NERUPI *network*

Evaluating & Researching University Participation Interventions

Mixed Methods:

An Introduction

Thursday 19 September 2019

Andrew Bengry

Senior Lecturer, Psychology, Bath Spa University

BATH SPA UNIVERSITY

The case for mixing methods

- **More 'robust' research**
- **Quantitative/Qualitative methods**: strength and limitations

'Resolution'

- Combining quantitative and qualitative methods
  - Maximise the relative strengths of each approach
  - Offset relative weaknesses

- Increase in **mixed-method** research since 1980s

BATH SPA UNIVERSITY

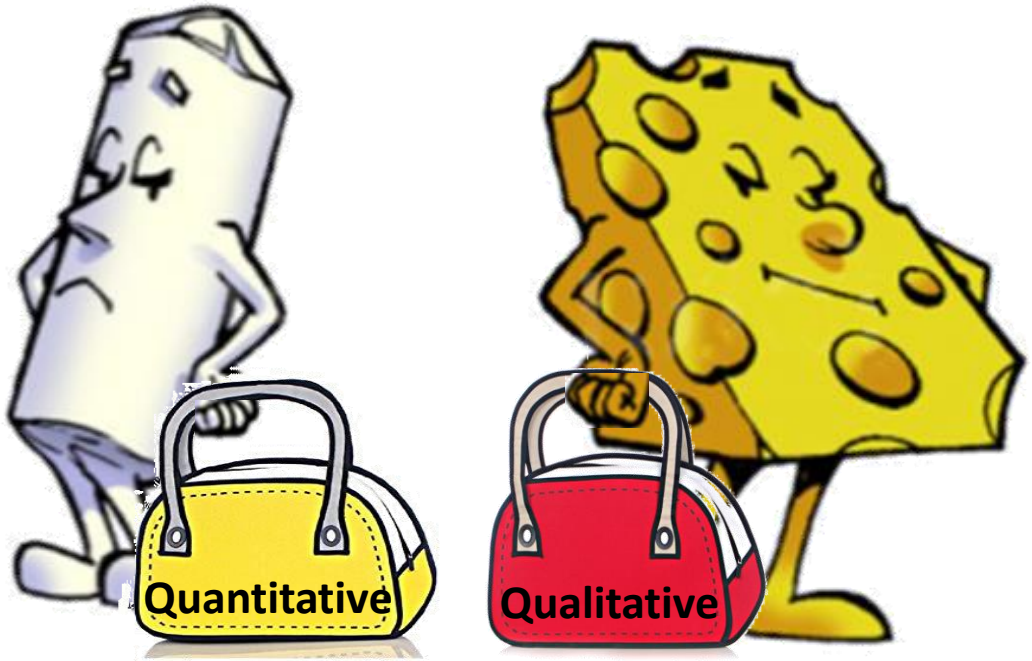
NERUPI evaluation FRAMEWORK

But…

is mixing quantitative & qualitative methods

Desirable?

Feasible?

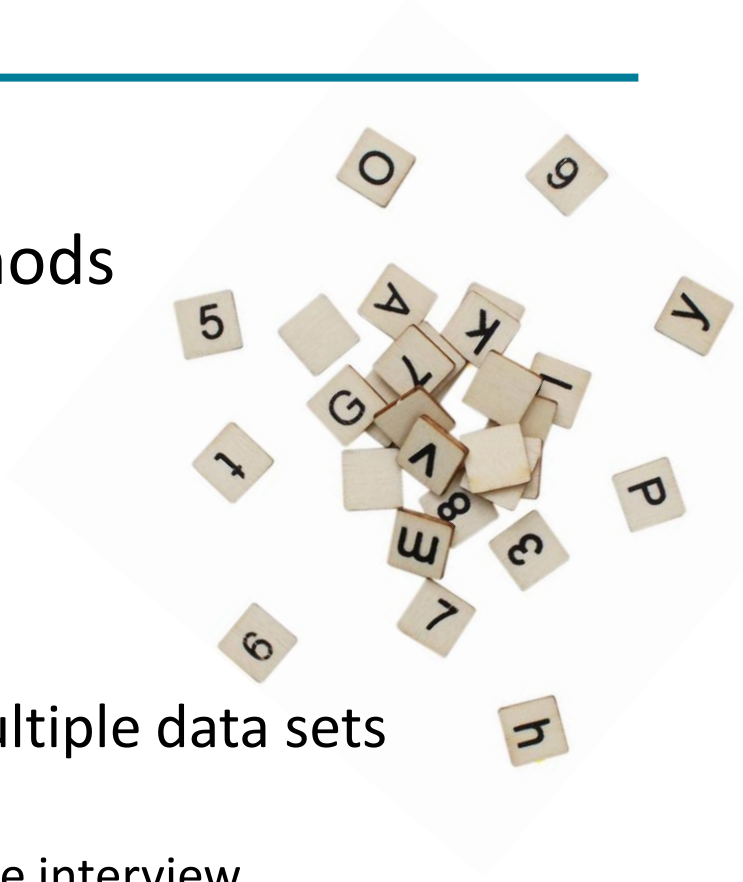


BATH SPA UNIVERSITY

NERUPI *evaluation* FRAMEWORK

What is mixed-method research

- **Integration** of quantitative and qualitative methods in a research design



- **<u>Not</u> Triangulation**
  - Combining methods (common research strategy)
  - Related ‘sub-studies’ – increase validity of data – multiple data sets
    - semi-structured interviews + observation + focus groups
    - structured interview + questionnaire + follow up telephone interview

BATH SPA UNIVERSITY

NERUPI *evaluation* FRAMEWORK

A brief history of mixed-method research (Creswell and Plano Clark, 2011)

1. **Formative period** (1950-1980s)
   - various writers laid foundation for mixed-method approaches
2. **Paradigm debate period** (1970-1980s)

Established view (Quantitative/qualitative research)
   - different epistemological/ontological foundations
   - incommensurable paradigms/can not be integrated

Emerging view (Mixed method research)
   - feasible
   - generates superior findings

3. **Procedural development period** (late 1980s – 21C)
   - How mixed-method research could be designed
4. **Advocacy and expansion period** (21C)
   - Recognition and development of mixed methods as distinct approach
5. **Reflective period** (2005)
   - Assessing/critiquing state and direction of mixed method research

BATH SPA UNIVERSITY

NERUPI *evaluation* FRAMEWORK

Can quantitative and qualitative methods be mixed?

BATH SPA UNIVERSITY

NERUPI *evaluation* FRAMEWORK

The argument against mixing methods

Two key arguments (Bryman, 2016)

1. Research methods carry epistemological commitments
2. Quantitative and qualitative research are separate paradigms.

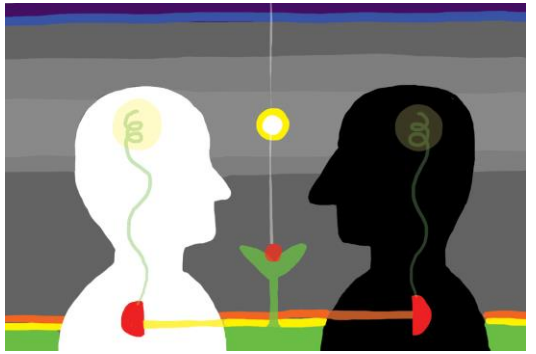
BATH SPA UNIVERSITY

NERUPI *evaluation* FRAMEWORK

The ‘embedded methods’ argument

Research methods rooted in epistemological and ontological commitments

- **Quantitative**: Positivism [scientific method; objective; prediction]
- **Qualitative**: Interpretivism [non-scientific; subjective; understanding]



Research design/selection of methods selection

- informed by epistemological position

(Bryman, 2016)

BATH SPA UNIVERSITY

NERUPI *evaluation* FRAMEWORK

Mixed-methods critique: ‘embedded methods’ argument

Critique

- Claim that research methods carry fixed epistemological/ontological implications cannot be maintained
- Research methods can be put to a wide variety of tasks

(Bryman, 2016)

BATH SPA UNIVERSITY

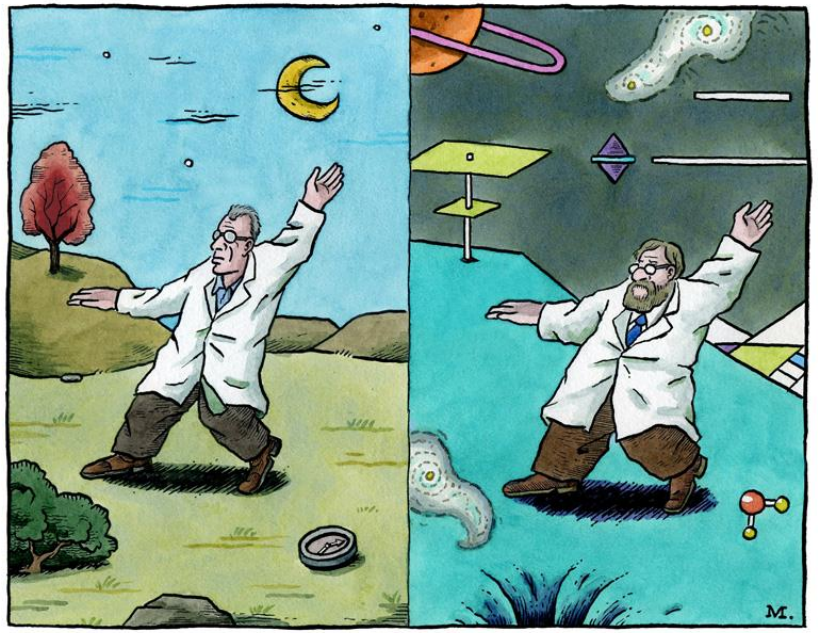
NERUPI evaluation FRAMEWORK

The paradigm argument

Quantitative and qualitative research constituted as separate paradigms

- epistemological assumptions, values and methods are intertwined
- incompatible/incommensurable paradigms
- methods can only be 'integrated' at a superficial level
- research will be located within a single paradigm

(Bryman, 2016)



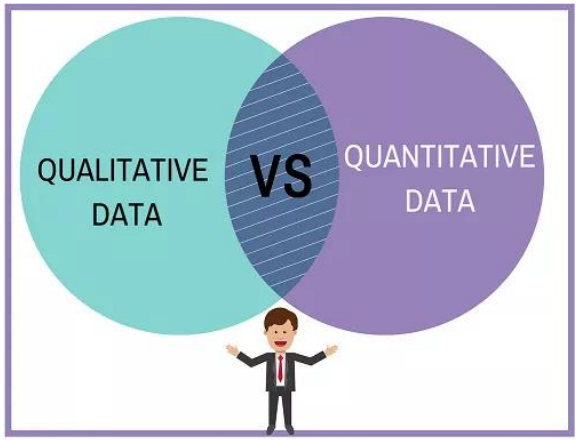
Synchronised scientists in parallel universes

BATH SPA UNIVERSITY

Mixed-methods critique: paradigm argument

- Assumptions about interconnectedness of method and epistemology, can not be demonstrated
- Quantitative and qualitative research are not paradigms (Kuhn, 1970)
  - Areas of overlap and commonality

(Bryman, 2016)



BATH SPA UNIVERSITY

NERUPI evaluation FRAMEWORK

Paradigms

BATH SPA UNIVERSITY

NERUPI *evaluation* FRAMEWORK

Paradigms (Thomas Kuhn, 1970)

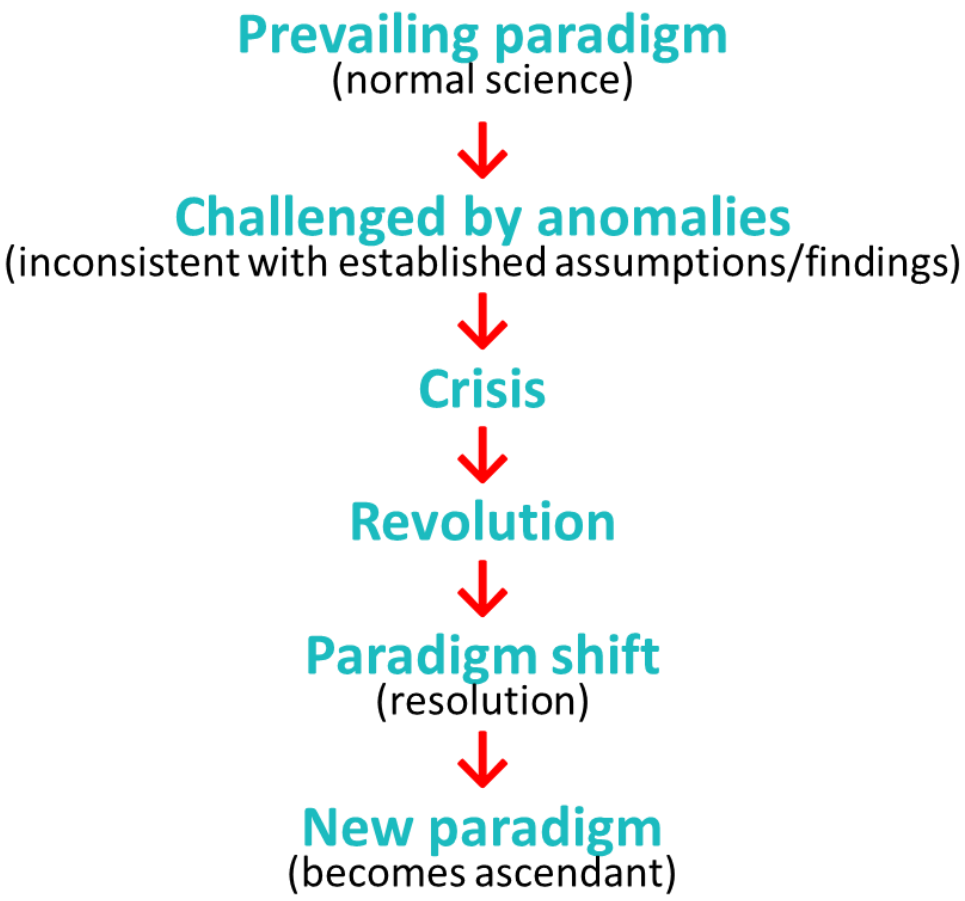
Cluster of beliefs and dictates for scientists in particular discipline

Influences:

- What should be studied?
- How research should be done?
- How results should be interpreted?

Different perspectives within a field grounded in different paradigms.

Paradigm Shift (scientific revolutions) (Thomas Kuhn, 1970)



BATH SPA UNIVERSITY

NERUPI *evaluation* FRAMEWORK

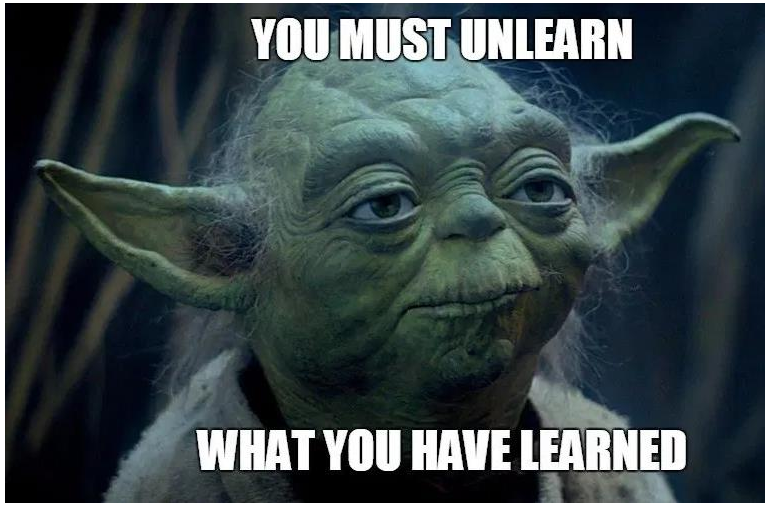
The ‘Paradigm Wars’

BATH SPA UNIVERSITY

NERUPI *evaluation* FRAMEWORK

Rebels attack the Empirical

- 1980s – raging debate in Social Sciences
  - How research should be conducted
  - Philosophies underlying quantitative/qualitative research
- Incommensurable epistemologies and methodologies



Qualitative ⟵ OPPOSING SCHOOLS OF THOUGHT ⟶ Quantitative

BATH SPA UNIVERSITY

NERUPI evaluation FRAMEWORK

The quantitative position

- Social science research should be conducted in the same way as the natural sciences (e.g. chemistry and physics).

Positivist viewpoint

- Research should be empirically based
  - Objective
  - Free from bias

Deductive

- Conclusions should be deduced from
  - Reliable, valid and demonstrable experimentation.

BATH SPA UNIVERSITY

NERUPI *evaluation* FRAMEWORK

The qualitative position

- Objectivity in social research was an artificial contrivance
  - Researcher cannot disentangle themselves from topic
  - Subjectivity was inevitable and indeed desirable
  - attempting to demonstrate cause and effect conclusively is a fallacy.

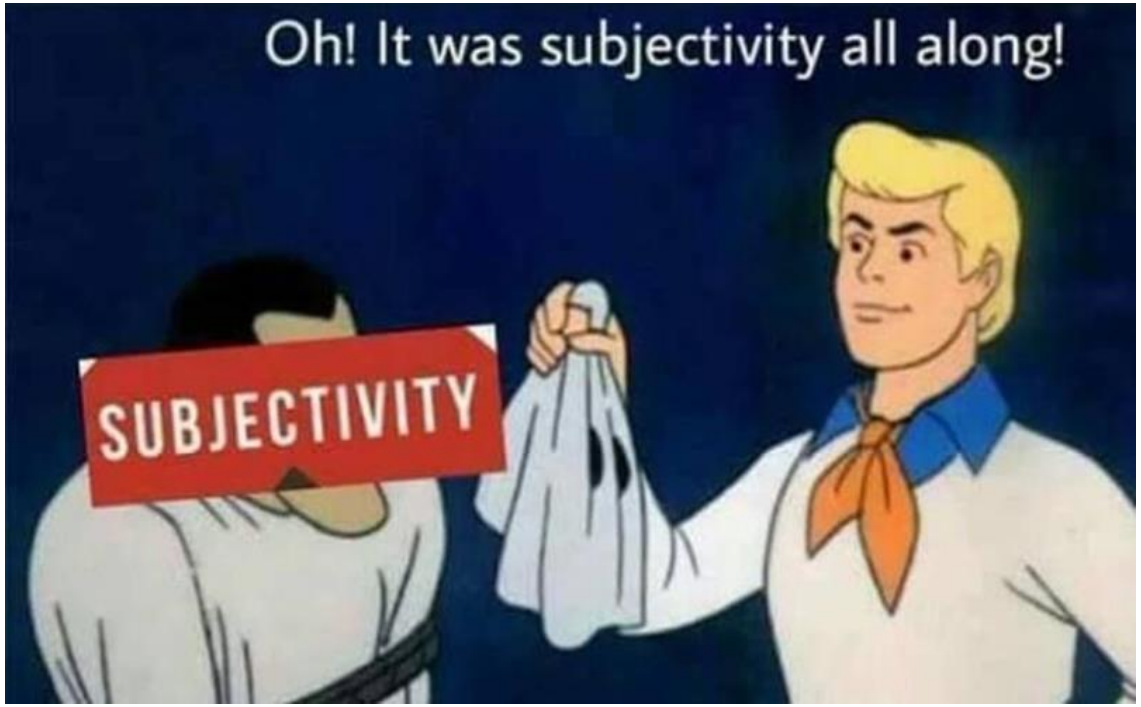
Constructivist viewpoint

- Research should follow an inductive approach
  - Theories and generalisations should be formulated from specific observations (not deductive reasoning)

BATH SPA UNIVERSITY

NERUPI *evaluation* FRAMEWORK

Qualitative critique of positivism



BATH SPA UNIVERSITY

NERUPI *evaluation* FRAMEWORK

Mixed-method debate

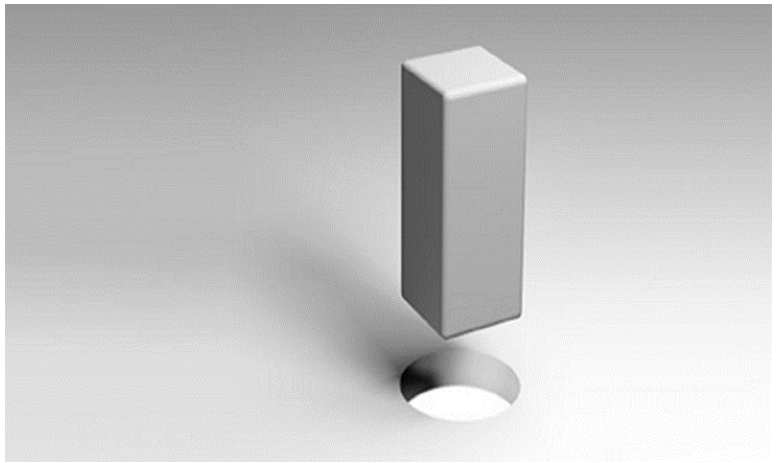
BATH SPA UNIVERSITY

NERUPI evaluation FRAMEWORK

The epistemological debate

- Quantitative and qualitative research grounded in incompatible epistemological principles

- Mixed method research is not possible



BATH SPA UNIVERSITY

NERUPI evaluation FRAMEWORK

The technical debate

- Relative strengths of data collection/analysis techniques associated with quantitative & qualitative methods
- Acknowledgment of distinct epistemological/ontological positions of quantitative & qualitative research, but not viewed as fixed and inevitable.

Underlying assumption

Mixed-method research

- feasible and desirable

Quantitative and qualitative methods

- can be fused
- are compatible

BATH SPA UNIVERSITY

NERUPI evaluation FRAMEWORK

Pragmatist approach

BATH SPA UNIVERSITY

NERUPI evaluation FRAMEWORK

The outcome of the paradigm wars

- Some entrenchment of hard-line positions

Pragmatist approach

- Quantitative and qualitative methods have equal status
- Quantitative and qualitative research designs can answer different types of research question on the same topic
- Developing theoretical frameworks
  - integrate quantitative and qualitative approaches

BATH SPA UNIVERSITY

NERUPI *evaluation* FRAMEWORK

Mixed-methods research design

BATH SPA UNIVERSITY

NERUPI evaluation FRAMEWORK

Priority and sequence

Mixed method research can be classified in terms of two criteria

The priority decision

- How far is qualitative or quantitative method the principle data-collecting tool, or do they have equal weight?

The sequence decision

- Which method precedes which?
- Does qualitative method precede quantitative method?
  Or visa versa?
- Is data collected using each method concurrently?

BATH SPA UNIVERSITY

NERUPI evaluation FRAMEWORK

Convergent parallel design

Priority

- Qualitative and quantitative data have equal priority

Sequence

- Qualitative and quantitative data are collected simultaneously

Analyses

- Data sets compared and/or merged to form an integrated whole

Rationale

- Triangulation exercise
- Comparing two sets of findings
- Capitalise strengths/offset weaknesses

BATH SPA UNIVERSITY

NERUPI evaluation FRAMEWORK

Exploratory sequential design

Priority

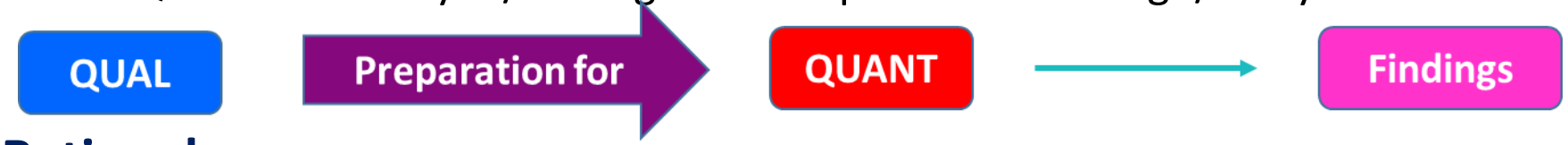
- Quantitative data have priority

Sequence

- Qualitative data collected prior to collection of quantitative data

Analyses

- Qualitative analysis/findings inform quantitative design/analysis



Rationale

- Generating hypotheses/hunches, to test with quantitative methods
- Developing instruments (e.g. questionnaires) for quantitative investigation
- Assess scope/generalizability of qualitative findings

BATH SPA UNIVERSITY

NERUPI *evaluation* FRAMEWORK

Explanatory sequential design

Priority

- Quantitative data have priority (but not always)

Sequence

- Collection/analysis: quantitative data followed by qualitative data

Analyses

- Quantitative analysis/findings supported by qualitative data/analysis

- **Rationale**
  - Elaborate/explain quantitative findings

BATH SPA UNIVERSITY

NERUPI evaluation FRAMEWORK

Embedded design

Priority

- Can be either Qualitative or Quantitative, but also draws on other

Sequence

- Phasing of data collection may be simultaneous or sequential

Analyses

- Data sets analysed separately, but findings integrated

- **Rationale**
  - Qualitative **or** quantitative data insufficient to explain phenomenon
  - Enhance qualitative/quantitative research by integrating other

BATH SPA UNIVERSITY

NERUPI *evaluation* FRAMEWORK

Rationale for mixing methods

BATH SPA UNIVERSITY

NERUPI evaluation FRAMEWORK

Mixed-methods research [Content Analysis) (Bryman, 2016)

Triangulation

- Generate findings with greater validity/mutually corroborated

Offset weaknesses

- offset relative weaknesses/maximise strengths of quantitative/qualitative methods.

Completeness

- Provide a more comprehensive account of area of enquiry.

Process

- Investigate social structures (quantitative) and social processes (qualitative).

Different research questions

- Quantitative and qualitative research can each answer different research questions

Explanation

- One method is used to help explain findings generated by the other.

Unexpected results

- Can generate surprising results that can be understood using other method.

Instrument development

- Qualitative research informing questionnaire design (wording/focus of closed questions)

Sampling

- One approach used to facilitate sampling of respondents/cases.

Credibility

- Employing both approaches to enhance the integrity of findings.

Context

- Qualitative research: contextualise survey findings/data

Illustration

- Qualitative data: illustrate ‘dry’ quantitative findings

Utility

- Usefulness/application of findings: combining approaches more useful to practitioners/others

Confirm and discover

- Using qualitative data to generate/quantitative research to test hypotheses, in a single project

Diversity of views

- Combining researchers’ and participants’ perspectives: quantitative & qualitative research
- uncovering relationships between variables (quantitative) **and** meanings for participants (qualitative)

Enhancement

- Building upon quantitative/qualitative findings by gathering data using the other research approach.

Benefits of mixed-method research

BATH SPA UNIVERSITY

NERUPI evaluation FRAMEWORK

Benefits of pragmatic approach (Yardley and Bishop, 2017)

- Mixing quantitative and qualitative research provides a richer and more complete account than using a single approach

Greatest advantage of mixing methods

- Quantitative and qualitative approaches are both particularly expert at critiquing the methods and conclusions of the other approach!

Pragmatic question

- What can we learn from each perspective?

BATH SPA UNIVERSITY

NERUPI evaluation FRAMEWORK

Challenges of mixed-method research

BATH SPA UNIVERSITY

NERUPI evaluation FRAMEWORK

Challenges of pragmatic approach (Yardley and Bishop, 2017)

- Examples of good mixed-method research not common in literature
- Mixing quantitative and qualitative methods not easy to do

To realize the benefits of mixing methods…

- Researcher/evaluator needs
  - To appreciate different paradigms, aims, procedures and methods of validation appropriate to qualitative and quantitative research.
  - Expertise and experience of both quantitative and qualitative methods

BATH SPA UNIVERSITY

NERUPI evaluation FRAMEWORK

“It is likely that there will be a growing appreciation that the ultimate pragmatic test of the value of any study is not what methods are used, but whether it exhibits the fundamental characteristics of good research: commitment and rigour in execution; analytic sensitivity to theory and data; transparency and coherence in presentation; and importance to future human activity” (Yardley, 2000).

BATH SPA UNIVERSITY

NERUPI evaluation FRAMEWORK

Any Questions?

BATH SPA UNIVERSITY

NERUPI *evaluation* FRAMEWORK