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Doing Classic Grounded Theory (CGT) Study in Information Systems

Titus TOSSY
Mzumbe University
tossytm@gmail.com

Abstract- *Classic Grounded Theory methodology (CGTM) is gaining importance as a method for theory building in Information Systems (IS). CGTM is most-often cited by IS researchers, but it has been suggested that many CGTM studies are not following the tenets of the methodology. This paper provides a worked example of a classic grounded theory (CGT) in IS research. The rationale of this paper is based on the fact that most of IS literature reveals conflict in the understanding and use of CGT. As the authors of this paper and as practising classic grounded theorists, I feel that the nature of CGTM is often misunderstood and its label abused in different ways. Therefore, in this paper I provide a model for practice, to connect IS researchers with a classic grounded theory methodology, and to increase the quality of CGT research published in the IS literature. The paper describes sampling, data collection, data analysis, and interpretation. The paper explains how these steps are consistent with CGTM, and show how they related to one another. We provide model to help the e-learning providers researchers interpret the often fuzzy definitions found in classic grounded theory texts and share our experiences and lessons learning during this research. By employing CGTM rigorously, IS researchers can better design and justify their methods, and produce high quality findings that will be more useful to IS researchers, professionals and the community.*

Keywords- *classic grounded theory; e-learning providers; e-learning; ICT for Education; research methodology*

1. INTRODUCTION

I engaged in the qualitative research project to develop a classic grounded theory that explain how e-learning professionals managed the process of e-learning development. Classic grounded theory (CGT) is daunting for the e-learning researchers adventurous enough to undertake qualitative research and sometimes lead to less than satisfactory results(Adolph et al 2008). In Information Systems (IS) literature survey of articles published between 1985 and 2007, Matavire and Brown (2008) discovered 126 articles purporting the use of Grounded theory, only 8% claimed to use classic grounded theory and almost all did not employ all classic grounded theory ternets, only used minimal use of the full classic grounded theory methodology. This could be facilitated by the lack of enough good sources of information to help e-learning researchers learn how to apply the CGT method. Someone can argue that there are many text books from Barney Glaser, the leading author of CGT, but most of these books describe the CGT in near mystical terms and there are only a few practical examples for a novice e-learning CGT research to follow (Hoda et al 2010). Most researcher treat CGT as from Nursing and sociology (Annells, 1996; Schreiber and Stern 2001). These are excellent sources, but have limited relevance for e-learning researchers and do not provide the structure and guidance an information systems researcher may require to effectively use the CGT method.

Regardless of these limitations, my experience demonstrate Classic Grounded Theory is an excellent method for studying information systems and generating theories that are relevant to the practitioner. Classic grounded theory methodology (CGTM) is gaining importance as a method for theory building in Information Systems (IS). However, there is often misunderstanding and its label abused in different ways (Birks et al. 2013; Bryant 2002; Lowe 1996; Matavire & Brown 2013; Suddaby 2006). Many IS authors label their work classic grounded theory (CGT), but do not follow the tenets of the methodology. Birks et al. (2013) identify three types of mislabelling *(1) involves an author to claim to have conducted CGTM to attain legitimacy in cases in which CGTM has not actually been applied; (2) occurs by omission, that is when CGTM is not reported as such; and (3) occurs when researchers claim to have used CGTM when they have only done so partially*. The IS reviewers and editors in various publishing outlets continue to struggle with the nature and boundaries of CGTM while examining papers claiming to be CGTM studies. As a result most of study used CGT are not easily accepted for publication in various journal outlets. This may be in part of two issues. First, may be in part because there are still limited understanding of the methodology and its application, hence the need for a study to clarify these issues (Matavire & Brown 2013). Second, may be in part because there are few practical examples of CGT in use in the IS literature (Tossy 2012).

Regardless Matavire and Brown (2013) claim the existence of several claimed grounded theory approaches including classic, evolved, analytical and mixed method , this paper discovered that all approaches can be categorized into two

two cagetory of grounded theory: Classic (Original) grounded theory methodology and Modified Grounded theory methodologies approaches (see Table 1).

Category of Grounded Theory Methodology	**Approaches(Citation)**
Classic (Original)	*Classic (Original) Grounded Theory (CGT)(* Glaser & Strauss (1967); Glaser(1978) (1992) (1998) (2000) (2003) (2008) (2009))
Modified Approaches	Evolved Grounded theory " Straussian" (Strauss & Corbin, 1990, 1998) Analytical Grounded theory (Various authors) Mixed method Grounded theory (Mingers (2001)

C*lassic* grounded theory is termed to be the original grounded theory (Lowe & Guthrie 2011; Matavire & Brown 2013; Tossy 2012). Therefore, we could not do fair to it to call approach and combine it with other mixed approaches. Let it gain its way as Classic in IS. It is time for IS researchers to avoid using GT label when referring to *classic* grounded theory. It is necessary to label the approach you are using correctly such as *class grounded theory (CGT)*. Most reviewers, editors and researcher kept using GT, while refereeing to one of the mentioned approach. As a result there are misunderstandings on how to correctly do CGT. This has motivated the researchers to write this paper. To address this problem. This paper describe experiences using classic grounded theory for IS research, interpretation of classic grounded theory, and recommendations for IS researchers considering using classic grounded theory for their research. Furthermore this paper clarify the confusion as to how transparency can be created and sustained through out the IS classic grounded theory study process.

The paper has four main sections; a clarification of the main purpose of the CGT research method, an explanation of the CGT process, a detailed outline of how transparency is both created and maintained thoughout the CGT process and finally how CGT must be evaluated.

2. THE HISTORY, DIVERSITY AND BASIC COMPONENTS OF CLASSIC GROUNDED THEORY METHODOLOGY AND METHOD

In 1967, Barney Glaser and Anselm Strauss discovered the Grounded Theory (GT) research method. They documented the discovery in the seminal 1967 book *"The discovery of Grounded theory*" (Glaser & Strauss 1967).In recent decades, the original GT tradition is somewhat fractured, existing four main types. Type one and two are the work of the original authors: Barney Glaser's *Classic Grounded Theory* (Glaser & Strauss 1967; Glaser 1978; Glaser 1992; Glaser 1996; Glaser 1998; Glaser 2001; Glaser 2003; Glaser 2005a; Glaser 2006; Glaser 2008; Glaser 2009; Glaser 2011) and Anselm Strauss and Juliet Corbin's *evolved grounded theory* (Corbin & Strauss 2008).Type three is of Kathy charmaz's *constructivist or analytical grounded theory* (Charmaz 2006). Type four is of Mingers (2001), Eisenhardt (1989), and Baskerville and Pries-Heje (1999)'s *mixed method grounded theory*. The fifth emerging variant is *dimensional analysis* which is being developed from the work of Leornard Schaztman who was colleague of Strauss and Glaser in the 1960s and 1970s. Due to the existence of GT types, Van Niekerk and Roode (2009) argue that a choice of the GT research approach must be approached with care and done within the specific context of the research. The choice of research methodology should have a rationale, and such rationale should be justified in terms of the researcher's preference of methodology over other research methodologies.

Classic Grounded Theory Methodology (CGTM) approach is accepted as being faithful to the original formulation and follows the original tenets of Glaser and Strauss (1967). It has been further elaborated and refined by (Glaser 1978; Glaser 1992; Glaser 1996; Glaser 1998; Glaser 2001; Glaser 2003; Glaser 2005a; Glaser 2006; Glaser 2008; Glaser 2009; Glaser 2011). CGTM is a general inductive research method designed to reveal deep seated latent patterns of human behavior and how the main concerns are being continually being resolved (Glaser 1978; Glaser 1992; Glaser 1998). There have been discussions in the literature about what characteristics a classic grounded theory (CGT) study must have to be legitimately refers to as CGT. The Fundamental components are set out in Table 1. The CGT must have all these. As noted, there are few examples of how to do CGT in the literature. Those that do exist have focused on Strauss and Corbin method. Glaser (2005:41-42) explains the reasons for the persistence of a level of misunderstanding of the CGTM amongst many academics and researchers: they continue to fail to distinguish clearly between "conceptual generalisations" and "descriptive generalisations":

> *"The constant comparative method [at the heart of CGT] was originated in 1967 to generate concepts by constantly comparing indicators of a latent pattern. After several comparisons the result is conceptually naming the pattern and its properties.....The category is abstract of time, place and people. The conceptual categories apply with emergent fit. The Formal CGT research generates categories that relate to each other as generalizations.*
>
> *In contrast descriptive comparisons are as old as research itself. They just compare differences and similarities and a sum of description of people's social actions in a unit of time. The concern is always accuracy, that is, the researcher has worrisome accuracy to constantly*

contend with. Generalisations are difficult to make from one unit to another and even within the unit studied. These are the problems of accuracy of external and internal validity respectively of descriptive generalizations. Conceptual generalizations do not have this validity problem. They just apply within a context applied to with modification. For example, controlling clients by pseudo-friending simply varies for client types and client conditions."(Glaser 2005b).

(Glaser 2009) gives a robust response to the continuing misconceptions regarding CGTM, as articulated by Bryant and Charmaz (2007); Charmaz (2006), in particular the *"worrisome accuracy"* associated with data analysis and the failure of researchers to appreciate the value of the conceptual level of CGTM:

"Data worries dominate the GT jargonizing of QDA issues in the Handbook. And why shouldn't it? Worrisome accuracy is the central issue of QDA. QDA research has to yield accurate description, which puts an emphasis on analyzing the data used in any research every which way to see what, indeed, is being described and is verifiable. And furthermore how fast will the description get stale-dated and if it can be momentarily discursively generalized. This is a perennial, non-solvable problem. It totally neglects the conceptual level of GT, which is free of and abstract of place, time and people and hence free of worrisome accuracy. Comparisons generate a GT's constant concept modifiability."

Transparency of a fully grounded theory will be achieved only when the reader is able to clearly see how the researcher progressed from raw data to the final integrated core variable. In the reminder of this paper, I will show how each of the characteristics of grounded theory methodology worked in this study of e-learning providers. Any researcher who wishes to use the authentic CGTM approach, in an academic environment which does not fully understand this research method, would benefit from reading the contribution by Lowe and Guthrie (2011) before starting their research.

Why Classic Grounded Theory?

Three reasons made to choose CGTM. Firstly, CGTM claims to deliver the main concerns of e-learning providers in East Africa. Secondly, CGTM fits the nature of the phenomenon being researched (e-learning providers), as it follows Lowe's (1996)] explanation of CGT as being designed to "develop and integrate a set of ideas and hypotheses in an integrated theory that accounts for behaviours in any substantive area". Thirdly, CGTM provides a flexible set of inductive strategies for collecting and analysing data. Glaser (1992) and Glaser & Strauss (1967) outlines the key distinguishing characteristics of the CGTM research methodology as *(a)Simultaneous involvement in the data collection and analysis phases of research; (b)Developing analytic codes and categories from data, not from preconceived hypotheses; (c)Constructing middle-range theories to understand and explain behaviours and processes; (d)Memo-writing, that is, analytic notes to explicate and fill out categories; (e)Making comparisons between sets of data, data and concept, and between different concepts; (f)Theoretical sampling, that is sampling for theory construction to check and refine conceptual categories, not for representativeness of a given population; and (g)Delaying the literature review until after the emergence of a core variable*.

3. CLARIFICATION OF THE MAIN PURPOSE OF THE CGT RESEARCH METHOD

This research method is a latent pattern indicator. It achieves this by revealing the respondents deep-seated habitual tendencies. These tendencies will exist whether any research is done or not. They are difficult to reveal because often the respondent's are unaware of them although they constitute an important part of their daily behaviour.

Glaser(1998) states that CGT is multivariate and a process which happens sequentially, subsequently, simultaneously, serendipitously and in a scheduled manner. It is the systematic generation of theory from data acquired by rigorous research method [Glaser (1967)(1978)(1998)(2000) (2007)(2008)(2009)]. It is an integrated set of conceptual hypothesis, probability statements about the relationship between concepts. The hypothesis are generated through constant coding and analyzing of data. CGT is a general research method which is not evidence based. This is because when using evidentiary data it presupposes that deductive hypothesis based research method is being employed. CGT is a general research method which is mainly inductive. Glaser(1978:134) explains why it is inappropriate to treat CGT as though it were evidence based.

"The credibility of the theory should be won by its integration, relevance and workability, not by illustrations as if it were proof. The theory is an integrated set of hypotheses, not findings. Proofs are not the point."

4. AN EXPLANATION OF THE FUNDAMENTAL CLASSIC GROUNDED THEORY PROCESS

CGT is a non-linear process. Although there are very specific stages through which the CGT researcher must go through, the order of doing them will change according to what emerges from the data. This is necessary in order to reveal the deep seated patterns of human behaviour. The of CGT process is explained in figure 1 and summarized in Table 1. Below are explainations of each step.

Table 1: Fundamentals Procedures of a Classic Grounded Theory Study

PROCEDURE	STAGE	DESCRIPTION	SOURCE
Generating theoretical sensitivity	Though out the study	It is essential that the researcher, prior to embarking on any CGTM research, develop theoretical sensitivity. Since there are already in existence literally hundreds of patterns of human behaviour, having a repertoire of these before embarking the research is absolutely essential	(Glaser & Strauss 1967) p4-21
Theoretical Sampling	Sampling, codes, analyse, synthesizes data and Data collection	process of data collection for generating theory whereby the researcher simultaneously generates, codes, analyzes and synthesizes data and uses this as a basis to decide what data to collect next and where to find them The researcher begins by selecting a context for the research.	(Glaser 1998) (Glaser & Strauss 1967) p45-47
Theoretical Memos	Theorising, Codes integration, Analysis and Data collection	the theorising write up of ideas about codes and their relationships as they strike the analyst while coding.	(Glaser & Strauss 1967) p102,p101-115
Substantive Coding	Analysis and Data collection	highlighting those data which the analyst believes may have importance for the research beyond the simple description of the context of the data. These codes are labelled and often 'gerunded'	Glaser, 1978:1998).
Theoretical Coding	Analysis, coding and Data collection	This is a conceptual code. It arises from the synthesis of the substantive codes.	(Glaser & Strauss 1967) p112-115
Constant Comparison	Analysis and Data Collection	the researcher has to painstakingly look across all data in all theoretical memos to look for various types of indicators which might reveal previously hidden connections and patterns. It starts with the recording of raw data in the theoretical memos and proceeds to substantive coding which is then fractured into categories and sub categories. These in turn have different properties	(Glaser & Strauss 1967) p101-115
Sorting	Analysis and data collection	an iterative process occurs at the later stages of the CGTM process. Sorting will ensure that the emerging theoretical codes have earned their place in the emergent process of theory creation	(Glaser & Strauss 1967) p108,112
Theoretical Saturation/ Emergency of Core Variable	Sampling, data collection and analysis	The researchers generally seek to reach saturation in their studies. It is interpreted as the meaning that the researcher hears nothing new from the respondents	(Glaser & Strauss 1967) p111-113
Production of a substantive theory	Analysis and interpretation	The results of a classic grounded theory study are expressed as a substantive theory, that is, as a set of concepts that are related to one another in a cohesive whole. This theory is considered to be fitting, workable modifiable and relevance	(Glaser & Strauss 1967) p21-43 (Glaser 1978; Glaser 1998)

Generating Theoretical Sensitivity

The researcher, prior to embarking on any CGT research, must first develop his theoretical sensitivity. What this entails is explained by Glaser (1978). There are already in existence literally hundreds of patterns of human behaviour. Having a repertiore of these in advance of doing the research is absolutely essential. Here are just a few examples of theoretical codes:

a. Causal consequence models [cause, consequences, contexts, contigenices, covariances and conditions]
b. Process models [stages, phases, polarity, progressions, temporaling and cycling]
c. Degree models [cutting points, probability, polarity, continuum and intensity]
d. Asymptote models [maths model for getting as close as possible]

e. Isomorphism [maths model how one established theory can trigger a new theory]
f. Moment capture [business model which expains how many financial services operate]

Armed with a repertoire of theoretical codes it is easier for the CGT researcher to start making sence of his data.

Theoretical Sampling

This is a form a sampling in which it is both inapproapriate and impossible, prior to doing the research, to state exactly what data will be needed. This is because the sampling process will only cease once the core variable has emerged. The researcher samples his data until he discovers the main concern of the respondents. The researcher then samples within his chosen constituency for this newly emerged concept. Once the researcher reaches the point where no more patterns emerge and the data is said to saturated and the core variable has emerged.

Theortical sampling is a process of data collection for generating theory whereby the researcher symultaneously, generates, codes, analyzes and synthesizes data and decides what data to collect next and where to find them. The researcher begins by sellecting a context for the research. He then has a series of short conversations with a small number of respondents. This has to be so for two reasons. Firstly, a high level of rapport must be established between the researcher and respondent so that trust and respect can develop. This can not happen easily with single encounters. Secondly, the researcher must not make use of any form of recording or note taking during the meeting. This both deepends the researcher/respondent trust and also increases the level of the researcher's concentration. Immediately following all encounters with respondents the research must then document the interaction by writing numerous theoretical memos.

Theoretical Memos

Theoretical memos are described by Glaser (1978:83) as *"the theorising write up of ideas about codes and their relationships as they strike the analyst while coding".*

They are the means to abstraction and ideation and can be used continually throughout the CGT process. Intially they start out as a short sentence but as the analysis moves on, they are up dated and developed can be several pages long.

Substantive Coding

These are the very first attempts to highlight the data which the analyst believes may have importance beyond the simple description of the context of the data. These codes are labeled and often gerunded. In other words the researcher converts the substantive code label into a verb ending in "ing". The purpose of this is to sentitise the researcher to the processes and patterns which will be revealed at a later stage. Gerunding also helps to give the emerging concepts some traction and make the researcher look at his data in a more dynamic way.

Theoretical coding

This is a conceptual code. It arises from the synthesis of the substantive codes. To move from substantive codes to theoretical codes is tricky and often ellusive. It can be achieved by examining the interplay between theoretical memos. The main mechanism for this called the constant comaprison method. Here the researcher has to engage both the intellect and intution to achieve a shift in perpspective from low level context based description to higher level conceptual abstract. This is where the researcher's previously acquired skill development of theoretical sensitivity is vital. Often the lack of theoretical skill development by the researcher makes it very difficult for the CGT researcher to make the transition from substantive to theoretical coding. Once theoreticak codes do start emerging the constant comparison method comes into its own.

The Constant Comparison Method

The researcher has to painstakingly look across all his data in all his theoretical memos to look for various types of indicators which might lead him to reveal previously hiden connections and patterns. There is a heirachy at play here. It starts with raw data in the theoretial memos and so on to substantive coding which is then fractured into categories and sub categories. These in term have different properties. Then both the categories as well as the properties get constantly compared across all the theoretical memos. As this begins to gather pace theoretical codes begin to emerge. What begins as a property of a category of a substantive codes sometimes emerges as a theoretical code in its own right. Only by constantly comparing the data for differences and similarities can theoretical codes emerge. The exception to this are those rare ocassions when the respondent himself is an articulate conceptualizer and is able to step back from his own context and give an authentic explanation of his main concern.

Sorting

This is an iterative process which although it mainly occurs at the later stages of the CGT process, it is also happening perpetually. The reason this is so is because it will ensure that the emerging theoretical codes really have earned their place. If sorting does not happen several times it is unlikely that the research will move much beyond low level narrative description. The sorting processes principle aim is the ensure that the emerging core variable has been fully saturated and has earned its place.

The Emergence of the Core Variable

The core variable is so called because it is around this variable which can account for most of the variation in the data. It is the main concern of the respondents explained at the conceptual level. Frequently there are also sub-core variables which lead into the core variable. Sometimes more than one candidate for the core variable might emerge. Glaser(1978:96-100) details how to clearly discriminate between competing core variables. Multiple candidates for core variables exist because the humand condition is always multivariate. Skills have to be developed which enables the researcher to utlize the Glaser(1978:96-100) criteria for making such discriminations.

5. AN OUTLINE OF HOW TRANSPARENCY IS BOTH CREATED AND MAINTAINED THOUGHOUT THE CGT PROCESS

Generating Theoretical Sensitivity

Anyone reading a thesis which has used CGT must be able to assess the extent to which the researcher prior to starting the project has been exposed to theoretical sensivity. This will become obvious by the skill with which the researcher deals with his data.

Theoretical Sampling

The researcher has to very explicitly explain how and why his theoretical sampling has been constructed. There must be a clearly stated logical argument as to the main reasons for his choice. There should be no note taking or recording during the encounters with respondents.

There are four main reasons why real time note making during the interactions with the respondents is to be avoided in CGT. Firstly, it allows the respondents feel more relaxed and less threatened by the encounter with the researcher. Secondly, because the researcher is not taking any notes at the meeting he will have to make each encounter with the respondents quite brief; this greatly assists the process of theory generation because allows the researcher examine his data reflectively before arranging subsequent meetings. Thirdly, the grounded theory method is a delayed action process both the for respondent and the researcher. Thus having a series of brief interactions with the same respondent permits the development of concepts rather than just descriptions. Finally, the researcher is encouraged to make notes immediately following the encounter with respondents rather than in real time forcing the researcher to increase his level of concentration during the encounter rather than passively going through a check list of pre-determined questions.

Theoretical Memos and coding

Although there is no standard tenplate which all theortical memos must adhere to there are some basic issues which all theoretical memos must address. If these are not present then it would not be transparent to the reader how the researcher progressed from raw data to emerged core variable. All memos should contain the following to meet transparency requirements:

1. Memo Tile
2. Summary of any substantive codes, categories and properties
3. Conceptual indicators [These are important links that form the bridge from substantive description to conceptual exaplanation]
4. Emergent theoretical codes, categories and properties
5. A statement as to the type of data researcher believes he has been given to him by the respondent [Baseline – reliable , properlined - manipulated, vague – economical with the truth or interpeted data – edited]. It actually does not matter at all when doing CGT what type of data the researcher has because everything is data. If people are being untruthful for example that is probably more interesting than if they were being honest. What is of the ut most importance is the researcher does fully understand what type of data he has.
6. A clear separation of empirical data from conjecture data. Both are important in CGT but they are quite different types of data and need to treated accordingly.
7. How has the data been fractured? Which conceptual theoretical perpsectives has the researcher used to better understand the latent patterns embedded in the data?
8. What links have been highlighted to other memos from the researchers bank of memos?
9. What unanswered questions arising from the data will the researcher use in his next meeting with the respondent?
10. How have the theoretical concepts in each memo been constantly compared and then sorted?

The Constant Comparison Method and Sorting

The reader of a CGT thesis should be able to easily understand how and why the both the constant comparison and sorting process were operationalized. There are now commercially available computer software packages which are designed to "speed up" these processes. However Glaser(1996) strongly advises researchers to avoid their use. This not for reactionary reasons its rather that the use of computer packages in Glaser's words is "a creative kop out". He says there are four main reasons why the use of computer software should be avoided when using CGT. Firstly, computer packages are excellent for dealing with very large volumes of data. If the research is using CGT correctly then there is no need for very large volumes of data because latent patterns can be detected from rather small amounts of data. Secondly, Glaser(1996) states that when sorting is done manually it takes time. This time can be used creatively and productively by the researcher to reflect on the data itself. The CGT is delayed action phenomena both for the researcher as well as the respondent. Thirdly, when a CGT researcher is faced with having to manually analyze a mass of his data it can seem overwhelming and can create a degree of anxiety. This anxiety results in fear or physchological regression. However the CGT researcher needs to develop skills to cut through the uncertainty inorder that the authentic latent emerges rather than being foreced. Computer packages to date are unable to do this. Finally none of the currently available computer software packages have been written by people who fully understand the CGT process.

The Emergence of the Core Variable

It must be possible for the researcher to demonstrate to the reader a pathway through his data showing how the raw data emerged to become the core variable. But it should not be treated as evidence. It should instead be presented in a transparant way so that the reader can immediately understand how the core variable emerged. This can be

achieved in a PhD thesis by publishing thin deep slices of data in the appendices of the thesis for all to see.

Figure 1 illustrates the steps taken during the project that will be described below.

6. DESIGNING CLASSIC GROUNDED THEORY STUDY

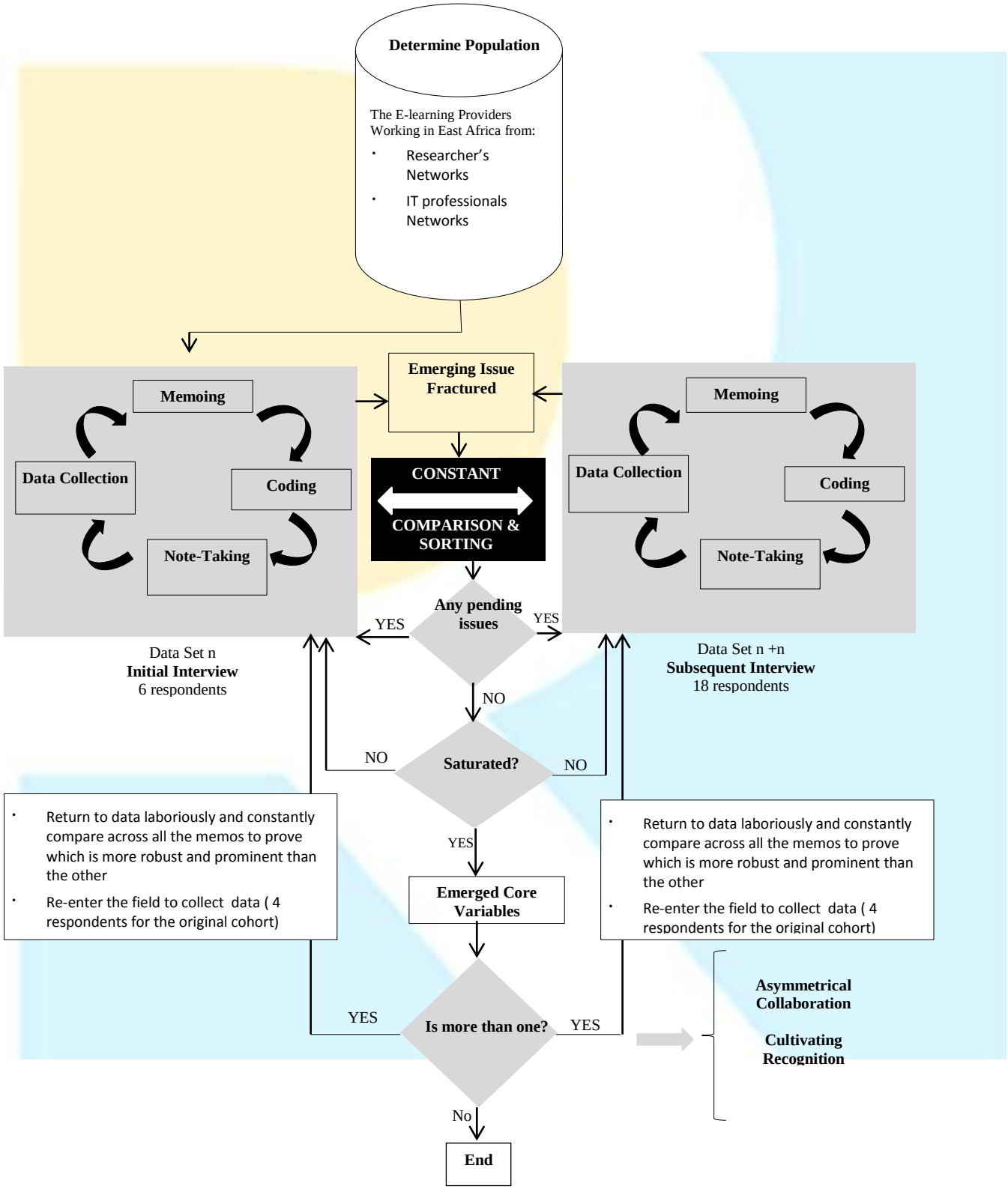

Figure 1: Study design, and how theoretical sampling was followed

Ethics approval

As part of the University of Cape Town research system, before embarking for data collection and interacting with respondents, often concerned about the ethics process for such a flexible, unpredictable study design. I managed this process as follows. Initial ethics approval was obtained from university research ethics committee at the University of Cape Town. In this application, I explained classic grounded theory procedures, in particular the fact that they evolve. I provided with list of possible interview strategies and awareness of the substantive area of study as suggested by Glaser (1978). As in any ethical study, I ensured that participation was voluntary, that participants could withdraw at any time and that confidentiality was protected. All responses Ire anonymised before analysis, and I took particular care not to reveal potentially identifying details of places, practices and e-learning providers.

Determining the Population: An open beginning and research questions

As described by Glaser (1978), classic grounded theory studies are generally focused on social processes or actions: they ask about what the main concerns, what happened are and how people interact. CGT is a symbolic interactionism, a social psychological approach focused on the meaning of human actions (Glaser 1978). CGT studies begin with open question, researchers pre-empty their knowledge about the substantive area, and drivers of the actions of the participants. his study began with determining the population through the researcher's networks and IT providers' networks. Following this, e-learning providers working in east Africa Ire chosen. As Glaser (1978) argues after determining the population, the theoretical sampling process will involve initial data collection and analysis

I sought to learn from e-learning providers how they process their concerns. I wanted to answer a practical social problem: how do e-learning providers process their main concerns in implementation of projects. The researchers asked question which Ire open and related to the substantive area. Following Glaser (1978), this initial research questions Ire:

- What was the process of implementing (or not implementing) the e-learning projects (from the perspective of e-learning providers)
- How did this process vary?

Initial, Purposive interview and Sampling (Data Set n)

According to Glaser (1998), classic grounded theory studies are characterized by theoretical sampling, requiring some data to be collected and analysed at very initial stages. Thus, this interview becomes purposively. This study did an initial data collection using 6 respondents. After fracturing the data collected, detailed memos Ire written. In initial stages of analysis, codes Ire elicited rapidly through a joint process of theoretical sampling and memo-writing. Through this process, codes Ire corrected, trimmed, and continually fitted to the data (Glaser 1978). The memo writing enabled the researcher to conceptualise the boundaries and properties of each category and illuminated gaps in the emerging theory, thus highlighting where to sample next and for what theoretical purpose (Glaser 1978). The emerging issues from this initial purposive interview Ire input to the subsequent interview.

Subsequent Interviews (Data Set n +n)

The emerging issues from level C Ire used in the subsequent meeting and interview. The subsequent meeting and interviews followed the same procedure: Data collection, Note taking, memoing and coding. The direction of who to interview was dictated by data itself. During this process, the data was continuously compared throughout other memos

Table 2: *Sample interview with Respondent X*

Q1. What is the most interesting thing about this job on e-learning/online education? Why?
The most interesting is "new challenges" "unpredictable events/services/problems". Most of the time there are so many challenges in online education or e-learning. Sometimes when you arrive in the morning, you find somebody asking for something which completely new and not documented anywhere. As an expert I need to solve it- this has been so challenging. You don't predict what tomorrow looks like.
Why? – Because e-learning is new technology in Tanzania, and most of this professors and lecturers they don't know exactly what all is about.
Q2. What is the most frustrating thing about this job? How did you solve when it happen? Give an example
Lack of recognition from the top management or lack of administrator understanding about e-learning and what is all about. Due to lack of e-learning knowledge among administrator and top management it is very hard for them to approve budget and any type of purchase. For example today, I Int to see finance manager to approve budget for payment of content developers, but the finance manager asked me what is e-learning, how do I benefit , it is seems not cost effective and sort of questions. It took almost days for him to approve the budget.
Q3. Assume you are in perfect world, what single thing if changed will have impact in this job?
Immediately I will change the hiring procedures for those involved in e-learning. All top managers heading e-learning sections should have knowledge of computers or information technology and e-learning in general. This will help to implement e-learning. Currently hiring procedures are so poor, so long somebody is a professor in any field even if is in agriculture they will just recruiting and be the director of one of the section. As soon as I change the hiring procedures then will help to implement e-learning.
Q4. Imagine that this boss has asked you to change this job description, what would you like to change?

I will add the e-learning awareness and training part. That means to be involved in creating awareness about e-learning among professors and other people. This will actually help to make them aware of what is happening and the importance of e-learning

Q5. For having been in this job for so many years, what is the most achievement you did and you are proud of about e-learning?

I am so proud of making e-learning be in the university map! It is now being implemented, and eventually now I have 3 classes online. And now the university and the country at whole understand what is happening and value e-learning.

Constant comparison

The constant comparison of codes yielded a provisional set of conceptual categories, from which point new categories emerged and new incidents Ire fitted and re-fitted into existing categories. The researcher sampled for both theoretical similarity and difference in order to expound the properties of each category, and attempted to saturate all categories until the emergence of a core category (Glaser and Strauss, 1967).

Emergence of Core Variable

Once latent patterns Ire discovered, the researcher had to return to the data and see how wide spread across all the data the emerging phenomena actually was. At this point there Ire no more categories emerging- it was saturated. As soon the categories Ire saturated, the study realized that two competing core variable candidates did emerge. As a result the study applied the 11 criteria (see Table 2) which distinguished between competing core theories, the core variable emerged.

7. HOW PRINCIPLES OF THEORETICAL SAMPLING USED IN THIS STUDY TO AID THE RESEARCHER'S PROGRESSIONS

Glaser (1978:36) defines the theoretical sampling process in the following terms:

> *"Theoretical sampling is the process of data collection for generating theory where by the analyst jointly collects, codes and analyzes his data and decides what data to collect next and where to find them, in order to develop his theory as it emerges" (p. 36)*

Theoretical sampling is exclusively controlled and guided by the emergent theory as it arises. As an inductive approach, it is not constrained from the outset and is able to follow the data to the existing latent patterns embedded within it. In this study, the four most important principles involved in the use of theoretical sampling are as follows; it is a non-linear process, it is a combination of induction and deduction, the data is always in control of the direction of the research and the essential relationship between the data and the theory is the conceptual code (Glaser 1978).

A non-linear process

Throughout the research process, the researcher was always mindful that whenever insights arose the researcher would immediately have to write a theoretical memo about it. Frequently these insights would arise when the researcher was doing a quite unrelated tasks and at inconvenient times. Theoretical sampling enabled the researcher to examine right across all the data so that the emergent theory could be discovered.

A Combination of Inductive and Deductive Logic

The CGT method is mainly an inductive research method. Inductive logic comes into play because the theoretical sampling process is designed to reveal embedded latent patterns. It was not possible for the researcher to know in advance precisely what to sample and where it might lead. This is why the use of induction was essential. This allowed the researcher to discover the connections between the emergent substantive codes. These latent patterns in which the substantive codes are configured are called theoretical codes. Once the theoretical codes started to emerge the researcher was able to use deduction to figure out where to go next in order to sample for more data to generate the theory.

The Data is Always in Control

As theoretical codes emerged the researcher kept on returning to the theoretical memos and any other data to see how prevalent they Ire. This also meant that once theoretical codes had emerged I went to respondents with a much more focussed approach. I was only sampling for the emergent theoretical codes. Those codes which Ire robust Ire found in all respondent encounters. Sometimes this meant returning to a respondent and asking them to give ever more detailed examples of issues which Ire of most concern to them in their work. Obviously the researcher never coached the respondents for specific responses instead the encounters Ire always open and I would often discuss many other things. Once the respondents became more relaxed they also became more candid about their work situation. At this point the researcher had to concentrate very hard because throughout this process notes Ire taken within 24 hours after the respondent encounters.

The Essential Relationship Between the Data and the Theory is the Conceptual Code

After following the principles of theoretical sampling two distinct theoretical codes Ire persistently present. These were "asymmetrical collaboration" and "cultivating recognition". At this point the researcher was very confused. To clear confusion the researcher was advised to re-read the section entitled core categories in Glaser (1978:94-100). Glaser (1978:94-100) explains in detail how and why this possibility will often occur. He also provides an 11 point explanation (see Table 4) as to how the researcher can discern which of the completing theoretical codes is the core variable. After re-reading this chapter I returned to my data and applied the 11 point guide lines. In addition I also arranged more respondent encounters and only one of the two theoretical codes

finally emerged as the core variable. It did so because it was able to explain most of the variation in the data.

***Table 2**: Selective criteria for Core Category (Source: Glaser (1978, p.93-100))*

- central
- reoccur frequently
- more time to saturate
- connections not be-forced
- clear & grabbing implication for formal theory
- carry through
- completely variable
- is also a dimension of the problem
- prevent to other sthisces of establishing a core
- see the core category in all relations
- it can be a kind of theoretical code

8. THE QUALITY OF THIS CLASSIC GROUNDED THEORY

There are a number of important assurances of quality in keeping with grounded theory procedures and general principles. The following points describe what was crucial for this study to achieve quality.

Before Data Collection

1. The researcher developed theoretical sensitivity skills
2. Exercised to pre-empty any previous skills on the substantive area of study

During Data Collection

1. All interviews Ire of short duration, conducted without tape recordings,
2. I analysed the interview immediately after each round of interview, this allowed the process of theoretical sampling to occur
3. Writing case-based memos right after each interview while being in the field allowed the researcher to capture initial ideas and make comparison between participants accounts as Ill as his reflections
4. Having the opportunity to contact participants after interviews to clarify concepts and to interview some participants more than once contributed to the refinement of theoretical concepts, thus forming part of theoretical sampling
5. The decision to include Skype interviews due to participants' preferences worked very Ill in this study. The Skype interview was having similar length and depth compared to face to face interview, but allowed for greater range of participation

During Data Analysis

1. Detailed analysis records were kept; which made possible to write this paper
2. The use of constant comparative method enabled the analysis to produce not just a description but a mode.

9. ANSWERING THE QUESTIONS

I developed a detailed model of the process of cultivating recognition among the e-learning providers. In the course of repeated encounters with e-learning providers (as outlined above), this study found the concept of "Cultivating Recognition" to emerge as the main concern or core variable amongst these e-learning providers. The core variable within the Classic Grounded Theory research method is the main entity that accounts for most of the variation in the data. . The e-learning providers Ire shown to be continually striving to resolve the issue of how to cultivate recognition from those who sponsor and monitor the projects with which they are tasked. Without proper recognition from their various stakeholders, the e-learning providers Ire unable to successfully deliver e-learning programs to the targeted learners.

The research discovered that there were two key sub-core variables that enabled the "Cultivation of Recognition": "Legitimizing" and "Credentializing". The process of "Legitimizing" involves convincing the e-learning stakeholders that the e-learning programs and projects will be delivered in a timely, valid and sustainable manner. "Credentializing" aims to enhance the stakeholders' belief in the e-learning provider's competence prior to the start of the e-learning project, given that sponsors and stakeholders would be unwilling to commission a project if they believe an e-learning professional's ability to deliver in terms of both financial and operational quality parameters is in question.

In addition to the findings, two main implications emerged from the research. Firstly, for those working within the context of e-learning delivery within East African countries, it is not sufficient for e-learning providers simply to possess or demonstrate a high level of technical competence. They need also to be trained and mentored in how to cultivate the recognition of potential stakeholders before they canvas for e-learning projects. Secondly the possibility exists for career academics in any discipline to enhance their own research funding prospects by mastering the process of Cultivating Recognition.

10. CRITERIA FOR EVALUATING CLASSIC GROUNDED THEORY METHODOLOGY RESEARCH

The grounded theory research method is a general inductive methodology which can be applied to all types of data, both quantitative and qualitative, or the combination thereof as has been outlined by (Glaser 1978; Glaser 1998). GT is not a sub set of Qualitative Data Analysis (QDA). Therefore QDA criteria are inappropriate for the evaluation of research done using the grounded theory research method (Glaser 1978).

(Glaser 1978; Glaser 1992; Glaser 1998; Glaser 2001; Glaser 2003; Glaser 2005a; Glaser 2006; Glaser 2008; Glaser 2011) gives explicit examples of the four main criteria with which to evaluate grounded theory study: *fit,*

workability, relevance and modifiability. These criteria will be explored in the following sections.

Fit

If a concept can be said to be a 'fit' it means that the concept adequately reflects the data that it purports to express. The categories of the emerged core variable must fit the data used to create the theory. Ungrounded assumptions and data which have been forced to fit into preconceived concepts derail fit in CGTM, as well as invalidating the theory (Glaser 1978; Glaser 1998). Although fit would appear to correspond to positivistic validity, it is fit in terms of CGTM action and usage, not as a result of testing (Glaser 1978). Unlike research based on preconceptions, such as research conducted in order to test a hypothesis, in CGTM data which cannot be forced are discarded rather than used to correct the emerging categories. With CGTM only data 'sorted' and used for developing theory can be said to constitute a fit (Glaser 1978; Glaser 1998). The fit could be expressed as a 'refit or an 'emergent fit'. During research categories emerge fast, so the need arises to refit them to the data as the research proceeds and to be sure that they fit all of the data they purport to indicate, thus increasing and ensuring transparency. Categories can emerge between data and pre-existent categories (Glaser 1978).

Workability

How the core variable accounts for the respondents' continual resolution of their main concern is a key issue. The emergent GT must clearly explain what is happening, and the process of its happening, and by so doing should be able to predict future behaviour (Glaser 1978; Glaser 1992; Glaser 1998; Glaser 2001; Glaser 2003; Glaser 2005a; Glaser 2008; Glaser 2011).

Relevance

How the emerged core variable has been received by the members of the constituency from which the data was drawn is also pertinent. Prior to the research it is very likely that respondents would be unable to articulate their main concern. Once they have read the research they should instantly be able to recognize the emerged core variable as being authentic (Glaser 1978; Glaser 1998).

Modifiability

The CGT is considered to be modifiable if it is easy for subsequent CGTM researchers to be aware of what research has been done so far in the area, and to proceed to modify or refine the theory as they collect and code new data (e.g. code new data for emergent fit), without invalidating the theory. Various IS researchers posed certain questions on the issue of transparency when using CGTM (Tossy 2012) these include: *"How can research using CGT have a chain of 'legitimate', 'accurate' evidence? How can one reconcile this with the approach of not recording or taking notes in interviews? How does one demonstrate, or substantiate the chain of evidence in the process of moving from data to concept/theory*?" Such questions assume accuracy in the collection of evidence based data as a requirement for 'accurate', 'reliable', 'legitimised' research.

Since CGTM is an inductive research methodology it is appropriate to use a legitimate set of evaluation criteria as outlined by the CGT's co-originator Glaser (1978). However there must be total transparency when using CGTM so that it can easily and clearly be seen how the emergent core variable arose.

11. CONCLUSION

This paper provides detailed explanations of how a study evolved using classic grounded theory methodology, one of the increasingly popular methodologies in both qualitative and quantitative research. As noted by (Glaser & Strauss 1967) that:

Classic Grounded theory method is a general methodology for building theories that are grounded in data systematically gathered and analysed.

This detailed explanation of this experience in this classic grounded theory study is intended to provide, vicariously, the kind of experience that might help other classic grounded theory researchers in information systems to apply and benefit from classic grounded theory in their studies. I hope that this explanation will assist others to avoid using classic grounded theory as an approving bumper sticker (and instead use it as a research method that can greatly improve the quality and outcome of an information systems research.

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