work of Glasser and Strauss (1967) [18] constant comparison is important in developing a theory that is grounded to the data. Tesch (1990) [35] adopts this view when she calls comparison the main intellectual activity that underlies all analysis in grounded theory. Tesch, (1990) [35] argue that the method of comparing and contrasting is used for practically all intellectual tasks during analysis, forming categories, assigning the segments to categories, summarising the content of each category, and finding negative evidence. The goal is to discern conceptual similarities, to refine the discriminative power of categories and to discover patterns.

The fig 2 below illustrates the constant comparison

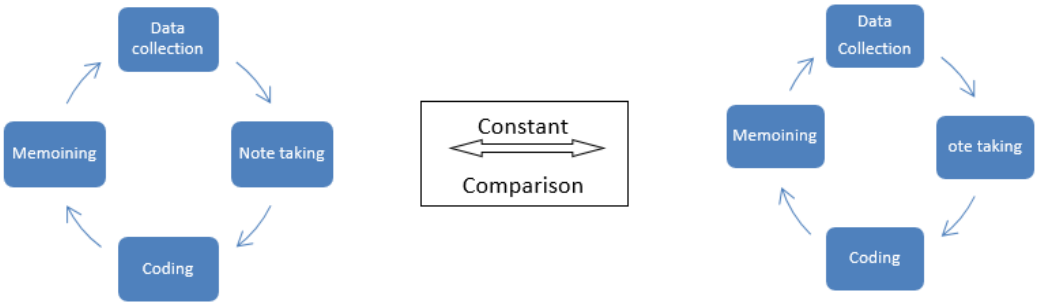

Fig 2

Constant comparison (Glaser, 1967; 1978; 1992; 1998; 2000) [18, 16, 17]

Constant comparison goes hand in hand with theoretical sampling. The principle of theoretical sampling implies that the researcher decides what data will be gathered next and where to find them on the basis of provisionary theoretical ideas. The data in hand are then analysed again and compared with the new data. The cycle of comparison and reflection according to Tesch (1990) [35] of old and new material can be repeated several times. It is only when new cases do not bring any new information to light that category can be described as saturated. Also, each piece of data must be compared with every other piece of relevant data.

Comparisons that are highly regarded increase the internal validity of the findings. One criterion for qualitative research is that the researcher tries to describe and conceptualise the variety that exists within the subject under study. Constant comparative analysis in qualitative research is connected with external validity. When the sampling has been conducted well in a reasonably homogeneous sample, there is a solid basis for generalising the concepts and the relations between them to units that were absent from the sample, but which represent the same phenomenon.

According to Strauss and Corbin (1998) the act of comparison has to do with creative process and with the inter play between data and researcher when gathering and analysing data. There is more to this process than just comparing everything that crosses the researcher's path (Tesch, 1990) [35]. Data collection, coding and analysis occur immediately, concurrently, and throughout.

Theoretical sampling Techniques

Theoretical sampling as methods for analysing qualitative data is seen as a rigorous method to produce a theory (Glasser and Strauss 1967) [18]. The central focus of grounded theory is the development of theory through constant comparative analysis of data gained from theoretical sampling. Glasser (1978) [16] defines theoretical sampling as "the process of data collection for generating theory where the analyst jointly collects codes and analyses his data and describes which data to collect next and where to find them in order to develop his theory as it emerges. This process of data collection is controlled by the emerging theory, whether substantive or formal (P. 36). For Charmaz (2004) in theoretical sampling researchers begin by talking to the most knowledgeable people to get a line on relevancies and leads to tracking down more data as well as where and how to locate oneself for a rich supply of data.

There are many definitions of theoretical sampling as there are many authorities who have defined the concepts (Glasser and Strauss (1967) [18]. From the original form Glaser (1998) defines theoretical sampling as, the prime mover of coding, collecting and analysing data. It is both directed by the emerging theory which directs its further emergence. It is the "where next" in collecting data, the 'for what' according to the codes, and the "why" from the analysis in memos. (P. 157)

Corbin and Strauss (2008) propose the Strauss Arian approach, a method of data collection based on concepts/themes derived from data. The purpose of theoretical sampling is to collect data from places, people and events that will maximise opportunities to develop

concepts in terms of their properties and dimensions, and to uncover variations, and identify relationships between concepts (P. 143).

Carke (2005) observes from the situational analysis, that "Sampling" is driven not necessarily (or not only) by the attempts to be "representative" of some social body or population or its heterogeneities but especially and explicitly by theoretical concerns that have emerged in the provisional analysis to data. Such "theoretical sampling" focuses on finding new data sources (persons or things and not theories) that can best explicitly address specific theoretically interesting facets of the emergent analysis (p. xxxi).

Finally, Charmaz (2006) [5] from the constructive perspective, avers that theoretical sampling means seeking pertinent data to develop your emerging theory. The main purpose of theoretical sampling is to elaborate and refine the categories constituting your theory. Thus, you conduct theoretical sampling by sampling to develop the properties of your category (ies) until new properties emerge. (P. 96).

This theoretical sampling involves the purposeful selection of a sample in the initial stages. According to Glasser (1992) [17] in using the theoretical sampling, groups of participants are chosen as they are needed before the research begin. Knowing where to start the initial sampling is common to most qualitative research studies. In theoretical sampling, the sample is not selected from the population based on certain variations prior to the study, rather the initial sample is determined to examine the phenomena where it is found to exist (Charmaz 2006) [5]. According to Lincoln and Guba (1985) the use of theoretical sampling starts the study with a sample where the phenomenon occurs and then the next stage of data collection is when theoretical sampling begins. Theoretical sampling, as Charmaz (2006) [5] reasons is the process of data collection where the researcher simultaneously collects, codes and analyses the data in order to decide what data to collect next. Deciding where to sample next according to the emerging codes and categories is another theoretical sampling approach. Glaser (1992) [17] asserts that, the general procedure of theoretical sampling is to elicit codes from the raw data at the start of data collecting through constant comparative analysis as the data pour in.

The researcher uses codes to direct further data collection from which the codes are further developed theoretically with properties and theoretically coded connection with other categories until, each category is saturated. Glaser (1992. P. 102) [17] contend that, theoretical sampling on a category cease when it is saturated, elaborated and integrated into the emerging theory. Theoretical sampling is based on the need to collect more data to examine categories and their relationships and to ensure that representativeness in the category exists. Simultaneous data collection and analysis are critical elements in theoretical sampling techniques. A full range and variation in a category are sought to guide the emerging theory. Sampling to test, elaborate, and refine a category is done for verification or test the validity of a category.

Theoretical Saturation

Glasser and Strauss (1969) from the original grounded theory methodological approach, indicate that the criterion for judging when to stop sampling the different groups pertinent to the category is the categories theoretical saturation point. Saturation means that no additional data are found where the sociologist can develop properties of the category. As he or she sees similar instances over and over again, the researcher becomes empirically confident that a category is saturated. (P 61).

Glaser (2001) [15] notes from the classical grounded theory methodological approach that saturation is not seeing the same pattern over and over again. It is the conceptualisation of comparison of these incidents which yield different properties of the pattern, until new properties of the pattern emerge. This yields the conceptual density that when integrated into hypothesis makes up the body of the generated grounded theory with theoretical completeness. (P 191).

Corbin and Strauss (2008) come up with the straussarian grounded theory methodological approach. The joint in analysis where all categories are well developed in terms of properties, dimensions, and variations. Further data collection and analysis add little to the conceptualisation, through variations that can always be discovered (P. 263).

Carke (2005) from the situational analysis of Grounded theory methodological approach, data collection should continue until nothing analytically useful continues to be collected until further analysis is no longer provoked by new materials (P.186).

Charmaz (2006) [5] from the constructivist grounded theory approach, refers to the point at which gathering more data about a theoretical category reveals no new properties nor yields any further theoretical insights about the emerging grounded theory (p. 189).

Similarly, Becker (1993) [1] shows that, theoretical sampling is an ongoing process of data collection that is determined by the emerging theory and therefore cannot be predetermined. The process involves joint collection, coding and analysis which are essential to the inductive – deductive process characteristic grounded theory. The inductive process involves the emerging theory from the data, whereas the deductive process involves the purposeful selection of samples to check out the emerging theory (P.256).

Theoretical sampling decoding according to Glasser (1979), Strauss and Corbin (1990) [10] allow for flexibility during the research process. Glasser (1978) [16] points out that, "when the strategies of theoretical sampling are employed, the researcher can make shifts of plan and emphasis early in the research process. So that the data gathered reflects what is occurring in the field rather than speculation about what cannot or should have been observed (p.38). The process may lead to change of interview questions as the study progress. Several strengths in the use of grounded theory are identified from literature and critical reflection of research documents. The strengths of utilizing grounded theory includes: also, energy categories and relationships which could lead to strengths of grounded theory approach and the researcher to samples in different locations.

The research outcome of grounded theory is a substantive theory that is situated to its supposed use (Glasser and Strauss 1967, P.3) [18]. The grounded theory approach to knowledge creation has gained widespread recognition and has been widely used in qualitative research. One important strength of grounded theory is the systematic procedure of data analysis. Bryant (2002) [4] and Charmaz (2000) [6] assert

that the method supports the ordering of data and this order offers traceability between the data and the categories. The major advantage found in the data analysis procedure is that systematic work is highly supported.

Grounded theory provides a mix of structure and flexibility, with clear and unambiguous guidelines. Glaser (2001) [15], Glaser and Holton (2004) [19] see it as being comprehensive, yet perfectly straight forward. Grounded theory, "results in a smooth uninterrupted emergent analysis and the generation of a substantive formal theory" (Glasser and Holton 2004, P. 3) [19]. Glaser (2001) [15] shows, grounded theory will not provide accurate facts or factual description, rather the results after analysis, are theoretically grounded conceptualisations of a basic social process, which explains the preparedness of behaviour in a substantive area of the research environment. As the analysis is abstract in time, place and people it leads itself to modification in light of new data (Glaser 2001; Glaser and Holton 2004) [15, 19].

Grounded theory approach to knowledge creation has gained widespread recognition since its inception. Data analysis in grounded theory is not a routine like process; rather it is a creative and iterative process including both categorisation and validation (Hussein, Hirst, Salyers, & Osuji, 2014) [24]. Grounded theory gives good support for discovering new ideas and relations among categories and properties. This experience according to Strauss and Corbin (1998) incorporate unique insights during the course of the study and the open coding is a creative phase and that open and axial coding are not discrete phases. Strength of grounded theory is the theoretical sampling process, where new data are gathered that enrich the evolving theory. This process according to Charmaz (2006) [5] aims at discovering variations among concepts and to enrich the categories in terms of their properties and dimensions. By using the theoretical sampling method, the researcher selects new data sources that enrich the evolving theory. Users of grounded theory like Bruce, 2007 [3]; Kelle, 2005 [26]; Mills *et al.* 2006 [28]; Seaman, 2008 [31]; and Urquhart, 2013 [36] have identified the following as key strengths of grounded, theory.

- Data based on the participant's own categories of meaning.
- Useful for studying a limited number of cases in depth.
- Useful for describing complex phenomena.
- Provides individual case information.
- Can conduct cross-case comparisons and analysis.
- Provides understanding and description of people's personal experiences of phenomena (the emic or insider's view point).
- Can describe in rich details phenomena as they are situated and embedded in local contexts.
- The researcher almost always identifies contextual and setting factors as they relate to the phenomenon of interest.
- The researcher can study dynamic processes (i.e., documenting sequential patterns and charge).
- The researcher can use the primarily qualitative method of grounded theory to inductively generate a tentative but explanatory theory about phenomenon.
- Can determine how participants interpret constructs (eg self-esteem, 1Q)
- Data are usually collected in naturalistic settings
- Grounded theory researchers are especially responsive to change that occur during the conduct of a study (especially during extended fieldwork) and may shift the focus of their studies as a result.
- Grounded theory has integrity because it does not seek to impose preconceived ideas on the world.

Suddaby, (2006) [33] also suggested four strengths of utilising grounded theory as:

- When the researcher makes an inquiry where no relevant theory exists, grounded theory gives the researcher a creative approach without confining him or her to an already existing realm of theory.
- It allows the researcher to look at phenomena with new eyes and from new perspectives without restriction within already existing hypothesis.
- It allows the researcher to understand phenomena holistically.
- Compared to other qualitative research method it has a better-defined procedure in the coding process.

Weaknesses of Grounded theory.

Grounded theory has been criticized for its pure emergent procedures. The reluctance in grounded theory to bring in established theories implies a loss of knowledge. Suddaby (2006) [33] highlight that because of the number of variations in the original grounded theory text, novice researchers experience confusion with understanding of different coding processes from different versions. Grounded theory does not provide a predefined research sampling process, to achieve saturation in theoretical sampling; the researcher must exercise stringent theoretical sensitivity in the data analysis process (Cronholm, 2002) [11]. The other weakness of grounded theory, Suddaby (2006) [33] argues is how to cope with a large amount of data. There is no explicit support for helping the user where to start the analysis. Where a researcher has several hundreds of interview transcripts, there is an obvious risk for a forced analysis and frustration over disorder in the data. We suggest that a computer-based support could be established and used when working with large quantities of data from several participants with varied opinions say on the same idea.

Using the grounded theory, Cronholm, (2002) [11] contends that there is a risk that collected data is taken for granted. The information from an interviewee always results of the interviewee's interpretation, yet as researchers we should always be critical towards information provided by participants and try to go beyond what has been said or find alternative information sources that can confirm the data. There might be a tendency in grounded of some form of slavery to data and that has been considered as the truth. Further, Pries-Heje, (1992) [17] claim, in using grounded theory methodologies, there is also risk that the data collected could be too unfocused. Where researchers are too open minded in the data collection phase, there is a probability that researchers end up with a large and diverging amount of data. While research questions should not be too restricted, we argue that there is need for defining relative explicit research question that supports and governs researchers in their data collection.

The fact that grounded theory is prejudiced in data analysis makes it an interpretive approach and being unprejudiced can mean being uninformed and in such cases is a risk of being too naïve and even ignorant when entering the empirical field. One other weakness as confirmed by

Suddaby (2006) [33] is that grounded theory users are encouraged to rid themselves of pre-assumptions so that the true nature of the field of study will come out. Grounded theory researchers do not read pertinent literature until the study is finished. Ignoring existing theory and literature means that there is a risk for inventing the wheels again. Researchers often seek to build new knowledge on existing knowledge. An isolated theory development may mean that there is a risk for non-cumulative theory development. In light of this we urge that it is important to relate the evolving theory to related research findings during the process.

Another weakness of grounded theory is the lack of good illustration techniques. As educational researchers we are used to work with diagrams as tools for describing, explaining and illustrating our findings. Most empirical research use diagrams, tables and figures to illustrate findings which is not applicable to grounded theory. As researchers we suggest that there is need to come up with more developed illustration techniques that could be used to support axial coding and the final theory. Grounded theory is not an effective process in terms of time and energy because of the labour-intensive coding process. Even where the researcher follows a rigorous coding process, he/she may still not find any substantial theory (Kondracki et; 2002) [27]. Usually anticipating the duration of grounded theory methodology study is not feasible. Grounding, (2002) [22] confirm that, because of theoretical sampling and the need for saturation, anticipating the length of the research period is difficult.

Finally, Sandolowski and Barroso, (2003) [30] cited the following as key weaknesses of the grounded theory approach.

- Knowledge generated from grounded theory methods might not be generalisable to other people or other settings. Findings from grounded theory approaches might be unique to the relatively few people included in the study.
- Using grounded theory approaches, it is difficult to make quantitative predictions.
- It is more difficult to test hypotheses and theories with large participant pools.
- It generally takes more time to collect the data when compared to other methods of data collection.
- Data analysis in grounded theory is often time consuming.
- The results of grounded theory approach are more easily influenced by the researcher's personal biases and idiosyncrasies.

Conclusion

In this desktop literature review, we have highlighted the features of grounded theory which includes among other features; a naturalistic approach, identification of themes, rigorous coding, conceptualising data, inductive and deductive methodologies, constant comparative analysis, theoretical sampling and comparative analysis. We also analysed the historical background of grounded theory and, in the process the following authors and their grounded methodological approaches are examined, these are Glasser and Strauss (1967) [18] and their original form, Glasser (1998) and his classical approach, Corbin and Strauss (2008) and their Straussarian approach, Clarke (2005) [8] and his situational analysis and Charmaz (2006) [5] which his constructivist approach. We have also illuminated on the conceptualisation and characteristics of grounded theory. This has been followed by a detailed analysis of constant comparative analysis and theoretical sampling. Finally, we have discussed the key strength and weaknesses of grounded theory. Hopefully this paper will assist novice and inexperienced researchers and students in the use of grounded theory approach in conducting empirical research.

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