



Adoption of grounded theory in LIS research

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Abstract

Purpose – The purpose of this paper is to explore the implementations and implications of Grounded Theory as an exploratory and inductive research method in the LIS studies. The paper seeks to illustrate the opportunities and challenges that this methodology has brought to the methodological paradigms of LIS research body.

Design/methodology/approach – The paper is based on two blended constituents including a selective literature review and the author's personal experience in using Grounded Theory. Regarding the paper's scope it possesses a holistic approach to the issue and does not examine the results of individual reviewed studies in detail.

Findings – The results suggest that up to now there have been a considerable number of studies in the LIS area that have successfully employed Grounded Theory. Nevertheless, it does not mean that this methodology is applicable in any research context. Accordingly, there is not a unanimous agreement on the usefulness of this methodology in the research community. Nevertheless, these arguments not only did not diminish the value of Grounded Theory but also helped grounded theorists to enhance this methodology's credibility and trustfulness.

Research limitations/implications – Regarding the wide use of Grounded Theory it was not possible to carry out an exhaustive review of all studies that have employed Grounded Theory. However, the reviewed studies in this paper can be considered as a representative of the targeted research body. Providing the research community with an overall image of the applicability of Grounded Theory in LIS research is the main implication of the paper. Future researchers will benefit from the paper by finding out about the nature of this methodology and the aspects that they need to consider before using it.

Originality/value – Although Grounded Theory is a widely used methodology, there are few publications about its applicability in LIS research. Therefore, this paper can contribute to the area through providing a holistic picture of the role of this methodology in LIS research.

Keywords Libraries, Information science, Research methods

Paper type Conceptual paper

Introduction

A research project without a credible methodology is a wobbly building that will collapse sooner or later. Employing a suitable methodology is a pivotal task for each researcher before carrying out the research. Credibility of each study highly depends on the suitability of the employed methodology with the research context. Regarding the interdisciplinary nature of research in library and information science (LIS) this area employs a variety of research methods from different subjects mainly from social sciences. One of the widely used methods is Grounded Theory (hereafter GT), which initially originated in nursing research (Glaser and Strauss, 1967) and then successfully has been employed in many other subjects including sociology, management, business research, marketing, information systems and LIS.

The current paper aims to review the applicability of GT as a research method in LIS research. In order to familiarize the reader with the real meaning of GT, there is



a fairly detailed description about this methodology in the next sections of the paper. However, the existing explanation is still brief and those readers who wish to learn more about GT should read the main text books on this issue (e.g. Glaser and Strauss, 1967; Glaser, 1978, 1992, 1998; Strauss and Corbin, 1990, 1994, 1998). Regarding the author's personal experience the paramount source to learn the essence of GT is the first published book by the originators of GT which is the *The Discovery of the Grounded Theory: Strategies for Qualitative Research* (Glaser and Strauss, 1967).

What is grounded theory?

GT is a general, inductive and interpretive research method which was originated in 1967 by Barney Glaser and Anselm Strauss (Glaser and Strauss, 1967). However, it does not mean that GT is not connected to the previous paradigms of research methods and has emerged out of the blue. Heath and Cowley (2004, p. 142) cited Hammersley (1989) and reported:

Grounded theory's roots lie in symbolic interactionism, which itself stems from pragmatist ideas of James, Dewey, Cooley and Mead (Hammersley, 1989), most notably the concept of the looking glass self (Cooley, 1922) ... the term "symbolic interactionism" was invented by (Blumer (1937) and his development of the interactionist approach together with naturalistic inquiry is a key influence on grounded theory.

Glaser (1992, p. 2) defines GT as follow:

Grounded theory is based on the systematic generating of theory from data, that itself is systematically obtained from social research.

Strauss and Corbin (1994, p. 273) describe GT as:

Grounded theory is a general methodology for developing theory that is grounded in data systematically gathered and analyzed. Theory evolves during actual research, and it does this through continuous interplay between analysis and data collection.

In fact, researchers who use GT as their research method do not test or verify any preconceived hypothesis. In contrary, they develop new theory based on the systematically collected evidence. Instead of having hypotheses to test, researchers in GT studies have research questions to address. In GT a researcher should keep his/her mind open to any possible evidence that might exist in the dataset.

Again in Glaser's words (1992, p. 8) GT is "inductively generating theory through qualitative analysis of qualitative and/or quantitative data. In fact, Glaser (1992) makes a difference between qualitative analysis and qualitative data. In other words, qualitative analysis can be carried out over quantitative data as well. To define the real meaning of the qualitative analysis Glaser (1992, p. 1) states:

Qualitative analysis means any kind of analysis that produces findings or concepts and hypotheses, as in grounded theory, that are not arrived at by statistical methods.

Glaser and Strauss do not regard the procedures of GT as discipline specific, and they encourage researchers to use the procedures for their own disciplinary purposes. Although GT is a well-established methodology, it is an approach to research rather than a detailed research method. The general goal of GT research is to construct theories in order to understand the phenomenon/phenomena under study. Accordingly,

although GT has been developed and principally used within the field of sociology, it can be, and has been, successfully employed by people in a variety of different disciplines including information science.

GT is an inductive process because the theory emerges through the dataset inductively. However, after emergence of the theory it can be deductively examined with existing theories in the literature to find out how compatible or different the emergent theory is with the literature body. As Case (2002) reports:

Few investigators or studies stick solely to induction or deduction. Rather, they tend to move back and forth between those modes: collecting information that allows them to state a principle or tendency, then testing that generalization through further research, in an endless chain of logic.

Powell (1999, p. 97) explains about the nature of studies which employ GT as the methodology states:

Studies that seek to inductively and systematically develop taxonomies and theories through intensive analysis and coding descriptive data collected about the phenomenon under investigation theories emerge through iterative, constant comparison of concepts and categories against data and said to be grounded in given naturalistic setting being investigated.

As it has been mentioned, Glaser and Strauss introduced GT in 1967 as a joint work. However, after a while their attitudes towards the real meaning of the methodology became different and gradually two versions of GT appeared in the research community. Although these two versions are similar in many ways, there are some differences that make them distinguishable. In the next section there is a brief illustration about the differences between Glaserian and Straussian versions.

Glaserian or Straussian approach

Since Glaser and Strauss originated GT in 1967, this methodology has been constantly developed through enormous number of publications and discussions about its real nature and its similarities and differences with other research methods. Nevertheless, not everyone has perceived GT in the same way. Arguments about the real nature of GT began by its originators. Glaser (1978, 1992) declared that Strauss has not fully understood the meaning of GT and what he has written in his books (Strauss, 1987; Strauss and Corbin, 1990) is not GT anymore. However, Glaser's criticisms about Strauss's new approach in GT do not imply that Glaser nullifies and dismisses Strauss's approach. Glaser in his writings (Glaser, 1978, 1992) always mentions that Strauss's approach is valuable in its place but it is not GT anymore. On the other hand, the Straussian version of GT claims that the Glaserian version puts too much emphasis on the induction nature of GT.

In fact, the later divergence in GT and disagreements between the originators is not about the ontological and epistemological aspects of the GT, but it mainly arises from their differences about the details of methodological procedures, such as how to code the data and how develop the categories. Heath and Cowley (2004) compared Glaser's and Strauss's versions and their comparison has been visualized in Figures 1 and 2.

Heath and Cowley (2004, p. 141) after reviewing two approaches of Glaser and Strauss concluded that:

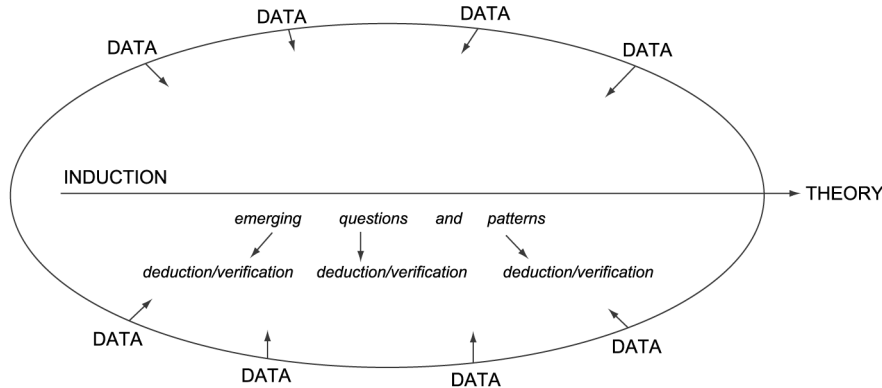


Figure 1. Heath and Cowley's (2004) summary of Glaser's approach of induction, deduction and verification in GT

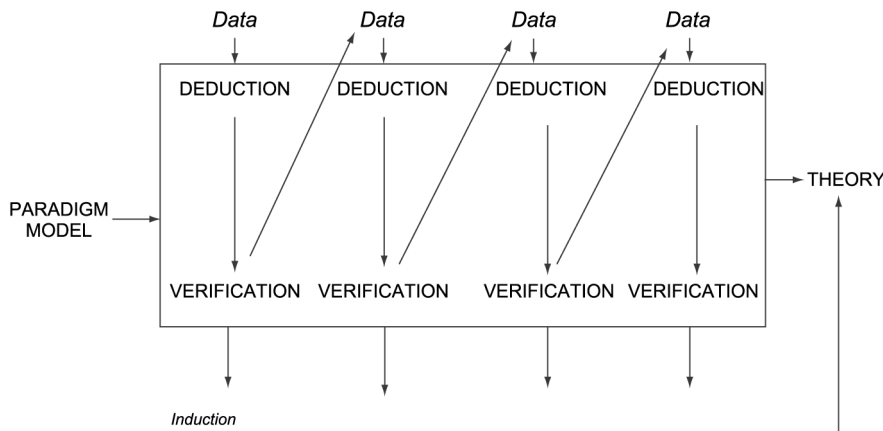


Figure 2. Heath and Cowley's (2004) summary of Strauss's approach of induction, deduction and verification in GT

A conclusion is drawn that, rather than debate relative merits of the two approaches, suggests that novice researchers need to select the method that best suits their cognitive style and develop analytic skills through doing research.

These debates have been constructive to develop this research method over the years. Probably, one of the main reasons of development of the GT comes back to all these arguments. Luckily, these arguments did not stop researchers in many research areas from employing GT as their research method and a considerable number of research projects have been successfully accomplished based on GT method.

The following sections of the paper explain how GT can be employed to develop a theory based on inductive analysis of a qualitative dataset.

Process of GT development

The question that needs to be answered here is how we can employ GT in practice. The most reliable sources to answer this question are the main textbooks about GT which have been published by its creators (e.g. Glaser and Strauss, 1967; Glaser, 1978, 1992, 1998; Strauss and Corbin, 1990, 1994, 1998). However, these books are more theoretical

and sometimes young researchers, who want to quickly learn how to employ GT in practice, require more practical guidelines. Nevertheless, the author of this paper recommends everyone to read the discovery book (Glaser and Strauss, 1967) prior to other sources. Later other publications can be read, which explain the procedure of developing GT. Sometimes those researchers who have used GT also report their understandings and experience about GT very well. For example, Charmaz (2000, p. 515) explains:

How do we do grounded theory? Analysis begins early. We grounded theorists code our emerging data as we collect it. Through coding we start to define and categorise our data. In grounded theory coding, we create codes as we study our data . . . we should interact with our data and pose questions to them while coding them . . . coding starts the chain of theory development.

Similarly, Pace (2004, p. 337) describes four main stages of developing a GT and reports:

As with much qualitative research, data collection and data analysis occurred simultaneously in this study. A theory was derived from the data using a constant comparative method of analysis with four stages: generating categories and their properties; integrating categories and their properties; delimiting the theory; and writing the theory.

The above-mentioned four stages in developing GT have been discussed in different sources with slightly different terminology. However, using different terminology does not mean that there are different methods in GT. In fact, a closer look at the employed terminology showed whether they followed the fundamental nature of GT. They all refer to the same procedure but with different words.

For example, this paper seeks to use the most common terminology to illustrate the procedure of the theory development which consists of four stages of:

- (1) coding the data;
- (2) memo writing;
- (3) sorting; and
- (4) writing the theory.

Comparison of these steps with Pace's (2004) stages shows that these two procedures are entirely equivalent. Indeed:

- generating categories and their properties happens through coding procedure;
- integrating categories and their properties is carried out through memo writing;
- delimiting the theory is a part of sorting, and eventually; and
- writing the theory is the final step in both terminology.

The author uses this terminology because it is widely used in different sources. However, it is useful to compare different terminologies and find out the similarities between them. The most important issue in using GT is to remember the value of the GT's essence in developing a theory, which is essentially grounded in the real data without any effects of bias towards a specific direction or considering any pre-convinced assumption in data analysis. Therefore, the essence of GT is remaining

open and unbiased towards what data suggest to build up the theory based only on the data and nothing else. Accordingly, success in GT depends on how unbiased the researcher is in data collection and analysis.

The following stages are common procedures in developing GT. Data collection and analysis happen at the same time and coding the data is the first task that needs to be done to explore the collected data.

Coding the data

Coding the collected data is an important stage in conceptualizing the dataset. By coding the raw data the researcher allocates specific meanings to the specific part of the data to make the dataset manageable for the further stages of the research. As Beaulieu (2003, p. 242) explains:

The method of analysis and coding of the transcripts is also vital. A constant comparative approach is used consisting of four stages: recording incidents of each category; determining properties of categories; differentiating between core and subsidiary categories; and finally deriving a coherent model based on the overall relationships between the categories.

Coding the data enables the analyst to identify categories and subcategories. In GT text books there are a considerable amount of detailed explanations about coding procedure. However, as Heath and Cowley (2004, p. 146) mentioned, Glaser and Strauss use different terminology for coding the data:

Glaser and Strauss (1967) originally described two levels of coding, first into as many categories as possible and then integration of categories. Neither in the original publication nor in later separate contributions from the two researchers are coding stages meant to be distinct and linear in their use. However, for Strauss and Corbin (1990), two levels become three. Strauss and Corbin (1990) describe the first level procedures as open coding whilst Glaser (1978) refers to substantive coding.

Although there is different terminology about coding procedure in Glaser and Strauss versions, in general there are two main types of codes including substantive and theoretical codes. The differences between these two types are as follow:

Substantive codes. The idea of substantive codes is a result of the first phase of coding which is called substantive coding and is very similar and almost the same with Strauss's suggestion for open coding. Glaser (1992, p. 38) defines this stage as follows:

...the initial stage of constant comparative analysis, before delimiting the coding to a core category and its properties or selective coding. The analyst starts with no preconceived codes; he remains entirely open.

Theoretical codes. The same two stages of substantive and theoretical stages of coding based on Glaser (1978) happen in three stages of open, axial and selective coding in Strauss's version. Therefore, the theoretical coding includes axial and selecting coding. As Babchuk (1997) believes:

At the heart of grounded theory analysis is the coding process which consists of three types: open, axial, and selective. Open coding is the initial process in grounded theory which involves breaking down, analysis, comparison, and categorization of data. In open coding, incidents or events are labelled and grouped together via constant comparison to form categories and properties. Axial coding, on the other hand, represents the delineation of

hypothetical relationships between categories and subcategories, while selective coding can be described as the process by which categories are related to the core category ultimately becoming the basis for the grounded theory.

In further stages of data collection and data interpretations, the researcher might identify new categories or categorize the previous ones into some sub-categories. Then the researcher will identify specific properties of each category.

Regarding the literature review, and according to the author's experience, constant comparison is the pivotal point to achieve this goal and build a vigorous and robust theory. Glaser (1992, p.14) mentions three methods in GT which help grounded theorists to minimise the possibility of bias in data analysis. He recommends:

- constant comparison;
- saturation; and
- core relevance.

Constant Comparison is the heart of the process of emergence of the theory. After a time of constant comparison, gradually the initial form of the theory will emerge from the collected data.

Memo writing

Glaser (1992, p. 108) repeats his earlier definition about memo in Theoretical Sensitivity (Glaser, 1978) and defines memos as:

... the theorizing write-up of ideas as they emerge, while coding for categories, their properties and their theoretical codes ... they are written up as they strike the analyst when constantly comparing, coding and analysing.

Miles and Huberman (1984, p. 69) confirm the authenticity of Glaser's (1978) definition of the memos and illuminate Glaser's definition in further details and stated:

Memos are always conceptual in intent. They do not just report data, but they tie different pieces of data together in a cluster, or they show that a particular piece of data is an instance of a general concept.

Glaser (1992, p. 111) highlights the fact that in writing memos and even in writing the first draft of the theory, researchers should not be worried about the perfect English and not let the concerns about the style of writing block their creativity. Therefore, memos are usually written in a very rough style to record the evolving procedure of theory emergence through the researcher's long time interplay with the data.

The manner of memo writing reassures the emergent nature of GT because a useful memo is based on the promptness and spontaneity of researcher's mind about the collected data. Glaser (1992, p. 108) declares that Strauss's definition is very similar with his definition. In terms of Strauss's definition (Strauss and Corbin, 1998, p. 217-18) a memo is:

... specialised types of written records, those that contain the products of analysis or directions for the analyst, they are meant to be analytical and conceptual rather than descriptive ... Memos and diagrams evolve. Perhaps the most important point to keep in mind is that there are no wrong or poorly written memos. Rather, they grow in complexity, density, clarity, and accuracy as the research progresses.

Strauss and Corbin (1998) believe that memos are an important part of the research process and the conceptual density and integration of the final theory is highly depends on the researcher's attention in making memos and diagrams constantly and meticulously. Working on memos and diagrams is helpful for the analyst to move from working with data to conceptualizing and gaining analytical distance from materials.

In describing the features of memos and diagrams Strauss and Corbin (1998) go on to state that memos and diagrams vary in content, degree of conceptualization, and length depending on research phase, intent, and type of coding.

In order to facilitate and systematize the memo making procedure a couple of practical policies will be taken into consideration. Strauss and Strauss and Corbin (1998, p. 221-3) suggested fourteen recommendations to apply while developing memos. These practical guidelines are useful to facilitate the memo-writing procedure. For example, it is recommended by Strauss and Corbin (1998, p. 221-3) that each memo and diagram should be dated and contain references including the date, short quotes or phrase of raw data, type of memo, and the code number of the interview to identify the document from which ideas were derived. Moreover, they continue and highlight the points that, because of the dynamism of the research process, the analyst should not be afraid to modify the content of memos over the time as the analysis progress.

Sorting

Sorting is an important and sensitive stage of theory development in GT. In fact, sorting is the intermediate step between memo writing and theory writing and connects these two stages. In sorting time the grounded theorist needs to identify the conceptual links between a huge numbers of memos that have been created during the course of research. The robustness of the final theory is highly dependent on the grounded theorist's sensitivity to carry out the sorting process meticulously.

In this stage, the grounded theorist works on his/her memos rather than raw data. As the memos have been developed based on his/her ideas through a long term interaction with the dataset, sorting is a conceptual procedure and can only be carried out by the grounded theorist. In other words, sorting is not a mechanical procedure to put the memos in order. Memos need to be sorted conceptually rather than mechanically. Glaser (1978, p. 116) highlights this fact and mentions:

Since the sorting of ideas not data, it is conceptual sorting, not data sorting . . . unlike data sorting, where "hired hands" are acceptable, conceptual sorting requires that the analyst do his own work. Only he knows his concepts well enough and has the sensitivity to determine how they may relate to other ideas to be integrated into a theory which accounts for the processing of a problem. Grounded theory is a do-it-yourself methodology.

Accordingly, sorting is a conceptual procedure and plays a key role in developing the final outcome of a GT project. As Glaser (1978, p. 116) notes:

Sorting is an essential step in grounded theory process that cannot be skipped. It begins to put the fractured data back together. It consists of setting up the memos in a theoretical outline in preparation for writing stage.

In a nutshell, the sorting phase completes a procedure that has been started at the time of coding and continued through the memo writing period. In the coding phase, the analyst breaks down the raw data into small pieces to identify new concepts. Afterwards, in memo writing, he/she seeks to conceptualize the identified concepts and

discover their properties and dimensions. Eventually in the sorting phase, he/she attempts to put his/her memos together to integrate the relevant concepts and leave out the irrelevant concepts so as to be prepared for the next stage which is “writing the theory”.

Writing the theory

Glaser (1992, p. 111) defines writing stage of GT as “write-up of piles of ideas from theoretical sorting”. In fact, writing the theory is the conclusive stage of GT procedure. In this stage, the researcher should have enough explanations to address the original research questions and should be able to clarify the outcome of the research in a structured format. In fact, writing the theory happens after a long period of conceptualization and interplay with the data.

Writing the theory is the final stage of grounded theory which leads to announcing the results of the study to a wide community of audiences. In this stage, the researcher has to summarise and restructure the findings into a coherent body, which would be easily understandable and informative for the reader. This is a rather delicate task that should be carried out meticulously. This is also a difficult task because the researcher who has carried out the research knows more than anyone else about the phenomenon under study. The researcher knows every single detail of the research and it is not easy to share all of this knowledge with others. At the end of the research, there is a very clear picture of the phenomenon under study in the researcher’s mind, which is only clear for him/her because of a long term interaction with the research context. Successful transfer of this clear picture from the researcher’s mind to the paper is a challenging task. However, it is essential to carry it out to achieve the ultimate goal of the research, which is contribution to knowledge. Glaser (1978, p. 128) declares the importance of writing and publishing the results of studies based on grounded theory and states:

The goal of grounded theory methodology, above all, is to offer the results to the public, usually through one or more publications . . . both feedback on and use of publications will be the best evaluation of the analysts’ grounded theory. It will be his main source of criticism, constructive critique, and frequently of career rewards. In any case he has to write to expand his audience beyond the limited number of close colleagues and students . . . the rigor and value of grounded theory work deserves publication.

This is a brief description only about GT and cannot be considered as a profound explanation about this methodology. However, based on the scope of this paper, this level of explanation should be enough to encourage the reader to follow the discussion through the cited sources. The main purpose of this paper is to discuss the applicability of GT in LIS research which is presented in the next section.

GT in LIS

As it has been declared earlier in the paper, GT is a general research methodology which can be applied in different areas of study including LIS. Glaser (1992, p. 18) states:

Grounded theory can be used successfully by people in many disciplines, it is a general methodology. What counts are that grounded theory methods are not bound by either discipline or data collection.

Powell's (1999) seminal paper about methodologies in LIS research supports the use of GT in LIS research. Powell (1999, p. 103) believes:

The fields of library and information science have no shortage of research questions and phenomena needing thorough exploration and continue to need more well-founded theories, so there is certainly a need for more grounded theory research.

There is more support in the literature about employing GT in LIS. For example, Allan (2003, p. 9) advocates using GT in LIS research and declares:

In conclusion, the Grounded Theory method is recommended as a powerful way to collect and analyse data and draw meaningful conclusions. This recommendation applies to any researcher in the hard sciences as well as the social sciences.

The history of employing GT as a methodology in information science investigations comes back to the early 1980s. Since that time, some seminal works in the information seeking studied have used GT. Reviewing the literature shows that LIS researchers in Sheffield were among the first research groups who employed GT in their studies (Selden, 2005).

Soto (1992, p. 2) reported that Ellis (1987) was the first researcher who adopted GT in information studies. Certainly, Ellis' works in GT is among the first studies to employ this methodology in LIS research. However, it seems the history of GT in LIS goes back to a few years before Ellis' (1987) study. Selden (2005, p. 120) reports:

There have been advocates of GT within LIS from various corners . . . it seems to have had its greatest stronghold in Sheffield . . . the field for GT is prepared by the introduction in 1980 of the journal *Social Science Information Studies*. In its first issue studies using qualitative methods and having a phenomenological foundation were invited (Wilson, 1980, p. 7f).

Selden (2005, p. 120) continues:

One of Wilson's (1981) most influential articles contains signals of the same kind. In the years following there are other signals from Sheffield in favour of action research (Wilson, 1982; Wilson and Streatfield, 1982) paving the way for GT . . . Sten Vedi and David Ellis are prominent GT researchers in the Sheffield tradition. Vedi (1986) studies the penetration of agrarian information and Ellis (1993) constructs models of information-seeking patterns

.Therefore, to be more precise and with regard to the literature review, it can be said that Ellis (1987) was the first researcher in information seeking behaviour studies which employed GT and has been followed up by many further research including Ellis (1993). Similarly, Beaulieu (2003, p. 242) refers to Ellis (1993) and reports:

Ellis turned to Glaser and Strauss's grounded theory approach, a well established inductive method for generating theories and models in the social sciences. The aim was to derive a more accurate model of information-seeking patterns from empirical data. The application of the approach is clearly described by Ellis in a paper on the application of grounded theory.

After successful use of GT in LIS research it has received a great attention from researchers in different places. Selden (2005, p. 120) cites Mellon (1986) and Weingand (1993) as two early examples of GT employment on another side of the Atlantic. Up to now many research projects have employed GT (e.g. Pickard, 1998; Mellon, 1986; Soto, 1992; Ellis, 1993; Correia and Wilson, 1997; Lucas, 1999; Mansourian and Ford, 2006). Beaulieu (2003, p. 242) declares:

The method has proven to be a reliable and fruitful way of handling data analysis and has contributed to establishing the validity of qualitative methods for user-based studies.

In particular, some PhD studies around the world have used GT (e.g. Pace, 2003; Lehmann, 2001). For example, Pace (2003) employed GT to explore a psychological phenomenon called “flow” in web users. According to Pace (2003) flow refers to a state of consciousness that is experienced by people who are deeply involved in an enjoyable activity and consequently do not pay any attention to anything else. Pace’s (2003) study is an example of successful use of GT to explore conceptual phenomena such as flow experiences by web users.

Pace (2003) developed a theory which demonstrates the role of a number of contextual elements in the interactions between end users and the web including curiosity and time urgency. Pace’s theory illustrates the common challenges that web users might encounter while surfing the web and also the coping mechanisms that they usually use to overcome these challenges. Moreover, Pace (2003) identified different aspects of flow experiences of web users including the joy of discovery, reduced awareness of irrelevant elements, and mental alertness.

As Selden reported, GT has received considerable attention from the Department of Information Studies at the University of Sheffield and, since 1986 to date, a notable number of PhD studies adopted GT (e.g. Vedi, 1986; Pedraza, 1986; Brown, 1990; Soto, 1990; Caregnato, 2000; Musoke, 2001; Zafeiriou, 2001; Lucas, 2001; Zakaria, 2002; Kim, 2004).

Vedi (1986) employed GT to explore the information seeking behaviour and information use of a target group, which in this case was a group of farmers. At the same time Pedraza (1986) also used GT to examine how learning can be considered as a process of gaining control of sources of information. A few years later, Brown (1990) adopted GT to explore information, communication and organizational culture in an organizational environment. Brown’s (1990) study was also another example of the applicability of GT in developing new concepts based on inductive analysis of data. Correia and Wilson (2001) revisited Brown’s findings and reported:

Brown (1990) developed a bridging concept, “information conscious culture”, meaning cultures “which demonstrate considerable awareness of the value of information and sophistication in their information behaviour and systems”. The category information consciousness emerged in representation of an attitude that simultaneously expresses the individual’s belief in the value of information, and the individual’s behaviour in accordance to that belief, either engaging in a purposive information seeking activity, or actively encouraging and supporting information-related activity.

There are more examples of successful employment of GT in LIS doctoral studies and particularly in information seeking behaviour studies. Soto (1990) adopted GT to study dentists’ information seeking behaviour. Lucas (2001) used GT to identify the common patterns of use in medical web-based resources and sought to analyse users’ perceptions of these web-based resources.

Using GT is not limited to information seeking research and there are many more fertile grounds in LIS for using GT. For example, research on different aspects of online learning is another area for GT’s adoption. Zafeiriou (2001) explored students’ perceptions of the intervening conditions affecting participation in online group work.

She managed to make some links between the theoretical basis of online learning and practical issues in developing online learning courses.

Although GT has been employed in mainly qualitative and user-oriented studies in the LIS domain, there are other fields in LIS that have used GT. For example, Star (1998, p. 222) compared GT and Faceted classification and found some common ground between these two as follow:

Both grounded theorists and designers of faceted classifications struggle with a common core problem. This is the question of how to represent vernacular words and processes. In both cases, the categories are empirically discovered in an almost self-contradictory fashion. The contradiction comes with the attempt simultaneously to represent, on the one hand, the local, specific, and empirical and on the other, abstractions and generalizations . . . both grounded theory and faceted classification began as reform movements against powerfully entrenched a priori schemes with claims on universality.

In general, there are many possibilities for LIS researchers to use GT in their studies and this paper provides an overview only.

In addition to many opportunities to use GT, there are some issues that need to be taken into consideration when employing this method in any research project. There are some challenges in using GT, especially for researchers who use GT for the first time. The following section explores the problematic aspects of using GT in practice.

Challenges in employing GT

There are some common questions that arise for researchers who want to use GT for the first time, including:

- how to remain open to the data;
- how to avoid the effect of any preconceived ideas;
- how to code the data properly;
- when to start and when to stop analysis; and
- how much the density of a code affect on its importance in the final theory.

Fortunately, there are precise answers in GT textbooks for the above-mentioned questions. However, the existing resources on GT do not explicitly explain all of these questions in simple language. The reason comes back to the fact that GT should not be considered as a step-by-step manual for researchers. In fact, GT is a research approach rather than a research method. Therefore, researchers should interpret the nature of GT in the way that suits their research context and then clarify the reasons for each step in the research.

For example, Orlikowski (1993) adequately justifies why she has used GT in her study. She declares, because of the interpretive rather than positivist orientation of her study, GT suites her research because GT is inductive, contextual, and processual. Orlikowski (1993) compares two paradigms and concludes GT suits those studies which are seeking to develop “a context-based, process-oriented description and explanation of the phenomenon”, rather than “an objective, static description expressed strictly in terms of causality”.

Allan (2003) reflects on his experience of using GT and explains the challenges that he has faced in his study. Indeed, what Allan reports is very common for researchers in their first experience of using GT (including the author of this paper). However, as

Allan (2003) reports these challenges can be solved by learning more about the essence of GT. Allan's first problem relates to the key issue in GT that highlights the point that the researcher should not have any preconceived assumption before collecting the data. It seems rather difficult at the beginning. Nevertheless, personal experience of the author confirms Allan's report that it will be possible to collect data with no preconceived idea. For example, if the data collection tool is interview, what the researcher needs to remember is to design his/her interview questions as openly as possible and let the interviewee to answer the questions freely. In other words, let the data lead the emergence procedure and do not force the theory to be built up artificially.

Allan's second challenge, which is his uncertainty about the real procedure of coding process in GT, is also very common. Glaser and Strauss (1967) do not provide the reader with a detailed guideline on coding procedure. This is not because they ignored its importance. In contrast, it is because they wanted to reassure the reader that GT is not a recipe to follow step by step. GT is an approach to research rather than a practical research manual.

Nevertheless, there are some inevitable challenges in using GT as research method. For example, GT is a time-consuming procedure and can be employed in long-term projects. The theory will emerge through the dataset sooner or later. However, emergence of the theory is not a quick process and requires time and patience. As Glaser (1978, p. 18) points out:

Generating grounded theory takes time. It is above all a delayed action phenomenon. Little increment in coding, analysing and collecting data cook and mature then to blossom later into theoretical memos.

There are other issues in GT that have been criticized by researchers. For example, it is believed that the role of grounded theorist in developing GT is greater than the role of actual dataset. Therefore, the results might be biased regarding the researcher's attitude towards the data. This is the reason for some arising arguments and disagreements about the applicability of GT in LIS research. For instance, Selden (2005, p. 126) notes:

A fundamental weakness in GT is connected to theoretical sensitivity. Conceptualizations do not emerge from data. Their source is within the researcher and is dependent on the extent to which he/she is widely read in scholarly matters. If the opposite were true, inexperienced researchers would be the most effective investigators.

Personal experience of the author shows that, although the researcher's role in developing GT is noticeable, if the researcher follows GT's essence the concepts and categories, which are main building blocks of the final theory, will emerge from the data sooner or later. Therefore, if we ascribe the final outcome of a GT study to the researcher, we actually underestimate the powerful role of the data in GT procedure. Of course, the author appreciates Selden's concern about the possibility of researcher's effect in GT studies. However, if the grounded theorist implements GT procedure properly, the data will lead the direction of theory building.

Discussion and conclusion

Haig (1995) believes that a good GT should possess three main features which are inductively derived from data, subjected to theoretical elaboration, and judged adequate to its domain with respect to a number of evaluative criteria. Achieving this

goal in LIS research is reachable and regarding the existence of fertile grounds for GT studies, developing vigorous theories in LIS is feasible for grounded theorists.

The paper concludes that GT has widely been used in LIS research and it will be used in future as well. In fact, most of the LIS researchers who have employed GT usually recommended it for fellow researchers who work in the similar areas (e.g. Orlikowski, 1993; Goede and De Villiers, 2003; Allan, 2003 and Oliver *et al.*, 2005). There are many rich areas in LIS which prepare the ground for more GT-based research. In particular, exploratory grounds in LIS are very appropriate for GT studies.

The authors' experience in employing GT (Mansourian and Ford, 2006) shows that GT is a powerful research methodology if the context and purpose of the research match with the requirements of GT and the researcher follows the essence of GT thoroughly.

GT is a credible methodology in its place and for the researchers who know how to implement it. GT is applicable in LIS when the researcher does it well and it is weak when the researcher does not do it as thoroughly as he/she should. Probably this is the reason that Selden (2005, p. 126) declares:

... at the beginning of a research project GT seems to be a promising and versatile tool. However, it is difficult to carry through in a satisfactory way.

GT requires a long time engagement with the research context. Constant comparison is a pivotal point for success of GT in a research project. Long time interaction between the researcher and the dataset is an indispensable part of GT. Different concepts and their links only emerge after long time interplay with the data. Therefore, GT is more suitable for long-term projects like PhD research and would not be appropriate for short term studies including master dissertations.

Nevertheless, the author does not intend to warn fellow researchers about the difficulties in implementation of GT in research. On the contrary, GT is an enjoyable procedure with a lot of excitement because of constant emergence of new concepts and directions in the research journey. Heath and Cowley (2004) cited Glaser (1998) and confirm the author's personal experience in using GT:

Researchers should stop talking about grounded theory and get on with doing it, which seems like good advice. The novice researcher should set aside "doing it right" anxiety, adhere to the principle of constant comparison, theoretical sampling and emergence and discover which approach helps them best to achieve the balance between interpretation and data that produces a grounded theory ... it is wise to remember, too, that the aim is not to discover the theory, but a theory that aids understanding and action in the area under investigation.

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