NON-INTRUSIVE RESEARCH: IDEAS AND GUIDELINES FOR EXPEDIENT THESIS COMPLETION

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ABSTRACT

This paper offers ideas and guidelines for timely completion of nursing theses by way of non-intrusive research - research with minimum impact or intrusion upon research participants. It arises from lessons learned in assisting nursing research students submit their theses within specified timeframes. Too often, students embark upon projects unnecessarily ambitious for the purpose of their degree, resulting in protracted finishing dates and disrupted careers. Different forms of non-intrusive data are addressed, their advantages, disadvantages and ethical considerations. Rigorous data analysis fitting to non-intrusive data - content analysis - is described: features, measures, category requirements and practical principles. Application to nursing theses is provided and the vexing issue of freedom given to nursing students in designing their research is raised.

INTRODUCTION

Timely completion of theses is an issue raised by theses supervisors, research degree coordinators and research departments in higher education institutions. Recent discussion about improving research completion rates within the Australian research training scheme highlighted 'laissez faire' supervision and attempting to produce 'the great work' as deterrent factors (*The Australian: Higher Education Supplement*, 15 Jan 2003, p.24). This raises questions of expediency versus high quality outcomes: Which is more important, a project being completed on time, or taking as long as necessary to answer the research question? We argue both are equally important in well-designed research.

Well-designed projects require research questions and methods be developed very carefully. These determinants are addressed at length in numerous texts written for researchers and supervisors (Roberts and Taylor 2002; Langford 2001; Phillips and Pugh 1994; Parry and Hayden 1994; Lewins 1993; Van Wagenen 1991). Unfortunately, despite the resources available, we continue to witness situations where students become bogged down and severely delayed in overly ambitious projects in terms of size and expected outcomes. The research training required could have been achieved by way of smaller, more tightly designed projects.

Being tempted to create 'the great work' is well addressed by Mullins and Kiley (2002). They make the point (quoting Ballard) that examiners of theses assume candidates are 'still apprentices in the profession of research in their discipline' and thus largely judged on their 'future promise' (p.371). On this note, we believe it is in the best interest of advancing the nursing discipline for candidates to complete theses fitting their 'apprentice' status, to graduate, and move on to postgraduate research - not languish in their candidature.

Nursing academics in Australia have voiced their top three 'most preferred' outcomes for 2005 (Sellers and Deans 1999, p.55):

…that nursing be fully accepted by other academics as a discipline in its own right, that nursing practice be more strongly guided by research, and that nurse academics become more visible within the international research community.

These strongly research oriented desires highlight the need for timely completion rates by nursing research students; more qualified researchers are required to advance the discipline. This need is further borne out by the results of a recent survey of Australian nursing researchers showing 'that publication of refereed research articles by Australian nurses is low in relation to the total articles in the journals analysed' (Wilkes et al 2002, p.19); publication is integral to the thesis completion process.

We believe it incumbent upon thesis supervisors and candidates to recognise the thesis experience as primarily a research training exercise and only embark upon projects that can realistically be achieved within specified timeframes. Here, we propose one way for research students to expediently achieve the aims of their thesis.

Proposed project

The proposed project is a content analysis of non-intrusive data. That is, the method of data analysis is content analysis, and data comprise information obtained without engaging or disturbing the activity of other people - hence the term 'non-intrusive'. Importantly, this means the approval of a human research ethics committee will generally not be required to conduct the project (individual university regulations may vary), a potentially delaying process. However, this is not to suggest such a project is without ethical considerations - a serious point to which we return in this paper.

Typically, the research topic drives project design. However, for a beginning researcher working within a strict timeframe, the situation may ideally be a little different. The nature of data to be collected and method of data analysis may be specified prior to topic selection. When non-intrusive data and content analysis are used as a way of arriving at a topic, we have found any initial feeling of constraint by students soon gives way to excitement on discovering a topic of professional interest. As the following material is perused, we suggest these questions be asked:

- How does this material relate to my situation?
- What interests me especially about this material?
- Does this material remind me of an aspect of practice that could be investigated?
- Could this material offer a new perspective on an old problem?
- Has this new perspective been studied before in my hospital/setting/country?

Responses will help topic selection and the definition of a research question. Reading from several sources is suggested. We refer especially to Kellehear's text *The unobtrusive researcher: A guide to methods* (1993), however, the topics will be covered in many research texts.

NON-INTRUSIVE RESEARCH

Advantages

Some advantages of collecting data by non-intrusive measures are:

- researchers are able to 'see for themselves' (interviews and questionnaires rely on believing what others say);
- measures are usually discrete and harmless to others;
- measures are easily repeatable, increasing reliability;
- cooperation with others is rarely needed;
- measures are usually inexpensive; and,
- because measures are non-disruptive, inexpensive and safe, they are ideal for longitudinal studies conducted over a period of time (Kellehear 1993, pp.5-6).

Disadvantages

Some disadvantages of collecting data by non-intrusive measures are:

- original records may be distorted;
- observations from the view point of a stranger may fail to grasp important in-group meanings;
- intervening variables may distort data (for example, garbage analysis not taking into account recycling practices);
- selective recording by observers with different interests, biases and backgrounds (for example, a male observer of women may notice different features than a female observer and vice versa); and,
- the interrogation potential of verbal methods is missing (Kellehear 1993, pp.6-8).

Sources of non-intrusive data

Audio-visual records

These include photographs, film and television and music (Kellehear 1993, p.73-95).

Written records

These include official statistics (government and private); books, journals, newspapers and popular magazines; government business and other administrative records; personal diaries, letters and journals (Kellehear 1993, p.51-72).

Simple observations

- Exterior physical signs - eg. clothing, street signs, menus, shoe style, graffiti.

- Expressive movements - eg. smiling, frowning, bodily movements of eyes, face, limbs or posture.
- Physical location - eg. use of physical settings and personal space in places like lifts and trains.
- Language behaviour - eg. stuttering and conversational behaviour.
- Time duration - eg. the time paid to a shop or an exhibit (such as a poster presentation at a conference), or different type of interaction (such as question time at a conference presentation) as an indicator of interest (Kellehear 1993, pp.115-138).

Material culture

These data include any object or trace that indicates the extent and type of an activity. A classical example provided by Kellehear involves a Sherlock Holmes story: 'Holmes congratulates Watson on his purchase of one of a pair of professional office suites. When asked the basis of this, Holmes points to the fact that the steps leading to Watson's suite were more worn, implying more profitable people traffic to this suite compared to its twin on the other side' (p.96). Akin to this, is the idea of examining the wear and tear on books or journals as an indicator of their popularity and use. Content analysis of household garbage has been the subject of many studies to ascertain such things as social class (working class areas dispose of more beer cans while middle-class areas dispose of more wine bottles) and love of dogs (number of dog food cans disposed of). Cemeteries have attracted hundreds of studies to discover clues about past cultural values and practices, as has graffiti. And so the possibilities go on (Kellehear 1993, pp.96-114).

Note: non-intrusive data do not include information collected from interviews, questionnaires, manipulative experiments or tests such as psychometric tests.

BEING EXPEDIENT IN COLLECTING DATA

Audio-visual records

Due to potential confidentiality and sensitivity issues, we advise accessing only public audio-visual records such as television, cinema, radio, professionally available videos, or published photographs in newspapers, professional journals or textbooks. For projects requiring completion within one or two semesters, we suggest not attempting to access any personal audio-visual collections, government audio-visual records, private or public hospital or other workplace audio-visual records or archives. Negotiations required for these latter sources are likely to considerably delay progress.

Written records

Again, as with audio visual sources, due to potential confidentiality and sensitivity issues, we advise accessing only public, published written records available in public or professional libraries (the main, non-archival, sections) such as newspapers, professional journals or textbooks, or professionally distributed pamphlets or posters. For projects requiring completion within one or two semesters, we suggest not attempting to access any personal diary or document collections, unpublished government records, private or public hospital or other workplace written records or archives. Again (as with audio visual sources) negotiations required for these latter sources are likely to considerably delay progress.

Simple observation

Like material culture, simple observation (also called non-participant observation) offers vast opportunity for data collection for the researcher as a detached onlooker. Where human behaviour is being observed, however, there are potential ethical dilemmas because some people object to the idea of being observed and perceive observation as 'spying'. Objection may increase with the use of note taking or audio taping (common devices for recording observations) - especially when these are performed in a clumsy covert fashion. This is a trap for beginning researchers as Kellehear indicated with his anecdote of the curious waitress asking: 'Why are you writing underneath the table?' (1993, p.129).

Because observation involves many features of ethnographic research with its own specialist skills and concerns, including those above, we suggest it is likely to be unsuitable for a project of one or two semesters. However, if approval to proceed is received (for example, within a longer project), due to potential confidentiality and sensitivity issues, we suggest undertaking observations only of public settings or things where people are not involved, eg. commercial products, bill boards, street signs or public meeting places. These observations should take place outside of government or professional workplaces, or private homes (intrusive research).

Material culture

Material culture offers vast opportunity for data collection but one needs to be aware of some limitations. Due to a host of 'social, historical or geographical conditions objects or traces may be erased or vary because of unknown intervening variables' (Kellehear 1993, p.106). This means the researcher cannot be sure what they are looking at actually represents what they think it does. For this reason, when gathering data from material culture, Kellehear recommends researchers also employ supplementary methods such as archival, observational and conversational inquiry (p.112). This requirement is likely to increase the complexity of the research process beyond feasibility for a project of one or two semesters and we suggest not seeking data from material culture. However, if approval is received to proceed (for example, for a longer project), due to potential confidentiality and sensitivity issues, we suggest only accessing physical settings, objects or traces in public places. That is, outside of government or professional workplaces, or private homes (intrusive research).

ETHICAL CONSIDERATIONS OF COLLECTING NON-INTRUSIVE DATA

We stated earlier that non-intrusive methods do not generally require the approval of a human research ethics committee because they don't involve active participation by people. As can be seen though, people (or their products or possessions) are part of the non-intrusive process and researchers are obliged to consider issues of confidentiality and privacy. The basic principle of 'no harm shall be done' applies to all research.

Audio-visual records

Be aware permission to view and use photos for analysis is different to permission to use them publicly (for example in a book or exhibition). When commenting upon photos or film footage, appreciate living relatives, or indeed those in the photos if still alive, may be offended by the commentary. Know also, some Indigenous peoples do not wish to see images of dead relatives or have their names mentioned. Reproducing music or film may have copyright implications and these should be checked with a librarian (Kellehear 1993, pp.94-95).

Written records

Kellehear warned readers not to think just because you are dealing with books that people are not affected by what you write. For example, owners of documents 'sometimes do not wish to be identified for security or publicity reasons' (1993, p.71). This raises the issue of confidentiality. He pointed out one must be careful not to misrepresent data (cheating), breach copyright regulations or fail to appropriately reference others' ideas (plagiarism). It is also important not to misrepresent your role and purpose to officials in libraries and archives, thus raising the issue of consent (Kellehear 1993, p.71).

Simple observation

The main ethical dilemma is: 'one person's looking is another person's spying' (Kellehear 1993, p.135). In other words, should permission always be sought before undertaking observational research? Kellehear pointed out the difficulties of this. Firstly, once someone knows they are being observed, their behaviour is likely to change, defeating the research purpose. Secondly, consent is impractical in certain situations such as crowds (eg. in sports stadiums or on university campuses) where it would be impossible to know from whom to seek permission. These are issues of privacy. Kellehear stated it is 'doubtful that privacy is invaded by being observed in a public place'. However, he also pointed out the controversy observing private acts in public places can cause (such as observing physical location of breast feeding practices in a local shopping centre).

Material culture

As Kellehear pointed out, most observations are harmless and cause no offence to others, such as studying wear on door handles or books, or commenting on types of food in certain restaurants (1993, p.112). But ethical dilemmas can still present - consider the unwary researcher studying garbage who finds body parts or evidence of crimes such as theft and drug trafficking. Such finds raise issues of privacy - 'can garbage be regarded as "non-private" once it appears on the nature strip in front of the house?' (1993, p.113). Be aware that observations of material culture in some places may require consent from owners or local authorities (eg, hospitals or health clinics) (Kellehear 1993, p.113).

CONTENT ANALYSIS

Content analysis is a frequently used means of making sense of non-intrusive data. Basically, it is a way of finding useful patterns in data. Two important features are:

1. *The researcher decides what categories will be searched for* in the data prior to commencing the search (in contrast to thematic analysis where themes are derived from the data after the search is underway). This assumes the researcher knows what they want to search for, limited only by the imagination.

2. *The category is frequently quantified;* eg. the number of times it occurs is counted. 'In observations one may count grimaces, or sitting, or eye contact, touching, dominating or submissive behaviour and so on. In written form, one may count certain words, phrases or ideas as these appear in the text' (Kellehear 1993, pp.34-35).

Both these features (*a priori* selection and quantification) are influences from the positivist tradition. However, it is an oversimplification to locate content analysis purely in the deductive/positivist/quantitative paradigm. As familiarity with the potential of content analysis increases, we advise it be considered a blend of methods. For those particularly interested in a qualitative approach to content analysis, we suggest referring to Lupton (in Minichiello et al 1999).

Measures in content analysis

- *Time-space measures* - eg. 'newspaper column inches devoted to a certain topic/s in a newspaper, hours of television'.
- *Simple appearance* - eg. 'How many television advertisements use male voice-overs?'.
- *Frequency* - eg. 'how many times does a word or an idea appear in a policy document or textbook or speech?'
- *Intensity* - eg. 'importance or prominence in the behaviour, text or objects' (Kellehear 1993, p.35).

Category requirements to ensure credibility of content analysis

- Comprehensiveness, which means 'examining all the relevant sources and not just those which support your own theory'.

- Categories must be specific, clear and not overlapping - 'to minimise ambiguity and maximise reliability'.
- Clear definitions of categories 'so that even a computer could locate the data into them' - this strengthens reliability' (Kellehear 1993, p.35).

Practical principles in content analysis

- Decide on certain categories (from research question).
- Choose the sample.
- Select the time period for sampling.
- Decide on the number of events to be observed, issues to be read, shows/films to be seen.
- Record the observations systematically; tables can be useful (Kellehear 1993, p.36).

Writing the research question

The research question should be clear, concise and relate directly to the research interest or problem. To arrive at a question, it is useful to write a short paragraph on the research interest or problem. For example, the beginning researcher might be interested in how nursing as a profession is portrayed through public media such as job advertisements, popular magazines and television programs. They may be concerned the general population is not receiving messages that reflect current thinking about nursing as a discipline and a profession. Some of their own family members and friends may have made comments about nursing that clearly reflect outdated ideas. This experience is now the motivating force to research the problem and a content analysis of job advertisements in the national newspaper is considered a good place to start. It is understood as impractical to attempt researching more than one public medium within one project; an analysis of popular magazines or television programs would need to comprise separate projects.

Out of the short statement developed as described above, the topic can be derived, for example *'The public image of nursing as portrayed in nursing job advertisements'*. A clear statement of topic also leads to the research question, for example *'How is nursing as a profession portrayed in job advertisements for registered nurses in the national newspaper?'*

APPLYING THE PRINCIPLES IN CONTENT ANALYSIS

Deciding categories for content analysis

Recalling Kellehear's (1993) measures in content analysis, it might be decided to use a space measure, such as the size of newspaper column space devoted to each advertisement (assuming size relates to importance attached to the content). Or a simple appearance measure, such as layout of the advertisement, whether headings are used, and style and size of headings and print used. The choice may be made to examine frequency, for example how many times do the words 'registered nurse' (as opposed to just 'nurse'), 'professional', 'nursing discipline', or other words considered important, appear in each advertisement. Or, an intensity measure to indicate importance or prominence, such as mention in the advertisement of a degree or higher degree in nursing.

Recall also, the requirements suggested by Kellehear (1993) to ensure credibility of content analysis: Comprehensiveness, which in the above example would mean examining all advertisements according to the categories, not just those supporting one's theory. Categories must be specific and not overlapping; that is, each must be distinctly different. Finally, clear definitions of categories are needed so there is no doubt about which data fit into each.

These are suggestions only. As mentioned before, the categories developed are only limited by one's imagination. Also, as reading extends beyond this paper and Kellehear's (1993) ideas, other ideas about categories considered more useful for a particular situation may be found. The important point is that categories are developed before analysis is undertaken.

Choosing a sample

Continuing with the example of job advertisements for registered nurses, it is necessary to decide which newspaper is going to be analysed, on what days and within what sections. Can the advertisements appear on any pages or are only certain 'positions vacant' pages or sections within certain pages to be analysed? Reaching these decisions will require familiarisation with the newspaper in question.

Selecting a time period

Be realistic here. For example, for a project that must be accomplished within one semester, we suggest data collection occur within a three to four week period (or for a two semester project, a six to eight week period). Experience shows being tempted to extend beyond this time will adversely affect the project's progress. The success of a project depends more on the quality of the work than the quantity. In the newspaper example, be aware the three weeks of advertisements could be collected from recent past newspapers; one would not necessarily have to wait week by week for the newspaper to be published.

Deciding on the number of events to be observed

There are no hard rules on this. Using the newspaper example, we anticipate collecting all job advertisements for registered nurses in a major weekly newspaper for three weeks would yield ample data for the purpose (say, 30-40 advertisements). Enough data for a rigorous analysis is needed but one does not want to be overwhelmed by data to the point where only a superficial analysis can be

undertaken (reducing the number of categories will help overcome this problem). Again, it's more important to be interested in quality rather than quantity and the appropriate scope of the project needs constantly bearing in mind.

Recording observations systematically

While one should think ahead and plan for how to record the outcomes of the analysis, it will only be when outcomes are to hand that some final decisions will be reached. Reading research textbooks for ideas on this is a good idea. Because analysis will involve numbers and counting, clearly labelled tables can be useful. Other means of displaying descriptive statistics such as graphs and pie charts are likely to also be useful. Remember, the important point is that the reader of the report can clearly understand the outcomes of the analysis. Complex or fancy recording will serve no purpose unless it conveys the message intended. In some instances, simple statements will convey the meaning most usefully.

OTHER TOPIC IDEAS

The example of the newspaper advertisements is just one of numerous similar possibilities. For example, interest might be held in how nursing is portrayed in other media such as magazines or novels, or television or radio. One needs to be aware with audio-visual media, copying the particular program will be necessary (librarians are helpful in making sure copyright law is not infringed) so the program or footage can be viewed over and over to undertake an analysis. Or, one's interest might be to analyse an audio-visual product available in the library. This is a simpler option but be aware analysis of audio-visual records is generally more complex than written records.

Interest might lie in entirely different topics, such as how a particular nursing procedure is recorded in different textbooks or journal articles (we suggest avoiding workplace-based procedure manuals - stay with published sources). Or, interest might lie in a particular health promotion message being distributed in a local area or nationally via pamphlets and posters. Or, one might wish to analyse the contents of a local or national nursing journal to ascertain how many articles are research-based, or display other features in which interest is held.

The more one thinks and reads about non-intrusive data and content analysis *in relation to one's own situation*, the more ideas come to mind. The researcher will eventually settle on a topic that is of great interest and which they believe could be significant in improving nursing care - which after all, is the prime purpose of nursing research.

We encourage readers to study research reports using content analysis as a research methodology and to make useful links with the ideas presented here. For example, in the fields of nursing and health some recent reports involve content analysis of journal articles (Halimaa 2003), historical documents (Meehan 2003), print journalism (Jamieson et al 2003), news media coverage (Schwartz and Woloshin 2002), television (Zuppa et al 2003), and health journals (Weaver et al 2003).

CONCLUSION

Implicit in the practical advice of this paper, are vexing questions about the appropriate degree of freedom given to research students in their choice of topic and method. Nursing has a tradition of individual students conceiving and conducting individual projects in their research degrees. However, this practice is increasingly under challenge as the most effective means of advancing the nursing profession, with proposals afoot for students to be, rather, linked with existing programs of research (Emden and Borbasi 2000). Our proposal for non-intrusive research falls within this wider search for effectiveness and expediency. It can also be argued that preparing and submitting an ethics application is an important research training exercise. While not denying this, we suggest for timely completion, we cannot afford to expose all students to *all* research processes and methodologies.

We believe non-intrusive research is well suited to research students completing a thesis. Because it minimally disturbs other people (a significant benefit in itself) it offers time saving features that can assist in propelling students toward completion within specified timeframes. Combined with content analysis as a means of analysing the non-intrusive data collected, we consider it to be a rigorous and ethical process with potential to meet the research training purpose of a thesis at honours or master (or indeed doctoral) level. We suggest the ideas and guidelines offered here provide a sound basis on which to base further exploration.

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