

Research Capacity Building Workshop 14. Carrying out empirical work Part 2: Methodology



Online Forum



Go to the address: <http://dutmoodle.dut.ac.za/moodle/>

Click on the category *RPS Research Capacity Building*, and click on course *Research Matters*.

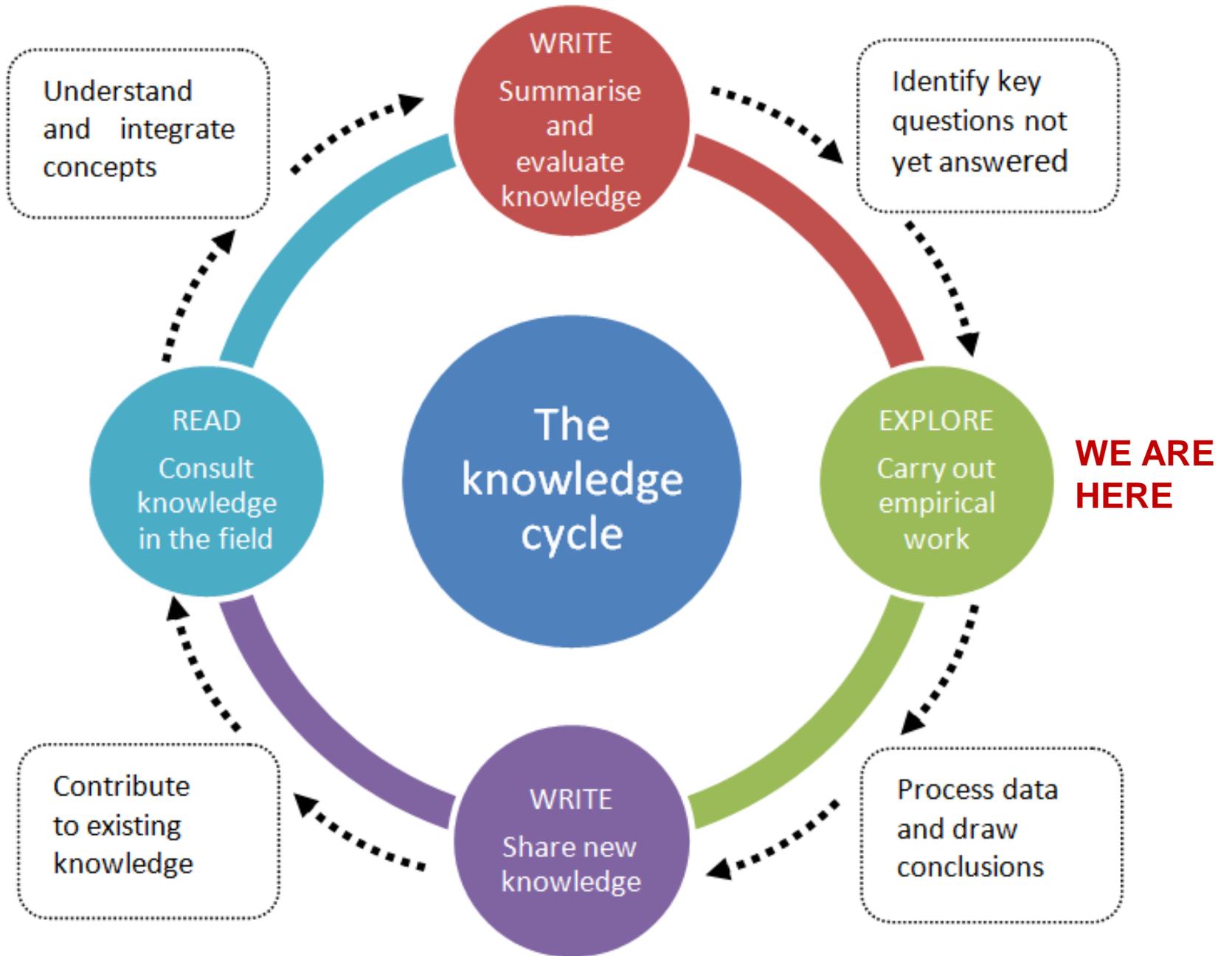
Materials are posted there online after workshops.

To log in:

User ID: staff or student number

Password: research

Once on *Research Matters*, go to Unit 16, click on “Survey: Attitudes towards thinking and learning”, answer the questions, and submit the results. Then reply to my message on the Social Forum headed: **METHODOLOGY: 1 June 2012**



Today's Programme



Today's programme will look at quantitative and qualitative methodology in terms of:

- the differences between them
- their advantages/disadvantages
- mixed methods
- examples of quantitative and qualitative methodology

and briefly show examples of the use of:

- Statistics
- NVIVO

Recap: The research processes



FUNCTIONS	RESEARCH
	The researcher...
CONTEXTUAL A research project needs to be properly contextualised before it can be carried out.	...sets the research project in context by deciding on a topic, reading up on the subject, and planning how to carry out the project...
IDEATIONAL Knowledge content in the form of data needs to be generated.	...and gathers data...
INTERACTIVE Some form of interaction is necessary to generate data.	...by interacting with participants and/or the world: observing, measuring, questioning and recording results.
SOCIAL The findings need to be socially accepted as “knowledge”.	...carries out the project with attention to rigour and protocols, so that results can be seen to be reliable.
REFLEXIVE The reflexive function regulates the research process in the manner of a feedback loop.	...checks assumptions and procedures to ensure that s/he is on track.

Recap: In preparation for the empirical work



Before researchers carry out their empirical work (i.e. data-gathering), they should be fully aware of their belief systems and values, as these will influence:

- what they consider to be evidence;
- how they will go about collecting it;
- how they will analyse it; and
- what kinds of conclusions they will reach.

In other words, researchers must identify their **research orientation** or “paradigm”. This should fit their naïve view of reality, or there will be a mismatch between the researchers’ genuine beliefs and their research findings.

Congruency is all!



Some “givens”:

- The research orientation used must “fit” the purpose of the research.
- The methodology used must be consistent with the approach.
- The actual methods used must be appropriate for the purpose of the research.

BUT:

While methodologies (systems of methods) are usually associated with certain orientations, individual *methods* can be used within *any* orientation

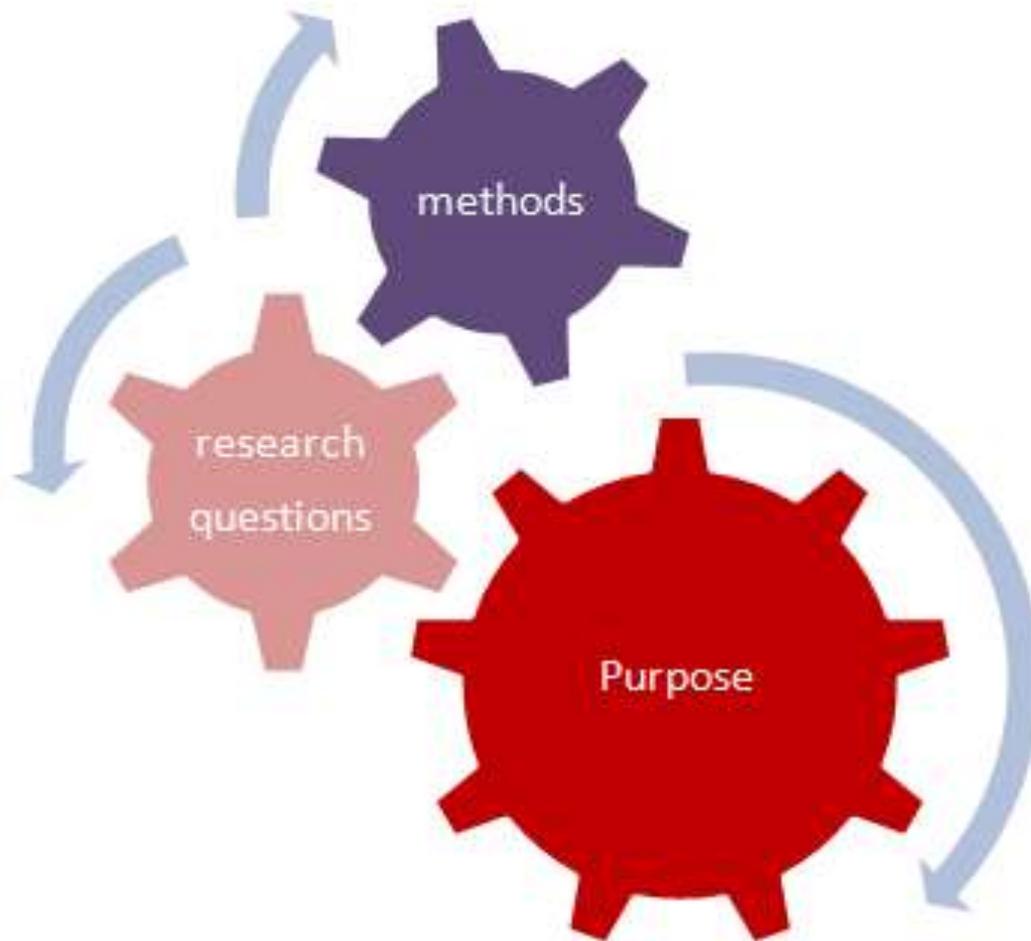
Purpose of the research



Research purposes can be diverse, e.g.

- argue a case for something
- develop an artefact
- identify causes of phenomena
- describe a process
- gain insight
- develop a better (weapon, medicine, bridge)
- identify and challenge oppression
- follow up results or consequences of something

Methods must achieve the purpose of the research



Methods are flexible



Methods themselves cannot be categorised as “quantitative” or “qualitative”:

Thus, interviews may be structured and analysed in a quantitative manner, as when numeric data is collected or when non-numeric answers are categorized and coded in numeric form. Similarly, surveys may allow for open-ended responses and lead to the in-depth study of individual cases (Hughes 2006: 1).

Methods available



There are basically only three methods available.

The researcher can

- observe
- measure, or
- ask

Quantitative research methodology



The following points are taken from Hughes, C. 2006. *Quantitative and qualitative approaches* [online].

Key characteristics

- *Control - required to identify causes clearly*
- *Operational definition - specific definitions required*
- *Replication - repetition obtains same results*
- *Hypothesis testing*

(Adapted from Burns, 2000: 6-7)

Strengths and limitations



Strengths

- Precision - through quantitative and reliable measurement
- Control - through sampling and design
- Ability to produce causality statements, through the use of controlled experiments
- Statistical techniques allow for sophisticated analyses
- Replicable

Strengths and limitations



Limitations

- Because of the complexity of human experience it is difficult to rule out or control all the variables;
- Because of human agency people do not all respond in the same ways as inert matter in the physical sciences;
- Its mechanistic ethos tends to exclude notions of freedom, choice and moral responsibility;
- Quantification can become an end in itself.

Limitations contd.



- It fails to take account of people's unique ability to interpret their experiences, construct their own meanings and act on these.
- It leads to the assumption that facts are true and the same for all people all of the time.
- Quantitative research often produces banal and trivial findings of little consequence due to the restriction on and the controlling of variables.
- It is not totally objective because the researcher is subjectively involved in the very choice of a problem as worthy of investigation and in the interpretation of the results

Questions to consider



Why are only testable ideas of worth in science?

Scientific study is empirical and objective. What is meant by this statement? (Adapted from Burns, 2000: 9-10)

Qualitative research



Key characteristics

- *Events can be understood adequately only if they are seen in context. Therefore, a qualitative researcher immerses her/himself in the setting.*
- *The contexts of inquiry are not contrived; they are natural. Nothing is predefined or taken for granted.*
- *Qualitative researchers want those who are studied to speak for themselves, to provide their perspectives in words and other actions. Therefore, qualitative research is an interactive process in which the persons studied teach the researcher about their lives.*

Qualitative research contd.



- *Qualitative researchers attend to the experience as a whole, not as separate variables. The aim of qualitative research is to understand experience as unified.*
- *Qualitative methods are appropriate to the above statements. There is no one general method.*
- *For many qualitative researchers, the process entails appraisal about what was studied.*

Qualitative research contd.



Ely et al add the following from Sherman and Webb (1988) to their definition:

Qualitative implies a direct concern with experience as it is 'lived' or 'felt' or 'undergone' ... Qualitative research, then, has the aim of understanding experience as nearly as possible as its participants feel it or live it.

Strengths and limitations



Limitations

- The problem of adequate validity or reliability is a major criticism. Because of the subjective nature of qualitative data and its origin in single contexts, it is difficult to apply conventional standards of reliability and validity.
- Contexts, situations, events, conditions and interactions cannot be replicated to any extent nor can generalisations be made to a wider context than the one studied with any confidence.

Limitations contd.



- The time required for data collection, analysis and interpretation is lengthy.
- Researcher's presence has a profound effect on the subjects of study.
- Issues of anonymity and confidentiality present problems when selecting findings.
- The viewpoints of both researcher and participants have to be identified and elucidated because of issues of bias.

Strengths



- Because of close researcher involvement, the researcher gains an insider's view of the field. This allows the researcher to find issues that are often missed (such as subtleties and complexities) by the scientific, more positivistic enquiries.
- Qualitative descriptions can play the important role of suggesting possible relationships, causes, effects and dynamic processes.

Strengths contd.



- Because statistics are not used, but rather qualitative research uses a more descriptive, narrative style, this research might be of particular benefit to the practitioner as she or he could turn to qualitative reports in order to examine forms of knowledge that might otherwise be unavailable, thereby gaining new insight.
- Qualitative research adds flesh and blood to social analysis

Questions to consider



- What is meant by 'deep' when referring to qualitative data?
- How limiting is the problem of non-replication?
(Adapted from Burns, 2000: 13-14)

The similarities between quantitative and qualitative



- Whilst quantitative research may be mostly used for testing theory it can also be used for exploring an area and generating hypotheses and theory.
- Similarly qualitative research can be used for testing hypotheses and theories even though it is mostly used for theory generation.
- Qualitative data often includes quantification (eg statements such as more than, less than, most as well as specific numbers).
- Quantitative (ie questionnaire) approaches can collect qualitative data through open ended questions.
- The underlying philosophical positions are not necessarily so distinct as the stereotypes suggest.

The combined approach



Eleven ways to combine qualitative and quantitative research:

- 1. Logic of triangulation.***
- 2. Qualitative research facilitates quantitative research.***
- 3. Quantitative research facilitates qualitative research.***
- 4. Quantitative and qualitative research are combined in order to provide a general picture.***

The combined approach



5. *Structure and process.*
6. *Researchers' and subjects' perspectives.*
7. *Problem of generality.*
8. *Qualitative research may facilitate the interpretation of relationships between variables.*
9. *Relationship between macro and micro levels.*
10. *Stage in the research process.*
11. *Hybrids.*

(Adapted from Punch, 1998: 247)

Combinations work well



A combination of quantitative and qualitative data works very well in social science research. This is because it combines the strengths while making up for the weaknesses of each approach.

Quantitative - measure, analyse and draw conclusions.
Quantitative data is useful for *showing* trends.

Qualitative - observe or ask. Qualitative data is useful for *explaining* trends.

Which approach to use



- 1. Research Questions:** What exactly are you trying to find out?
- 2. Purpose:** Are we interested in making standardized and systematic comparisons or do we really want to study this phenomenon or situation in detail?
- 3. The Literature:** How have other researchers dealt with this topic?
- 4. Practical Considerations:** This includes time, money and other factors.
- 5. Knowledge payoff:** Will we learn more about this topic using quantitative or qualitative approaches?
- 6. Style:** Some people prefer one to the other.

References



Creswell, J. 2003 *Qualitative, quantitative, and mixed method approaches*. Thousand Oaks: Sage Publications

Hughes, C. 2006. *Quantitative and qualitative approaches* [online]. Available at: http://www2.warwick.ac.uk/fac/soc/sociology/staff/academicstaff/chughes/hughesc_index/teachingresearchprocess/quantitativequalitative/quantitativequalitative/ (Accessed 31 May 2012)

Padgett, D.K. 2009. Qualitative and mixed methods in social work knowledge development. *Social Work* 54 (2): 101-5.

Review



Review: Research Design: Qualitative, Quantitative, and Mixed Methods Approaches

User Review - Joshua - Goodreads

Here's a book I was required to read for a class I'm taking - a class on how to write a graduate level research paper/study. The book has some useful examples, but overall it was a terrible bore, and was an exercise on how to write the same sentence in 18 different ways in order fill up space.