Step-by-step guide to critiquing research. Part 2: qualitative research
Frances Ryan, Michael Coughlan, Patricia Cronin

Abstract
As with a quantitative study, critical analysis of a qualitative study involves an in-depth review of how each step of the research was undertaken. Qualitative and quantitative studies are, however, fundamentally different approaches to research and therefore need to be considered differently with regard to critiquing. The different philosophical underpinnings of the various qualitative research methods generate discrete ways of reasoning and distinct terminology; however, there are also many similarities within these methods. Because of this and its subjective nature, qualitative research it is often regarded as more difficult to critique. Nevertheless, an evidenced-based profession such as nursing cannot accept research at face value, and nurses need to be able to determine the strengths and limitations of qualitative as well as quantitative research studies when reviewing the available literature on a topic.

Key words: Critical appraisal ■ Qualitative research

Qualitative and quantitative studies are fundamentally different approaches to research and therefore need to be approached differently with regard to critiquing. Qualitative research is essentially an assortment of various approaches that have commonalities as well as differences (Parahoo, 2006). The different philosophical underpinnings of the various qualitative research methods generate discrete ways of reasoning and distinct terminology; however, there are many similarities within these methods (Burns and Grove, 1999) that can be categorized together.

Qualitative research does not regard truth as objective, but as a subjective reality that is experienced differently by each individual (Vishnevsky and Beanlands, 2004). Nor do proponents of qualitative research believe that a phenomenon can be isolated into multiple variables that can be studied independently. Qualitative research asserts that a phenomenon is more than the sum of its parts, and must therefore be studied in a holistic manner. As a result, the purpose of this paradigm is not to attempt to generalize data to the population but to explore individuals’ experiences (Vishnevsky and Beanlands, 2004) and in some instances the development of new theory.

Elements influencing believability of the study
The elements influencing believability can help the reader to focus on what to expect from a piece of research by asking questions regarding the researcher’s academic and professional qualifications and the skills demonstrated in presenting the study (Ryan-Wenger, 1992). These questions are similar to those asked when critiquing a quantitative study and were discussed in part 1 of this article (Coughlan et al, 2007). Questions relating to these elements are presented in Table 1.

Elements influencing robustness of the study
Statement of the phenomenon of interest
Many of the topics examined in research studies are of an abstract nature in that the particular experience may be interpreted differently by another individual, or by the same individual under different circumstances, e.g. when in pain. In qualitative research these abstract encounters or experiences are known as phenomena (Polit and Beck, 2006). The topic being studied should be clearly identified by the researcher (Connell Meehan, 1999).

Purpose/significance of the study
The researcher should explain next why the study needs to be undertaken and what he/she expects to glean from it. The researcher should also state why the study will be of significance and how it will add to the general body of information on the phenomenon (Connell Meehan, 1999). At this stage the researcher should also justify the use of a qualitative approach and the qualitative methodology to be used (Connell Meehan, 1999).

Literature review
The function of a literature review in research studies is to provide an objective account of what has been written on a given subject. This in turn should reflect prominent emerging themes and inform the conceptual framework of the study. Qualitative research follows the naturalistic paradigm based on the assumption that multiple realities exist and such realities are constructed by the research participants. It aims to explore the phenomenon in question by focusing on the individuals who experience it (Vishnevsky and Beanlands, 2004). Qualitative methods are concerned with experiences, feelings and attitudes, as opposed to precise measurement and statistical analysis. Qualitative methodologies vary

Frances Ryan, Michael Coughlan, Patricia Cronin are Lecturers, School of Nursing and Midwifery, University of Dublin, Trinity College, Dublin

Accepted for publication: March 2007
regarding the inclusion of a literature review before the data collection period. Similarly, there is debate over whether the conceptual framework should precede the period of data collection and data analysis.

When critiquing qualitative studies, the reviewer must decide whether the researcher has rationalized his/her chosen approach. A major premise of grounded theory, for example, is that data are collected in isolation from any predetermined theory or conceptual framework. The literature review is therefore carried out after the data have been collected. The aim of this approach is to explore concepts embedded in the data, thereby allowing theory to be generated from the data rather than vice versa (Robinson, 2002).

Similarly, in phenomenological investigations the literature review may be delayed until the data analysis is complete. This ensures that the findings reflect participants’ experiences
and are truly grounded in the data. This is congruent with the philosophical orientation of phenomenology, which views the subjective experience of participants as central to the methodology (Burns and Grove, 2001). The conceptual frameworks or themes that emerge from the study may then be supported by evidence gleaned from a subsequent examination of the literature.

The ethnographic approach attempts to examine the experiences of the person in the context of his/her natural world and explore the topic of study through the perceptions of the subjects of study. The literature review in ethnographic studies is used to demonstrate knowledge of previous work in the area, as well as frameworks used in the analysis of data.

According to Meadows (2003), existing literature provides both the basis for research and the context for interpreting findings. When critiquing qualitative research studies it is necessary to appraise the literature review in the context of the particular methodology used. If the literature review is appropriate only after the period of data collection, then the researcher needs to identify how this process is to be achieved and in what way the literature is going to be used to determine similarities with or differences from the research findings. Conversely, if the literature review is carried out before data collection and analysis, then it is required to provide a comprehensive and balanced account of previous work, identifying, where appropriate, the relevant themes, conceptual models and theoretical frameworks that provide a sound background to the research.

**Research question**

In qualitative research, a research question that reflects the identified phenomenon of interest is used to direct the course of the research. A research hypothesis is never used in qualitative research, unlike quantitative research (Connell, 1999). Depending on the qualitative approach adopted, e.g. grounded theory, the research question may be modified as new data bring new direction to the phenomenon of interest. Such modifications should be explained and justified by the researcher when they occur.

**Theoretical framework**

Many qualitative studies are described as inductive/atheoretical or theory-generating research. This means that the purpose of the study is to develop theory not test it. Therefore, the researcher does not use an existing or known theory to direct the study. This approach, which is heavily based on the work of Glaser and Strauss (1967), is known as grounded theory. Ethnography and phenomenology are also classed as theory generating. It is important that the researcher indicates this in the study and justifies the adoption of such a stance, e.g. where little is known about the phenomenon under study or where existing theories do not seem to provide the answer (Cronin and Rawlings-Anderson, 2004).

Some qualitative studies use known theories to ‘frame’ their studies (McKenna, 1997). This provides boundaries or parameters for the study and guides all stages, including the literature review, data collection, analysis and presentation of findings (Parahoo, 2006).

An important point for qualitative descriptive/exploratory research is that there are some limits or boundaries to what is being studied. For example, if the researcher wished to study an aspect of patients’ postoperative pain it would be critical to establish how the particular focus was determined. This is sometimes done by exploring the literature and identifying the main themes or concepts, which are then used to focus data collection and/or data analysis and presentation of the findings.

**Methodology: research design**

Design in qualitative research incorporates a range of approaches within what is often referred to as the naturalistic, interpretive or constructivist world view. The important point here is that such a view of the world incorporates a set of beliefs about knowledge and how this knowledge is developed. Qualitative research therefore comprises a set of characteristics that reflect this world view (Table 2). However, it is also important to note that the main qualitative approaches do differ in their disciplinary or philosophical origins, hence the focus and manner in which they undertake sampling, data collection and analysis will vary (Table 3). For the reviewer it is essential that the researcher outlines and justifies the chosen approach in order to establish coherence and congruence.

---

### Table 2. Characteristics of qualitative research

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Truth</strong></td>
<td>There are multiple truths – generalization is not sought</td>
</tr>
<tr>
<td><strong>Purpose</strong></td>
<td>Concerned with discovery and description although verification is also possible</td>
</tr>
<tr>
<td><strong>Context</strong></td>
<td>There is attention to the social context in which events occur and have meaning</td>
</tr>
<tr>
<td><strong>Emphasis</strong></td>
<td>There is an emphasis on understanding the social world from the point of view of the participants in the study – an emic perspective</td>
</tr>
<tr>
<td><strong>Approach</strong></td>
<td>The approach is primarily inductive</td>
</tr>
<tr>
<td><strong>Relationship between researcher and participant</strong></td>
<td>There is integration between researcher and participant – interaction is valued</td>
</tr>
<tr>
<td><strong>Sample</strong></td>
<td>Usually small in number but consists of those who are able and willing to describe the experience</td>
</tr>
<tr>
<td><strong>Data</strong></td>
<td>Elicits ‘soft data’, i.e. words</td>
</tr>
<tr>
<td><strong>Data collection</strong></td>
<td>The major data collection techniques include interviewing, participant observation, examination of personal documents and other printed materials</td>
</tr>
<tr>
<td><strong>Analysis</strong></td>
<td>Analysis is presented for the most part in a narrative rather than numerical form, but the inclusion of some quantitative measures and numerical expressions is not precluded in qualitative research</td>
</tr>
<tr>
<td><strong>Rigour</strong></td>
<td>Credibility, transferability (fittingness), dependability, confirmability, goodness</td>
</tr>
</tbody>
</table>
Participants should always have the right to give informed consent regarding their participation in any research study. In order to do this, participants should be fully aware of the purpose of the study, what sort of information is being sought, how it will be used and the implications for them as contributors to the research. This moral principle is known as autonomy (Beauchamp and Childress, 2001); it also implies that participants have the right to withdraw from the research at any time.

In qualitative interviews the role of the interviewer is to encourage participants to ‘open up’ and discuss their experiences of the phenomenon. In doing this, participants can inadvertently discuss personal information that they had not planned to reveal, or that may rekindle tragic or uncomfortable experiences related to the topic being studied. Process consent involves continually negotiating with participants to ascertain whether they are comfortable continuing with the interview or would prefer to discontinue participation (Polit and Beck, 2006) and can be a useful tool in these situations. However, discontinuing participation alone can be insufficient to meet the principle of non-maleficence, so psychological support should be in place to manage any emotional distress that may result from the interview (Smith, 1992).

In qualitative research, if vulnerable groups are being asked to contribute to the study, it is important to ensure that their rights are protected. Ethical committee or institutional review board approval has to be sought before the research can be undertaken. The role of ethical committees and institutional review boards is to determine the feasibility, acceptability and ethical validity of the research before it is carried out.
that ethical principles are being adhered to and that participants are protected from potential sources of harm (Burns and Grove, 1999). It is important to note that within qualitative research, ethical issues often arise at different stages in the study and may be discussed when they occur rather than under a specific heading.

Data collection
In a qualitative study any number of strategies can be adopted when collecting data, including non-numerical questionnaires with open-ended questions, interviews (semi-structured and unstructured), participant observation, written texts such as diaries or emails, and historical or contemporary documents. The researcher should outline the rationale for the chosen method of data collection and offer sufficient information of the process. If using a particular approach, such as grounded theory, it should be evident from the discussion that the researcher has adhered to the processes inherent in the methodology (Table 3).

Interviews are by far the most common method of data collection and are mainly either semi-structured or unstructured (Holloway and Wheeler, 2002). If a semi-structured interview format is selected it should be evident how the themes or questions were derived. In unstructured interviews the initial opening question should be presented and clearly linked to the purpose of the study. Interviews are more frequently conducted face to face, but online or telephone interviews are also used. They can be undertaken with individuals or groups, such as focus groups, and can be one-off or multiple. The rationale for each of these decisions should be clearly presented.

Although traditionally associated with grounded theory, ‘data saturation’ is often referred to by some qualitative researchers as a point where they claim no new information will arise from further sampling. Thorne and Darbyshire (2005) suggest that some researchers use the concept of data saturation as a convenient stopping point, and it may be pertinent to assess whether the study being evaluated, particularly if it is a small-scale descriptive study, could have achieved this.

Data analysis
In qualitative research the process by which data analysis is undertaken is fundamental to determining the credibility of the findings. Essentially it involves the transformation of raw data into a final description, narrative, or themes and categories. There is considerable variation in how this is undertaken, depending on the research question and the approach taken (Vishnevsky and Beanlands, 2004).

Some researchers use generic data analysis tools whereas others use less structured and more creative approaches. What is important is that the process is described in sufficient detail to enable the reader to judge whether the final outcome is rooted in the data generated (Holloway and Wheeler, 2002). The researcher should demonstrate understanding of concurrent data collection and analysis, the processes of organizing and retrieving data, as well as the steps in coding and thematic analysis. In addition, verification strategies, if used, should be presented. Examples include use of an expert panel or member checking (verifying with participants).

Several computer-assisted packages are available to assist the qualitative researcher during analysis, e.g. NUD*IST (Non-numerical Unstructured Data Indexing, Searching and Theorising), Ethnograph and NVivo (Robson, 2002). There are inherent advantages to these packages in terms of handling large amounts of data and assisting with coding and organizing the material. However, the rationale for how and why a particular tool was chosen should be evident.

Although data analysis is central to qualitative research, it is often poorly delineated in research publications. Very few offer sufficient detail to determine the emergence of the findings from the raw data, with the result that readers are asked to ‘accept’ what they see. According to Thorne and Darbyshire (2005), the obligation to show the data that led to the findings is a reasonable one.

Rigour (trustworthiness)
Unlike the quantitative (positivist) paradigm that seeks to examine objective, measurable data and causal relationships between variables, qualitative research or naturalistic inquiry concerns itself with processes and meanings that cannot always be experimentally examined. Socially constructed realities and relationships between the researcher and what is being studied are essential components of qualitative inquiry (Denzin and Lincoln, 2003). Proponents of qualitative approaches emphasize the value-laden nature of naturalistic inquiry; a commonly heard criticism is that qualitative research is subjective, anecdotal and subject to researcher bias (Koch and Harrington, 1998).

Pilkington (2002) suggests that because qualitative methods are aimed at primarily understanding human experiences and ultimately theory development, alternative criteria are required for ensuring the scientific merit of qualitative research studies. As quantitative studies are concerned with the generalizability and reproducibility of findings, the concepts of reliability and validity are seen as appropriate criteria to use when evaluating the adequacy or robustness of quantitative research. There is much discussion about the applicability of validity and reliability to qualitative research (Koch and Harrington, 1998; Tobin and Begley, 2004; Hove and Severinson, 2007). The challenge to alternative paradigms or qualitative approaches is to produce plausible, robust research and to demonstrate rigour.

Rigour is the means of demonstrating the plausibility, credibility and integrity of the qualitative research process. The rigour, or trustworthiness, of a study may be established if the reader is able to audit the actions and developments of the researcher (Koch, 2006). According to Burns and Grove (2001), the critique of qualitative research requires an appraisal of the rigour in documentation, procedural rigour, and ethical rigour:

- Rigour in documentation ensures there is a correlation between the steps of the research process and the study in question, commencing with the phenomenon of interest and following through to the recommendations and implications for practice.
Procedural rigour refers to appropriate and precise data collection techniques and incorporates a reflective/critical component in order to reduce bias and misinterpretations.

Ethical rigour describes how confidentiality issues and the rights of participants are dealt with during the research process.

The most common criteria used to evaluate qualitative research studies are credibility, dependability, transferability and confirmability (Table 2). Other terms such as goodness and fruitfulness may also be used (Lincoln and Guba, 1985). The researcher needs to identify the criteria used and the reader should be able to clearly follow each step of the research process:

- **Credibility** refers to the faithfulness to the description of the phenomenon in question (Koch and Harrington, 1998). It addresses the issue of whether there is consistency between the participants’ views and the researcher’s representation of them. Koch (2006), asserts that credibility may be enhanced by the researcher describing and interpreting his/her experiences as researcher, and also by consulting with participants and allowing them to read and discuss the research findings. Credibility may also be demonstrated by prolonged engagement, observation and audit trails.

- **Dependability** (auditability) is an integral component of rigour and involves the researcher giving the reader sufficient information to determine how dependable the study and the researcher are. A study may be deemed auditable when another researcher can clearly follow the trail used by the investigator and potentially arrive at the same or comparable conclusions. A research study may be shown to be dependable by producing evidence of a decision trail at each stage of the research process. According to Koch (2006), this provides the reader with evidence of the decisions and choices made regarding theoretical and methodological issues throughout the study and entails discussing explicitly the reasons for such decisions. It is also necessary for each stage of the research to be traceable and clearly documented.

- **Transferability** (fittingness) refers to whether or not findings can be applied outside the context of the study situation. When critiquing qualitative research, a study can be deemed to have met the criterion of transferability when the findings can ‘fit’ into other contexts and readers can apply the findings to their own experiences. Transferability is also enhanced when the results are meaningful to individuals not involved in the research study.

- **Confirmability** requires the researcher to demonstrate how conclusions and interpretations have been reached. It is concerned with establishing that findings are clearly derived from the data (Tobin and Begley, 2004). Confirmability is usually established when credibility, transferability and dependability are achieved.

- **Goodness** is another criterion against which the trustworthiness and authenticity of qualitative research can be measured. When critiquing the rigour of qualitative studies the issue of goodness may be seen as an integral component of the research process and an indicator of the robustness of the study. Tobin and Begley (2004) suggest that goodness is an overarching principle of qualitative inquiry and must be reflected in the entire study. Goodness needs to be evident in the philosophical background and study design, providing explicit explanations regarding the study context, data collection and management and the interpretation and presentation process. Goodness, therefore, is a principle that should be present during all stages of the research study and explicit in the final written report.

**Findings and discussion**

As stated above, findings from qualitative studies can be represented as a narrative (story), themes, description of the phenomenon under study or an interpretive account of the understanding or meaning of an experience. Regardless of how the final outcome is presented, the researcher should discuss the findings in the context of what is already known.

For many this will involve further literature review related to the final outcome. However, the reviewer should beware of exaggerated claims as to the significance of the research and implications for practice, and further research should be located in the study’s findings. Moreover, the researcher should relate the findings of the study back to the original research purpose, and illustrate whether or not it has been adequately addressed (Thorne and Darbyshire, 2005).

**Conclusions, implications and recommendations**

The researcher should conclude by placing the findings in a context that indicates how this new information is of interest, and its implications for nursing. These conclusions should reflect the study’s findings and ideally should offer recommendations as to how they may be developed.

**References**

An accurate list of all the books, journal articles, reports and other media referred to in the study should be included in a reference list at the end of the study (Polit and Beck, 2006). For the reader who has an interest in the topic that was studied, the reference list can be a good source of further reading.

**Conclusion**

As with a quantitative study, critical analysis of a qualitative study involves an in-depth review of how each step of the research was undertaken. Because of the subjective nature of qualitative research it is often regarded as more difficult to critique. However, an evidenced-based profession cannot accept any research at face value and needs to be able to determine the strengths and limitations of studies when reviewing the available literature on a topic.


KEY POINTS

■ Qualitative and quantitative studies are fundamentally different approaches to research and therefore need to be approached differently with regard to critiquing.

■ Despite differences in philosophies and terminology, the various qualitative methods have many similarities that can be categorized together.

■ Phenomena are not simply a number of different variables that can be studied independently: they are more complex than the sum of their parts and should be studied holistically.

■ Qualitative studies are perceived as being more difficult to critically evaluate than quantitative studies; nevertheless, nurses need to be able to critique qualitative research in order to identify best practice.