

Chapter 7: Ideas to Use

Ideas to Use – Possible Sources for Content Analysis

- Works of reference, for example *Annual Abstract of Statistics*, *The Times Index*
- Statistical records
- Annual and special reports, local and unofficial, including reports by Medical Officers of Health, schools, universities, trade unions
- Parliamentary debates (*Hansard*)
- Documents on foreign policy
- Newspapers
- Cabinet records
- Other government reports and documents, for example green and white papers
- Private papers and letters
- Biographies and autobiographies
- Diaries
- Memoirs
- Social surveys
- Novels, poetry, plays
- Newspapers, journals and other periodicals, including current affairs pieces by journalists as well as social scientists and educational commentators
- Film, television and video materials, for example news broadcasts
- Photographs, maps and pictures
- Radio/audio recordings
- Interviews, tape recorded and other museum artefacts.

Source: Finnegan (2006, pp.140–1) citing Mowatt (1971).

Chapter 7: Points to Think About

Points to Think About – Types of Variables and Levels of Measurement

Discrete/Categorical

- Nominal-level variables (e.g. gender, marital status) have no evaluative distinction in that they cannot be measured in terms of one being greater or lesser than the other. Their difference is therefore in kind as opposed to being quantitative.
- Ordinal-level variables do have evaluative distinction. Although, like nominal variables, they can fall into distinct categories and so are discrete in nature, unlike nominal variables, they can be ordered or ranked in some order of importance within that category. For example, individuals can perceive their state of health as excellent, good or poor. Similarly, classifications of socio-economic status are good examples of ordinal-level variables.

Continuous

- Interval-level variables are similar in nature to ordinal-level variables; the difference being that the distance between each value is equal. Temperature is a good example; the difference between 12 and 13 degrees centigrade is the same as the difference between 22 and 23 degrees centigrade, thus they are continuous.
- Ratio-level variables have the same properties as interval variables but differ in that they have an absolute zero point. Weight is a good example; there is no weight below zero kilograms in that zero kilograms denotes the absence of weight. Age is another example; there is no age below zero.

Points to Think About – Do You Want to Describe or Explain?

The nature of your undertaking	Sample question
Describing the distribution of a variable	What are the breakfast eating habits of a group of 5-year-old children?
Describing a relationship between two variables	Is there a relationship between eating breakfast and school performance in a group of 5-year-old children?
Demonstrating a causal relationship between variables (explanatory research)	Do 5-year-old children who eat breakfast every day perform better at school?

Points to Think About – Formulating Questions to Use in Quantitative Research

- You need to pitch your questions at the right level. This involves making sure that potential respondents have the necessary knowledge to answer them and that they fit their frame of reference.
- There is almost always the potential for ambiguity in any data-collection technique involving the written or spoken word, however you must keep this to a minimum by drafting and redrafting your questions to get them as clear and unambiguous as you can (Fontana and Frey, 1998). This means avoiding any unnecessarily complex phrases or potentially unfamiliar vocabulary. It is particularly important to make the meaning of your questions clear where clarification of potentially ambiguous questions is not possible, that is if your respondents are going to complete the questionnaire in your absence. Even if you are present it is possible that respondents might feel too embarrassed to admit to not understanding a question and might therefore just take a guess.
- Keep your questions as succinct, concise and free of waffle as you can. Shorter questions have been associated with better response rates (Sallant and Dillman, 1994).
- Avoid double-barreled and, worse still, multiple-barrelled questions; for example, 'Please rate the staff in terms of friendliness and efficiency.' This is asking for two separate pieces of information; the staff in question could be very friendly but incompetent, alternatively they might be extremely efficient but not in the least bit welcoming. This question should therefore be divided into two separate questions: first, 'Please rate the staff in terms of friendliness,' and second, 'Please rate the staff in terms of efficiency.'
- Clear instructions for your respondents are essential especially so when you are using questionnaires and the instructions have to be in writing; for example: '*Please turn over page,*' '*Please tick all the answers that apply,*' or alternatively '*Please tick the answer that best describes your view.*' Rating scales in particular must be accompanied by clear instructions as to what is required of the respondent.
- When using a quantitative data-collection method, you will need to include enough questions to ensure the reliability (see p. 149) of that measuring instrument whether it is a questionnaire or an interview schedule. Reliability tends to increase with the number of questions. However, so does the time taken to answer them and so you need to balance the need for reliability with the need to get people to take part.
- Generally, less than 20 questions decreases the reliability of quantitative data-collection instruments and more than 30 tends to deter potential respondents.
- You must pilot your questions. Testing a questionnaire or an interview schedule can reap huge rewards. Piloting in this way will give you insights into any misunderstandings and problems with the first draft in time for you to take action. This includes identifying potential ambiguity in the wording of questions, removing questions that are unnecessary or potentially offensive and spotting any gaps where you need some additional questions. You can engage the help of your friends and family for this, but if possible it is far better to conduct your pilot with people who are representative of or similar to those in your eventual sample.

Points to Think About – Questionnaire/Survey Types

- Factual, for example census, essentially descriptive;
- Attitudinal, for example opinion polls;
- Explanatory, for example to test theories and hypotheses;
- A combination of two or more of the above types.

Points to Think About – Self-administered Questionnaires

Strengths	Limitations
Relatively inexpensive, cost of postage being the main consideration	Risks of bias.
Relatively quick to administer as they tend to be disseminated in large quantities	Poor response rate to postal and internet-administered questionnaires. Bryman (2008, p. 136) outlines ways to improve response rate to postal questionnaires: for example, writing a good covering letter; providing a stamped addressed envelope and following up non-respondents with friendly reminders.
People are generally familiar with questionnaires and therefore tend not to feel apprehensive about filling them in	There is no one present to clarify questions that respondents do not understand which highlights further the need for unambiguous questions and clear instructions. Missing data can be a problem, where respondents have, either inadvertently or purposely, skipped a question or questions. It is important, therefore, to highlight to potential respondents the need to answer all the questions, however irrelevant they may seem. This can be done in a covering letter or in an introductory section on the questionnaire.
Less intrusive than interviews as respondents can complete at a time which suits them and at their own pace	With postal or internet questionnaires, you can never be sure that it was completed by the intended respondent, rather than a friend or a member of the intended respondent's family.
No interviewer effects (see disadvantages of structured interviews below)	Respondents whose ability to read and write is limited or those who speak little or no English cannot complete a questionnaire. In the case of the latter, however, you could get the questions and response choices translated, but this could have big financial cost implications.

Points to Think About – Designing Questionnaires

Courtesy – always treat questionnaire respondents with courtesy, for example:

- *We would be grateful if you could take 10 minutes to complete this simple questionnaire.*
- *Thank you for taking the time to complete this questionnaire.*

Identification – make sure you start with a brief explanation about the nature of the questionnaire and to end with clear guidance on what respondents should do once they have finished answering the questions, for example:

- *I would be grateful if you could complete this short questionnaire about how you use books and stories at home with your children. The questionnaire is part of a small-scale research project on young children's literacy development.*
- *Please return this questionnaire to your child's class teacher.*
- *Please return this questionnaire to (name) in the stamped addressed envelope provided.*

Length – do not overawe potential respondents by asking too many questions. Piloting your questionnaire will help you to get the number of questions and the overall length right.

Layout and presentation – avoid clutter and overcrowding on the page. Unless your questions are very short and simple a good rule of thumb might be 5 questions maximum per side of A4.

Instructions – put your instructions in a different font or in italics and make certain they are unambiguous to make your intentions clear to respondents, for example:

- *If yes, go to Question 3.*

Question order – think carefully about the order of your questions so as not to prompt, lead or in some other way 'tip off' your respondents. Careful ordering of questions can also help you to test your respondents' consistency and honesty by checking their earlier responses with subsequent related questions.

Question construction and wording – it is surprising just how much drafting and redrafting a single question may need to get it right. Questions about percentages and time for example can be problematic as people's estimates and recollections can be unreliable. Where you are using scales of various kinds, such as Likert Scales for attitude and priority measurement, do not forget to include an indicator about what 1,2,3,4 or 5 might mean. If you plan to use any open-text questions leave adequate space for the responses, for example:

Points to Think About – Cont'd

1. Please indicate (by circling the appropriate number) how often any of the resources below are used with Foundation Stage children in your class where:
1 = never used
2 = occasionally used (i.e. once or twice in the year)
3 = sometimes used (i.e. termly or half-termly)
4 = regularly used (i.e. most weeks of the year)
5 = frequently used (i.e. most days of the year)

Pilot – you must try your questionnaire out before administering it for real. Piloting the questionnaire is undoubtedly the best way to test its design and feasibility.

Analysis – Precoded numbers (e.g. in italics below) can speed up your data coding and analysis:

3. How many years experience of primary teaching do you have? Include the current academic year as 1 year, but do not include training or voluntary experience prior to gaining QTS. *Please tick the appropriate box below.*

- | | | | | | | | |
|---------------------------------------|--|---------------------------------------|---------------------------------------|---------------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| 1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/> | 4 <input type="checkbox"/> | 5 <input type="checkbox"/> | 6 <input type="checkbox"/> | 7 <input type="checkbox"/> | 8 <input type="checkbox"/> |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| 9 <input type="checkbox"/> | 10 <input type="checkbox"/> | 11–15 <input type="checkbox"/> | 16–20 <input type="checkbox"/> | 21–25 <input type="checkbox"/> | | | |
| (9) | (10) | (11) | (12) | (13) | | | |
| 26–30 <input type="checkbox"/> | 31 or more <input type="checkbox"/> | | | | | | |
| (14) | (15) | | | | | | |

Points to Think About – Self-administered Questionnaires to Use with Young Children

Do ...	Don't ...
<ul style="list-style-type: none">• make sure the questions are short, straightforward and written in simple language;• avoid words that have more than one meaning, even when it is apparent from the context of the question what meaning to apply;• direct questions specifically at the child, so instead of asking 'Do children your age ...?', ask 'Do you ...?';• make scaled responses clear and use verbal categories (e.g. agree, strongly agree, etc.) as opposed to numbered categories (e.g. on a scale of 1–10).	<ul style="list-style-type: none">• use hypothetical questions – for example 'What would you do if ...?';• use questions where a negative response is required to give a positive answer, for example 'Do you find it hard to do your homework on time?';• ask questions that require children to remember something that happened some time ago, instead concentrate on things that are recent or that they can apply to the here-and-now;• have too many response options, a general rule of thumb is three to four for children under 11 and four to five for children aged 11 and older.

Points to Think About – Structured Interviews

Strengths	Limitations
The interviewer can clarify questions where necessary, thus reducing the likelihood of answers being based on misunderstood or misinterpreted questions.	'Social desirability' effect is increased. The interviewer's background, that is gender, ethnicity, social class, can influence the answers people give.
Interviews can offer a 'voice' to otherwise disenfranchised groups; for example, they may be useful if respondents have reading difficulties and would not therefore be able to respond effectively to a questionnaire.	Interviewer variability can compromise the validity (see p. 150) of a study. Interviewer variability can occur when there is only one interviewer and consistency in conducting the interviews is not maintained. However, interviewer variability usually applies where there is more than one interviewer and refers to differences in the way that questions are asked and/or the way that responses are recorded by the different interviewers.
The interviewer can make sure all the questions are responded to.	Travel to and from interviews can incur a significant financial cost. Telephone interviewing may be less expensive, although it is still more expensive and time-consuming than postal questionnaires.
Respondents are less likely to become tired of answering questions where interviewing is used.	Where the research sample is relatively large, interviewing can be very time-consuming and this is likely to limit the size of the sample that students completing undergraduate dissertations could realistically manage.
The researcher can be more confident that the right person is answering the questions.	Interviewees may find being asked sensitive questions quite stressful.
Interview surveys tend to get higher response rates than questionnaire surveys.	Interviewers risk influencing responses by inadvertently giving visual and verbal cues.

Points to Think About – Structured Observations

Strengths

Observations can be carried out 'in context' thus offering greater insight into situational factors that influence human behaviour.

Can be very helpful for validating data obtained through other methods.

Can counter problems associated with self-reporting by verifying what people actually do as opposed to what they say or think they do.

Limitations

The 'reactive effect' (outlined above); although, this effect can be reduced as research participants become more accustomed to being observed.

Inconsistent recording of behaviour can bias the findings of a study (see inter- and intra-observer reliability above).

To be an effective observer requires training and if you have not had such training you will need to highlight any steps that you took to counter this, that is triangulation of methods or careful attention to written guidance. You will also need to acknowledge any lack of training as a potential limitation of your study when you come to write up your work.

Observing predetermined behaviours for set periods of time can be extremely tiring. It requires a huge amount of concentration on the part of the researcher, who must exercise control in ignoring interesting behaviours that are not on the observation schedule, this is much easier said than done.

Points to Think About – Designing a Quantitative Data-collection Instrument

- Generate questions/items that tap the conceptual variable under investigation. This involves careful scanning of relevant literature for operational definitions and to ascertain how the variable has been tapped by other researchers. It is also helpful to seek opinions from experts in the field such as your supervisor(s).
- If you intend to construct a questionnaire or interview schedule, you need to make decisions related to how to order and group the questions, where to put sensitive questions, what sort of response format to opt for, how to code these and so on. This is why it is essential that you access further research methods literature and take note of guidance on the 'how to' of your chosen method.
- Where rating scales are to be used, care must be taken in creating the scale values for the response alternatives and the words to use for them. You can inadvertently bias the scale if you do not think these matters through carefully. You will also need to decide whether or not to include a neutral response.
- Once you have operationalized the conceptual variable, you then need to pilot the tool to cover the full range of possible replies (questionnaires, interviews) or behaviours (observation) on which to base response formats (questionnaires, interviews) or behaviour checklists (observation).
- In the case of questionnaires and interview schedules, once your response formats are in place, you then need to pilot the tool again to ensure that questions are interpreted as you intend them to be and that responding is easy.
- You also need to establish, using the relevant procedures, the reliability and validity of your data-collection tool.

Chapter 7: Recommended Reading and Further Sources of Information

- Bryman, A. (2016, 5th edition), *Social Research Methods*. New York: Oxford University Press.
- Denscombe, M. (2014, 5th edition), *The Good Research Guide for Small-Scale Social Research Projects*. Milton Keynes: McGraw Hill Education.
- Neuendorf, K. (2017, 2nd edition), *The Content Analysis Guidebook*. Los Angeles: Sage.
- Punch, K. and Oancea, A. (2014, 2nd edition), *Introduction to Research Methods in Education*. London: Sage.
- Robson, C. and McCartan, K. (2015, 4th edition), *Real World Research*. London: Wiley.
- Shaw, C., Brady, L. and Davey, C. (2011), *Guidelines for Research with Children and Young People*. London: NCB Research Centre.

Useful websites

- About.Education <http://www.about.com/education/>
- Oxford Bibliographies <http://www.oxfordbibliographies.com/obo/page/about;jsessionid=B3C4B61410FF77B8FEDD80AFC974C231>
- Question Banks <https://www.ukdataservice.ac.uk/get-data/other-providers/question-banks>

Chapter 7: Reflective Tasks

- 1 With reference to the following question: *Is there a relationship between gender and food preferences?*
 - What quantitative approach does this question lend itself to?
 - How could the variable of interest be operationalized?
 - Consider how to ensure a good sample size
 - Determine data-collection methods that could be used
 - Consider what steps could be taken to ensure reliability
- 2 If the researcher wished to generalize his/her findings, what sampling technique would he/she need to utilize and how else could the option of generalizability be facilitated?

Chapter 7: Summary of Key Points

- It is important to be clear about when quantitative methods are called for. Quantitative methods are generally suited to areas that have already been researched so that established theories can be tested. Quantitative methods can also be used to ascertain the distribution of and relationships between variables.
- Variables represent the cornerstone of quantitative methods. Quantitative researchers are interested in the distribution of and relationships (correlational and/or causal) between variables. Variables can be defined both conceptually and operationally and differ in type and thereby the level of measurement to which they can be subjected.
- Any quantitative data-collection method has advantages and disadvantages and you will need to be able to demonstrate your knowledge and understanding of these and be able to justify your chosen methods when writing up your dissertation.