Chapter 9

Constructivist grounded theory
## A 21st century research methodology

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The application of constructivist grounded theory is critically examined and the distinguishing features of a grounded theory approach are evaluated. The value and limitations of constructivist grounded theory are discussed in relation to other approaches to grounded theory. Aspects of different types of coding are examined, and key elements of constructivist grounded theory, including the development of categories, theoretical sampling, and the development of a grounded theory, are evaluated, with examples from the author's research on information literacy and transfer being used to illustrate the use of constructivist grounded theory.

Introduction

This chapter will present a critical review of the development and use of constructivist grounded theory, supported with examples of the use of this method in this author's research. The chapter will outline the developments in grounded theory, and present a case for a constructivist approach. It will then critically examine, with research examples, aspects of the application of constructivist grounded theory, including the formation of areas of exploration, and grounded theory techniques of memo writing, coding, category development, theoretical sampling, theory development, and evaluation. A concept map of the chapter is shown in Figure 9.1 below.

Figure 9.1 Concept map of this chapter
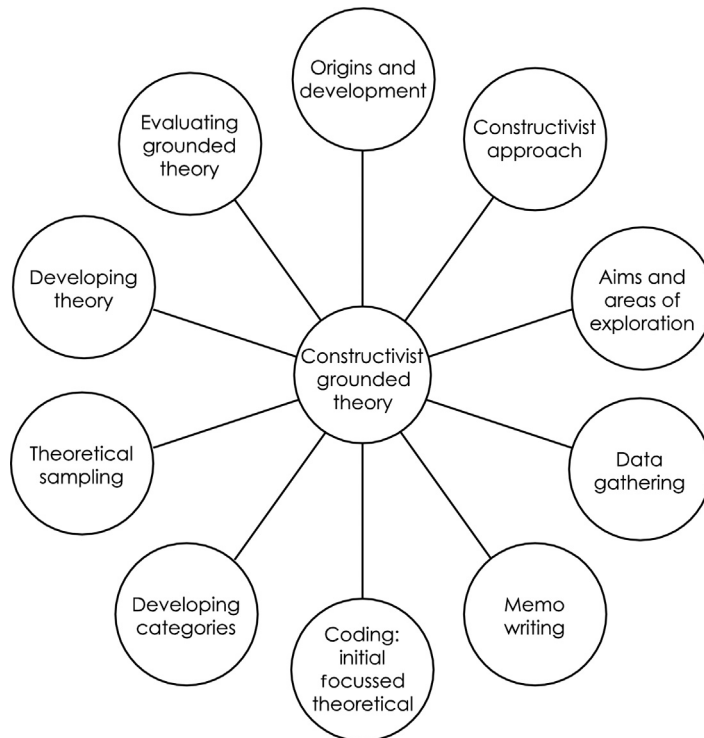
Note: This diagram should be read clockwise from 'Origins and development' to gain an overall view of the chapter.

The development of grounded theory

According to Dey (2004, p. 80), "there is no such thing as 'grounded theory', if we mean by that a single, unified methodology, tightly defined and clearly specified". This quotation demonstrates that there is a wide range of views on grounded theory.

Glaser and Strauss (1967) were the originators of grounded theory, and their book *The Discovery of Grounded Theory*, engendered a move away from the focus on quantitative research, which was prevalent at the time in many disciplines. Glaser and Strauss' (1967) work presented a series of techniques which would allow social science researchers to derive theory from detailed analysis of data gathered in a range of social settings. Pidgeon and Henwood (2004) and Charmaz (2014) argued that Glaser and Strauss' (1967) view was an objectivist one, implying that there were social relationships which objectively existed, and which would emerge from the data using the grounded theory method.

Most research methodologies are subject to reinterpretation over time by researchers from different standpoints, and this is the case with grounded theory. In the 1980s and 1990s, Strauss (1987) and Strauss and Corbin (1998) presented alternative versions of grounded theory, in which new approaches were introduced, differing from the original version. The debate over what should constitute grounded theory has continued into the 21st century, with Glaser opposing changes from the core elements of grounded theory, as suggested by Strauss and Corbin (1998). Glaser (2002) also vehemently rejected the view that grounded theory could be constructivist. According to Charmaz (2014, p. 8) Glaser argued that Strauss and Corbin's techniques "force data and analysis into preconceived categories and, thus, contradict fundamental tenets of grounded theory".

One of the key differences between the approaches of Glaser, Strauss and Corbin, and many 21st century grounded theorists, is that all of the former adopted an objectivist view of the researcher's role. Bryant (2003) argued that, in the objectivist view, researchers are viewed as being totally objective, that is, they believe that they analyse gathered data free from any influences, such as previous research experience or knowledge of the literature. In the view of Bryant (2003, p. 2), no researcher can be completely objective, and the notion of the objective researcher who gathered data "from which theories somehow emerge is now so severely discredited". Since the 1990s, researchers such as Bryant (2002 & 2003), Charmaz (2005 & 2014), and Bryant and Charmaz (2010) have argued for the development of constructivist grounded theory. Charmaz (2014, p. 17) identified key differences in the approach of constructivist grounded theorists, arguing that:

> Glaser and Strauss talk about discovering theory as emerging from data separate from the scientific observer. Unlike their position, I assume that neither data nor theories are discovered. Rather, we are part of the world we study and the data we collect. We *construct* [Charmaz's emphasis] our grounded theories through our past and present involvements and interactions with people, perspectives and research practices.

Pidgeon and Henwood (2004) took a similar view, arguing that, while constructivist grounded theorists stressed the systematic analysis of data in the

same manner as objectivist researchers, they themselves took an interpretivist approach when analyzing data and developing theory. (Interpretivist/ constructivist approaches are discussed in Chapter 1: *Research concepts*.)

Despite the differences in the views of constructivist and objectivist grounded theorists when debating the role of the researcher, or the development of theory, there remains a core set of techniques which are used by all grounded theorists. Birks and Mills (2011, p. 9) stated that these include "initial coding and categorization of data; concurrent data collection and analysis; writing memos; theoretical sampling; constant comparative analysis . . . ; theoretical saturation; and theoretical integration". These techniques will be discussed below.

Aims and areas of exploration

One of the key characteristics of a grounded theory approach is that the researcher does not set out to prove a particular hypothesis. Also, while the researcher will identify key areas to be researched, a grounded theory approach implies that some aspects of the research may change as the research develops. One implication of this potential change is that, instead of constructing concrete objectives for a study, within a set of clear aims, a researcher may want to outline areas of exploration. The advantage of having areas of exploration is that researchers are less restricted than they might be if specific objectives were developed. In this author's own research (Herring, 2010), which aimed to examine and interpret the view of year seven students in relation to information literacy and transfer, the areas of exploration included:

- the views of year seven students on information literacy practices and on transfer,
- the views of teachers and teacher librarians on information literacy practices and on transfer,
- the extent to which year seven students viewed themselves as transferrers of information literacy practices, and
- what teachers and teacher librarians considered to be the key factors in increasing the transfer of information literacy practices amongst year seven students (Herring 2010, p. 15).

In this research, transfer related to the ability and willingness of students to transfer information literacy practices across time and across the curriculum. When these areas of exploration were pursued, the researcher was able to identify previously unidentified aspects of information literacy and transfer in the schools where the research was carried out. While these aspects may have been identified within specific objectives, areas of exploration allow the researcher to have a more open mind about the direction of the research study, and this is a key advantage.

The process of constructivist grounded theory

The process of constructivist grounded theory includes data gathering, memo writing, coding, developing categories, theoretical sampling, developing theory and evaluation, as discussed below.

Data gathering

Adopting a constructivist grounded theory approach to research does not restrict the researcher to particular techniques or tools of data collection. Charmaz (2014, p. 26) argued: "Methods *are* [Charmaz's italics] merely tools. However, some tools are more useful than others." A researcher adopting constructivist grounded theory has a choice of data gathering tools. In most cases, the researcher will be seeking to gather data which is rich in meaning, and this will tend to favour qualitative data collection tools, although a combination of qualitative and quantitative tools may be used. The most important aspect of using grounded theory is the researcher's recognition that, whatever data collection approaches are used, each tool will inform the content of the next one used.

In this author's research (Herring 2010), the data were collected via a student diary, a student questionnaire, interviews with students, and interviews with teacher librarians and teachers in three state high schools in rural Australia. In each school, students from year seven (first year in high school) participated. An important difference between a grounded theory approach and the use of other research methods was that only data from the first tool were completed in advance. In the author's study of information literacy and transfer, the student diary was constructed and then completed by students. The questionnaire contents were constructed *after* an analysis of the data from the student diary. This analysis identified the key topics to be included in the questionnaire. For example, in their diary, most students expressed enthusiasm for formulating their own questions when undertaking a history assignment. The questionnaire sought to discover whether this enthusiasm would continue when students completed a different assignment in the following term, and thus the questionnaire content was heavily influenced by the analysis of the diary. The subsequent interviews with students and staff were based around key issues identified by the researcher in further analysis of both the diary and the questionnaire.

Memo writing

Charmaz (2014, p. 162) referred to memo writing as "conversing with yourself". The use of memo writing by grounded theorists enables the researcher to note down thoughts, ideas and concepts throughout the period of research. Memos are

personal notes and are often written in a shorthand that perhaps only the researcher will be able to fully interpret. This author (Herring, 2010) used memo writing in all stages of the research into information literacy and transfer, that is, during observation, analysis of the diary and the questionnaire, as well as in the periods between interviews with students and staff. Memo writing allows the researcher to instantly note down reactions to what has been read or heard. For example, in analyzing the questionnaires completed by students, this author noted in a memo that: "Some students use puzzling phrases. They say that they did not have time to develop a concept map. But this takes no time at all. What do they really mean by not having enough time? Need to follow this up in the interviews."

Holton (2010, p. 267) argued that "memo writing is a continual process that helps to raise the data to a conceptual level, and develops the properties of each category". When researchers are involved in coding and category formulation, which are discussed below, memos enable them to constantly ask the questions: 'What does this mean?' and 'What does this imply?' For example, when Herring (2010) discovered that, while almost all students believed that transfer of information literacy practices, such as question formulation, was beneficial, most students did not willingly transfer practices, he noted in a memo that:

> This is really odd. These students say [in the questionnaires] that next year's year seven students should transfer practices BUT the same students don't seem willing to transfer. Why this contradiction? What is influencing these students who believe one thing but do something different?

Although memos written by the researcher often display immediate reactions and may not form the basis of meaningful interpretation, they allow the researcher to explore codes and categories from different angles, and can be very valuable in developing theoretical aspects of grounded theory research. Memos written when constructing theory are often directly useful to the researcher.

Coding

The coding of data is central to constructivist grounded theory. Data are gathered using techniques suitable to the study. The data are then analysed by identifying codes which are attached to sections of the data. Charmaz (2014) noted that codes were the researcher's means of *interpreting* what was happening in the data, rather than describing what the main topics of the data might be. Thus coding in constructivist grounded theory differs from other types of analysis. In some data analysis (e.g., of questionnaires), researchers will seek to identify particular keywords which different participants use, and attach significance to these

keywords (a form of content analysis, discussed in Chapter 19: *Qualitative data analysis*). Using grounded theory techniques, the researcher reads the data, asks *what is happening* in the data, and writes down codes, in the form of phrases, which denote the actions, attitudes or opinions of the research participants. It should be noted that Marshall (2002, pp. 56−57) refers to the "messy realities of technique" and argues that, for many researchers, analysing data is often "full of muddle and confusion".

Table 9.1 demonstrates an example of coding from this author's (Herring, 2010) research. The codes demonstrate how the researcher *interprets* what the students were doing when they commented on brainstorming − thus the use of the words *valuing* and *linking*. This is demonstrably a different approach from identifying keywords, for example, the word *help* occurs in two out of the four diary entries, but is not viewed as the most important aspect of the entries.

Table 9.1 Examples of codes developed from student diaries

Student diary entry on mind mapping and question formulation	Code
It will help me judge who is the cruellest tyrant because it will make me think about this in different ways.	Valuing mind mapping as an aid to understanding the topic
Because it's got the things that I want to find out on the internet or in books.	Valuing mind mapping as an aid to information retrieval
Because you need to find information and those questions will help you because you can find answers to these questions.	Valuing question formulation as an aid to information retrieval
You can go back to your questions when it's time to write up the assignment.	Valuing mind mapping as an aid to structuring the assignment

The above is an example of initial coding, which helped the researcher to form the content of the next stage of data collection − student questionnaires. Once further data have been gathered, the researcher can then undertake focussed coding, which Glaser (2004) referred to as selective coding. Focussed coding allows the researcher to identify patterns in the research, and is the first step in the establishment of categories, which in turn will form the grounded theory developed for the research topic. Table 9.2 shows examples of focussed coding from this author's research, leading to possible categories. This focussed coding

took place after initial analysis of the student questionnaires, and further analysis of both the diaries and the questionnaires. Further focussed coding was done following analysis and interpretation of the data from interviews with students and school staff.

Corbin and Strauss (2008, p. 160) argued that coding "means putting aside preconceived notions about what the researcher expects to find in the research, and letting the data, and the interpretation of it, guide analysis". This is an important point. While constructivist researchers cannot be free of the influence of their own knowledge (e.g., from the literature review) and experience, it is vital that they accept the evidence that the data present, and do not try to fit the data to any preconceived notions. Birks and Mills (2011, p. 62) advised researchers to "wave the red flag", if they are tempted to allow their own beliefs to influence the interpretation of the data. Patton (2002) acknowledged that this can be difficult, and stressed the need for researchers to be reflexive.

The final stage is theoretical coding, in which the researcher goes back over both the initial and focussed coding, and identifies theoretical codes, which are based on abstract concepts, rather than empirical statements made by participants. These theoretical codes are likely to become aspects of the categories which the researcher develops.

Table 9.2 Examples of focussed coding

Possible category	Focussed coding	Initial codes
Thinking and making connections	▪ Valuing the links between mind mapping/question formulation with later stages ▪ Learning from experience, for example, of question formulation ▪ Thinking about the task holistically	Valuing question formulation as an aid to exploring the topic Valuing mind maps in relation to selection for inclusion in the assignment Valuing questions as an aid to thinking
Engaging with the topic	▪ Being influenced by motivation ▪ Engaging because of understanding or ability	Being engaged after developing the mind map Being engaged after formulating questions Being engaged through understanding

Table 9.3 Examples of theoretical coding

Theoretical code	Focussed codes from which the theoretical code was developed
Thinking and making connections	Being aware of prior learning; valuing learning about mind maps and question formulation; thinking about the task holistically.
Being engaged	Viewing confidence as being based on motivation or interest; thinking about their own learning; relating subject knowledge to information literacy practices.
Being aware of the information environment	Evaluating different sources of information; valuing other students' views as an information source; valuing the written mind map as an individual information source.
Not valuing/understanding information literacy concepts and practices	Not valuing question formulation as a precursor to information retrieval; not valuing information retrieval or information evaluation; lacking the ability to judge criteria for including information or concepts in the assignment.

Table 9.3 continues examples from research on information literacy and transfer (Herring, 2010). The examples show that, when a researcher develops theoretical codes in constructivist grounded theory, the codes are wide ranging, and are the result of the researcher interpreting a number of focussed codes, and identifying an encompassing title for these codes. The researcher examines, compares and interprets all previous codes, and produces a number of theoretical codes, until no more theoretical codes can be found. This process is referred to as 'theoretical saturation' by some grounded theorists (Glaser, 2004), but Dey (2010) views theoretical saturation as not being possible. One of the criticisms of grounded theory, including constructivist grounded theory, is that there can appear to be no end to the researcher's attempts to identify theoretical codes. In reality, the researcher must judge the quality of the theoretical codes developed and move on to the development of key categories and a grounded theory.

Developing categories

Dey (2010, p. 170) argued that "categories are theoretically informed" and create "a conceptual space for the sensitizing role of categories". This implies that researchers should create categories which can be seen as concepts, for example, 'being engaged', and that researchers have the depth of empirical evidence from a

study to justify the creation of these categories. Categories are at the heart of grounded theory research. Birks and Mills (2011, p. 89) stated: "Overall, grounded theory analysis is categorical in its intent." There has been much debate amongst leading grounded theorists, such as Glaser (2004), Strauss and Corbin (1998), and Charmaz (2014) about how categories can or should be formed. In constructivist grounded theory, categories are developed from initial, focussed and theoretical coding. The responsibility for category development lies with the researcher, whose analysis, detailed comparison and interpretation of the data leads to the creation of categories which are meaningful in the context of the research, and are conceptual in nature. Dey (2010, p. 169) pointed out that in the classical grounded theory view "a well-defined category will have attributes that are jointly sufficient and singly necessary to identify the category". In contrast, constructivist grounded theorists take a different view and argue that categories are "approximate and provisional" (Dey, 2010, p. 169). The category 'being engaged', an example from Herring's (2010) research, has many facets and attributes, such as students reflecting on their own learning, or identifying their individual motivation to seek information and ideas about a particular topic, but is likely to have further attributes which were not identified in the research under consideration. Thus categories exist within the context of each research study, and *may* be relevant in other contexts.

When grounded theorists develop categories from their research data, they may be faced with a large number of *potential* categories. It is the researcher's task to identify which categories are the most important from the range of categories developed. In this author's research (Herring, 2010), two major categories were eventually presented, as these represented the major findings of the research. The two major categories were *valuing information literacy practices* and *culture of transfer*. Given that the original aim of the research was to explore students' and school staff's views on information literacy and transfer, the two major categories may not appear surprising. What is most relevant to the application of the constructivist grounded theory method here is that neither of these concepts had been considered by the researcher prior to the study. That is, the major categories were constructed from, and grounded in, the data gathered from the research participants.

There is no single way to identify one or more major categories in a study, but the researcher must seek to develop these categories by attempting to explain, via these categories, the vital aspects of the study. Thus, in relation to information literacy and transfer, the two most important elements identified by this author were that students valued information literacy practices, and that there had to be a culture of transfer in these students' schools if students were to progress from valuing the transfer of information literacy practices, to putting transfer into practice. Constructivist grounded theorists examine a list of categories and then how these categories might be brought together as a major category. For example,

valuing information literacy was developed from existing categories, which related to students being engaged with their learning, and recognising value in particular information literacy practices, and teachers' assumptions and beliefs about information literacy.

The development of categories is one of the most intense aspects of constructivist grounded theory research, as researchers need to engage in thinking theoretically about the interpretation they place on the gathered data. For this author, mind mapping was a useful tool to tease out which categories could be ranked higher than others, and also whether existing categories could be grouped under a more general and conceptual category. When the major categories have been developed, the researcher then needs to test the categories using theoretical sampling.

Theoretical sampling

In grounded theory research, theoretical sampling can be viewed in two ways. Birks and Mills (2011, p. 69) argued that "through theory directed sampling, you are able to examine concepts from various angles, and question their meaning for your developing theory". These authors believe that theoretical sampling should be employed throughout the research, as a grounded theory researcher will be developing aspects of theory from the early stages of research. Constructivist grounded theorists (Charmaz, 2014; Dey, 2010) tend to have a more restricted view of theoretical sampling, viewing it as a tool employed by the researcher to test the categories created, by going back to the participants in the field of study. This author agrees with the latter view, and employed theoretical sampling by presenting the categories to both students and staff in the three schools involved in the study.

Both views of theoretical sampling can be regarded as valid, and Birks and Mills (2011) would view this author's research as reflecting both views. These authors argue that a researcher starts with purposeful sampling of a particular population (e.g., year seven students) and then identifies areas to pursue in the next step (e.g., students' ability to evaluate information), by examining results from the purposeful sampling. This process continues with each technique used (e.g., interviews), the key aspect being that the research focus is not pre-ordained by the researcher, but is dictated by aspects of the developing theory.

In this author's constructivist grounded theory approach, theoretical sampling was seen as a way of testing the final categories identified by the researcher. This author returned to the three schools and conducted interviews with groups of school staff (teachers and teacher librarians) and year seven students. These interviews highlighted aspects of each of the two major categories — valuing information literacy practices, and culture of transfer — and asked whether the groups agreed with the researcher's interpretation of the data gathered from diaries, questionnaires and interviews. This is a very important step in

constructivist grounded theory, as it determines the validity of the categories from the viewpoint of the participants of the research, that is, not from the researcher's viewpoint or that of the researcher's colleagues and/or supervisors. It is also important because, if the participants do not agree with the categories, the researcher needs to take a step backwards and revise the categories. In fact, the categories were confirmed via the interviews, but this process also enabled further development of the grounded theory. An example of this development was that, in the theoretical sampling interviews with students, the researcher discovered more detail about staff and student beliefs about the need for a culture of transfer in the schools.

Developing theory

The development of a grounded theory is the end point for grounded theory researchers, and can be seen as the summit towards which the researcher climbs during the research study. Bryant and Charmaz (2010, p. 1) argued that grounded theory is "a systematic, inductive and comparative approach for conducting enquiry for the purpose of constructing theory". As noted above, while classical grounded theorists view theory as emerging from collected data, constructivist grounded theorists view their theories as being constructed by the researcher. For inexperienced researchers, developing a theory can be a difficult concept, particularly as there are different views about what exactly constitutes a theory. Theories are also often seen by new researchers as being highly complex, and related to fundamental themes in society, for example, Marx's theory of class struggles. In some cases, novice researchers will only realise what a theory might look like after they have constructed a grounded theory themselves.

Birks and Mills (2011, pp. 112−113) defined theory as "an explanatory theme comprising of a set of concepts related to each other through logical patterns of connectivity". Dey (1999, p. 242) argued that "A theory is not just a haphazard collection of concepts − the ideas in a theory are related in a systematic way. To be well-grounded conceptually, the relationships between concepts used in a theory must be set out systematically." A *grounded* theory, as the name implies, is constructed from the application of grounded theory techniques, in particular theoretical sampling. Once the grounded researcher has finally tested the major categories, there is an opportunity for the researcher to ask what the categories' content might imply for the world of the research participants, and to construct (as recommended by Charmaz, 2006) a series of theoretical statements. A key aspect of constructivist grounded theory development is that a grounded theory is not viewed as generalisable, but relates to the context of the research study. Thus, this author's grounded theory can be seen as applicable to the schools involved in the study, and while it *might* be applicable in other schools in Australia or in other countries, that is for further research to discover.

Theoretical statements, the combination of which constitutes the researcher's grounded theory, are an interpretation by the researcher of what happened in the empirical context of a study, but are expressed in a more theoretical manner. Corbin and Strauss (2008, p. 89) argued that within a grounded theory study, there are 'conditions' which relate to what happens within a context, 'interactions' which relate to why research participants act in certain ways or have certain opinions, and 'consequences' which relate to the results of research participants taking certain actions or having certain views. These elements can be seen in theoretical statements, and are expressed not as examples from the data, but as more abstract statements. For example, in this author's research which focussed on year seven students, information literacy practices and transfer, the following two theoretical statements were constructed.

> Some students take a metacognitive view of their use of information literacy practices, and are capable of making connections across a range of practices. These students are proactive and take a more personal and reflective approach. Other students take a more received practice and passive approach and, while they make short-term connections between practices, are unlikely to be reflective without prompting from the teacher or teacher librarian. A small minority of students do not understand the concepts behind information literacy practices, do not make connections, and make little use of information literacy practices.

> Students' beliefs about transfer are important as these beliefs are one factor in determining whether students will transfer information literacy practices. If students value transfer and are encouraged to value transfer by teachers and teacher librarians, they are more likely to transfer. Most students will need to be prompted to transfer practices and a minority of students will not transfer as they lack understanding of transfer as a concept.

In both of these statements, which are selected from the nine statements which constitute the grounded theory, the researcher refers to conditions (e.g., students taking a proactive or passive approach), interactions (e.g., students take this approach because they take a metacognitive or received practice view), and consequences (e.g., most students will not transfer unless prompted to do so by teachers). It is important that theoretical statements are taken as a whole and not singly, as the statements build up a wide-ranging grounded theory, and the reader can see clear links between the statements. Writing theory is perhaps the most intellectually demanding (but also the most satisfying) part of conducting a constructivist grounded theory study. Researchers should not expect to construct a theory without having a number of drafts, which can be examined by colleagues and/or supervisors.

Evaluation

Charmaz (2014, p. 337) cited four criteria for evaluating grounded theory research:

- *credibility*, which includes the extent to which there is a close correlation between sufficiency of data collected and convincing development of categories and theory
- *originality*, which includes the extent to which the grounded theory might challenge or extend current beliefs about the studied world
- *resonance*, which includes the extent to which the categories presented provide an in-depth view of the studied world
- *usefulness*, which includes the extent to which the research findings and developed theory might contribute to the wider world.

When a researcher has completed the first draft of a constructivist grounded theory report, it is important to consider whether the study stands up to the criteria cited above. By definition, grounded theory research should not be superficial and in many cases will involve the use of more than one approach to data collection. The research should be original, in that the researcher should try to identify an area – a particular area in a particular context – that has not been subject to in-depth research. For example, this author's research topic on information literacy and transfer, has been the subject of many widely held assumptions in schools and, while anecdotal evidence existed, there was no existing study to be found by the researcher. Charmaz's (2014) term 'usefulness' implies that the grounded theory might be discussed in the wider context of the study, and that others (e.g., teachers and teacher librarians in a range of countries) might use the theory as a guide to future practice. However, constructivist grounded theorists do not *assume* that their theory will have practical application. Rather, they hope that their theory will inform future practice.

Conclusion

Grounded theory has developed greatly in the almost 50 years since its original version was published and further developments can be expected in the next 50 years. For the present, this chapter has sought to raise the key issues in taking a constructivist grounded theory approach. For this author, the development of a constructivist grounded theory implies that the researcher will take an iterative approach to data collection and analysis (see Figure 9.2 below for this author's research journey); will constantly question codes and categories which are developed; will engage in theoretical sampling in order to test categories from the research participants' viewpoints; and will construct a theory by means of a series of interlinked theoretical statements. Constructivist grounded theory in practice is intellectually demanding, energy sapping, and intermittently frustrating but, for

the persistent researcher, it can be a great source of insight and satisfaction. Practitioners who are presented with a constructivist grounded theory, can use the theory to question existing practice and develop new practices, which may lead to significant improvements in their working environments.

Figure 9.2 A constructivist grounded theory journey
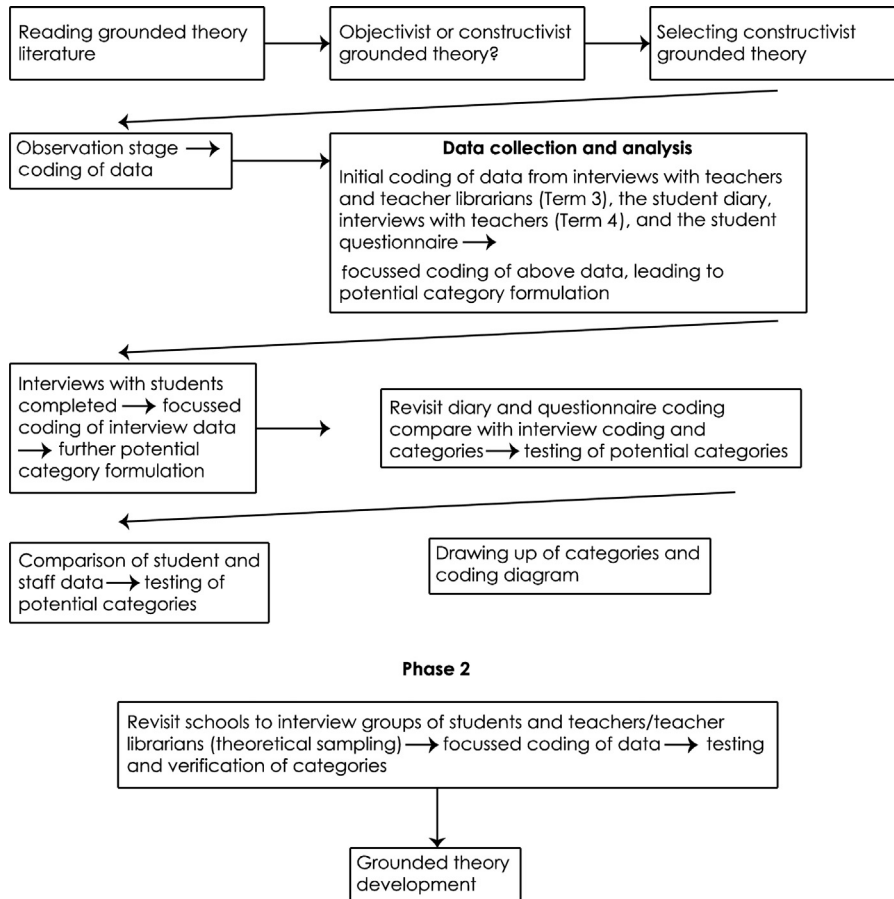
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