Mixed-methods and Intervention studies

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Mixed methods

What, why & how?

With acknowledgement to my colleagues Parvin Gheitasi and Janet Enever, Department of Language studies, Umeå University

What?

"research in which the investigator collects and analyzes data, integrates the findings, and draws inferences using both qualitative and quantitative approaches or methods in a single study or a program of inquiry"

(Tashakkori & Creswell, 2007: 4)

Why?

- Overcome weaknesses of quantitative and qualitative methodologies

- Reaction to debates (late 80s) about the acceptability of combining qualitative and quantitative approaches to research, particularly in the social sciences

- Debate about paradigms

(See Gheitasi and Lindgren, 2015 for an overview)

Paradigms, worldviews

Positivism: quantitative

- knowledge should be based on facts that are observable by our senses
- Quantifiable data about e.g. People
- E.g. tests, designed tasks, questionnaires or national registers
- statistical analyses

Constructivism: qualitative

- social phenomena and their meanings are constructed by the people who use them
- enquiry-based approach; explore, understand and discover why …
- E.g. written documents, transcriptions of interviews or observations, or visual (video recordings or photos)
- description and thematic interpretation.

Paradigms, worldviews: weaknesses

Positivism

- Weak in finding subjective variety (Dörney, 2007)
- Limited exploratory capacity
- Fail to explain reasons behind observations

Constructivism/relativism

- Lack of real means of assessment
- Personal interpretation
- Researcher's personal bias

Paradigms, worldviews: pragmatism

"Pragmatism is a philosophical movement that includes those who claim that an ideology or proposition is true if it works satisfactorily, that the meaning of a proposition is to be found in the practical consequences of accepting it, and that unpractical ideas are to be rejected"

(McDermid http://www.iep.utm.edu/pragmati/)

Mixed methods

"whatever philosophical and/or methodological approach works for the particular research problem under study"

(Tashakkori & Teddlie, 1998; 5)

Mixed methods: advantages

- Increase validity
  - Triangulation
  - Complementarity provides a deeper understanding
  - Development of study: interview to develop questionnarie

- Increase depth and scope
  - pursue the discovery of paradox and contradiction,
  - assess different elements within the same study

(Greene, Caracelli and Graham, 1989)

Mixed methods: critique

- Paradigms are incompatibe
- Use of different paradigms possible, but should be acknowledged individually
- It's not new at all

How?

- Two types of research questions (with qualitative and quantitative approaches)
- The manner in which the research questions are developed (participatory vs. Preplanned)
- Two types of data collection procedures (e.g., focus groups and surveys)
- Two types of data (e.g., numerical and textual)
- Two types of data analysis (statistical and thematic)
- Two types of conclusions (emic and etic)

(selection from Tashakkori & Creswell, 2007: 4)

How?

- Merged
  - Fully integrate two data sets during analysis or interpretation/discussion
  - Triangulation: compare and contrast
- Connected
  - Link one type of data to the result of the other
  - Explanatory: explain quantitative findings
  - Exploratory: when there is little research
- Embedded
  - "one type of data within the context of a design based on the other data type"
  - Address different aspects, eg. result and process

(Creswell & Plano Clark, 2007; Plano Clark et al 2008: 1557)

To illustrate this

Plano-Clark, Vicki; Huddleston-Casas, Catherine; Churchill, Susan; O'Neil Green, Denise; and Garrett, Amanda, "Mixed Methods Approaches in Family Science Research" (2008). *Educational Psychology Papers and Publications. Paper 81*. http://digitalcommons.unl.edu/edpsychpapers/81

How would you investigate this?

- What contextual factors (e.g. parents education, schooling) affect the achievement of language skills?

- To what extent do language skills of one generation reflect positively on the motivation for languages in subsequent generations?

- Are there any relationships between certain languages or language combinations and future life chances (job, salary etc)?

What doors can languages open?

- Socio-cultural framework
- Register data including 9,500,000 people, Swedish population
  - Longitudinal (40 years): bio-data, occupation, education, salary, relations, geographic data, grades
  - Statistical micro-simulation modelling
- Interviews
  - Language life histories, daily experiences of language use
  - perception of usefulness of the languages, the role of language use in the company and for company business

Mixing 1

- Two types of research questions (with qualitative and quantitative approaches)
- Two types of data collection procedures (register and interviews)
- Two types of data (numerical and textual)
- Two types of data analysis (statistical and thematic)

(from Tashakkori & Creswell, 2007)

Mixing 2

- Concurrent mixing
  - Triangulation QUANT ➜Interpretation⬅QUANT
- Sequential mixing
  - Explanatory: QUANT ➜QUAL ➜Interpretation
  - Exploratory: QUALT➜ QUANT ➜Interpretation

(Creswell & Plano Clark, 2007)

Reflections on MM

- Embracing complexity, cf. Chaos, dynamic system, rhizomatic analysis etc
- Paradigms, theories and methods

Interventions

What, why & how?

With acknowledgement to my colleagues Ulla Damber, Asbjørg Westum and Ingela Valfridsson, Department of Language Studies, Umeå University; Pär Sehlström and Carin Tafvelin, Luspengymnasiet, Storuman; Gert Rijlaarsdam, Amsterdam University

Intervention

- **Intervene:** To come in or between so as to affect, modify, or prevent a result, action, etc. (OED)

- **Intervention**: The action of intervening, 'stepping in', or interfering in any affair, so as to affect its course or issue. (OED)

What?

- Teachers do it all the time
    1. Identify a problem
    2. Try a solution
    3. Evaluate the results
- Structured development
    - Clear plan
    - Thorough documentation
    - Thorough evaluation
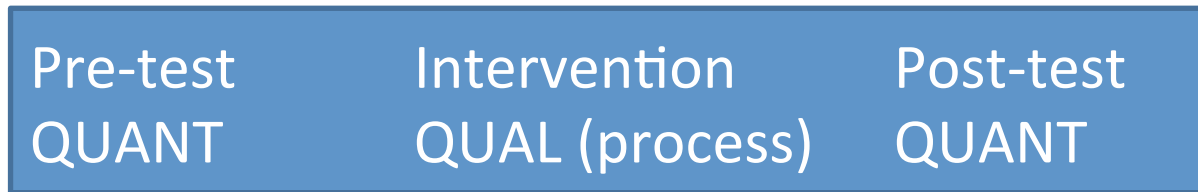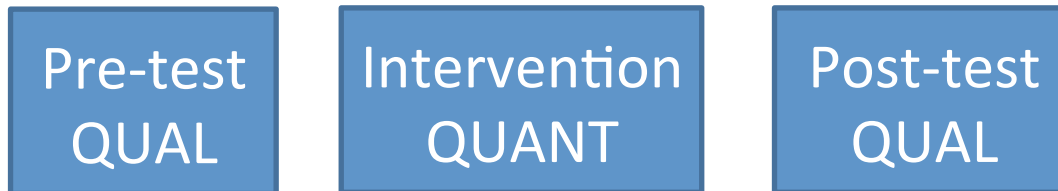- An umbrella for many similar methods

How?

- Experiment
  - Control groups
  - Pre and post measures
  - Statistical analysis
- Qualitative methods
  - Observation before, during and after
  - Interviews
- Mixed methods

How? MM interventions

- Embedded designs

Pre-test QUANT	Intervention QUAL (process)	Post-test QUANT

- Sequential designs

Pre-test QUAL	Intervention QUANT	Post-test QUAL

(Creswell & Plano Clark, 2007)

How? An example

- Participation and predevelopment
- Discuss together with teachers and pupils
  - What is easy and difficult with reading and writing?
  - When do you learn best?
  - What works/ doesn't work when you teach/work with literacy?
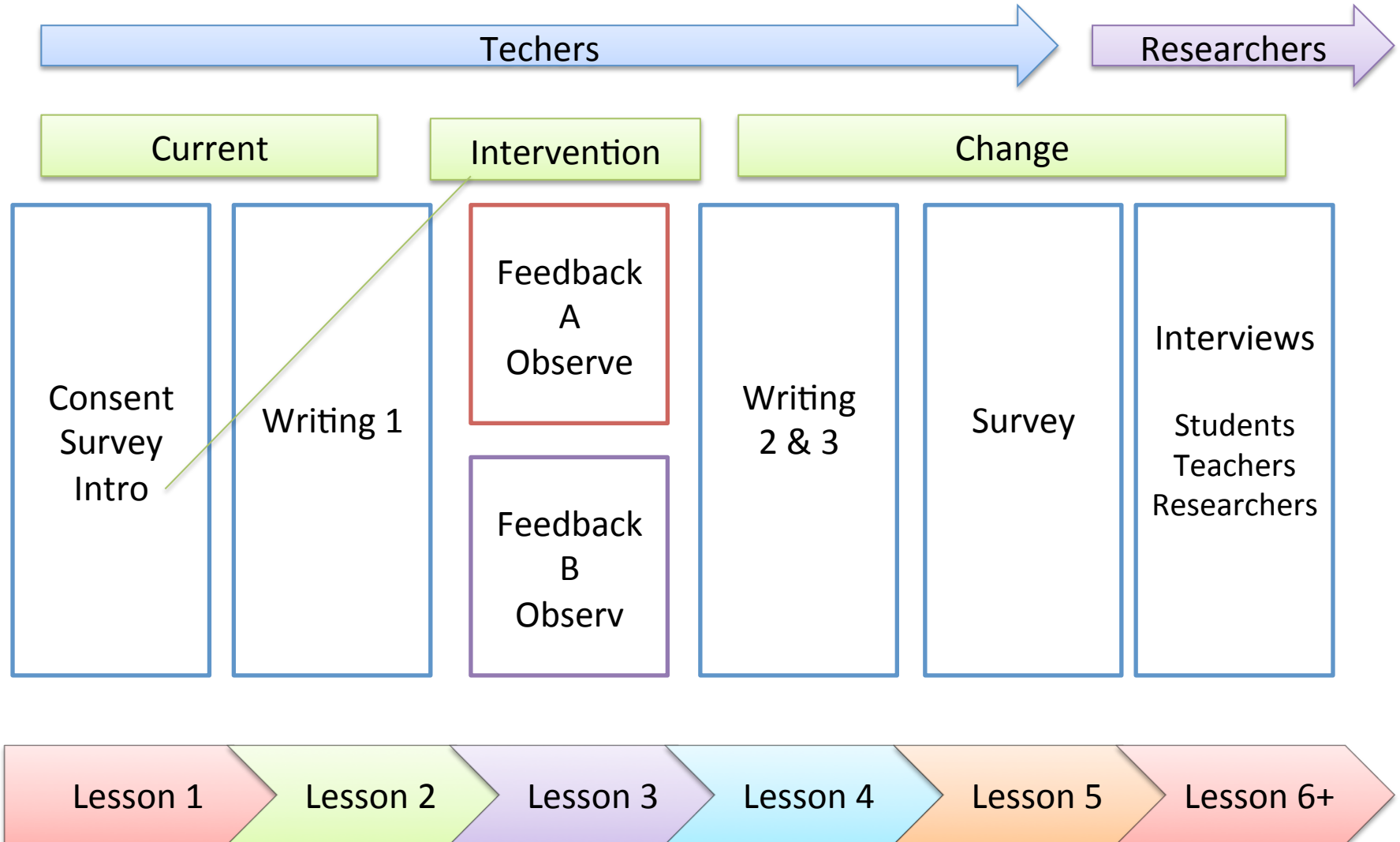- Narrowing the problem
- Defining the aims

How? Our aims

... explore how inductive and deductive models of peer-feedback can raise upper secondary student's awareness and use of connectives in English argumentative writing (QUANT/QUAL)

... explore the role of attitudes and group dynamics for the above (QUANT/QUAL)

(... explore if/how a study of this kind affect teachers and researchers)

How?
Our model: embedded

Techers

Researchers

Current

Intervention

Change

Consent
Survey
Intro

Writing 1

Feedback
A
Observe

Feedback
B
Observ

Writing
2 & 3

Survey

Interviews

Students
Teachers
Researchers

Lesson 1

Lesson 2

Lesson 3

Lesson 4

Lesson 5

Lesson 6+

How?
Our model: embedded

INTERPRETATION

Current	Intervention	Change
Survey, attitudes QUANT	Process QUAL (obs)	Survey, attitudes QUANT QUAL (int)
Texts QUAL QUANT	Group dynamics QUAL (obs, int)	Texts QUAL QUANT

How? Our intervention and MM

- two types of research questions
- the manner in which the research questions are developed (only participatory)
- two types of data collection procedures (writing, onservation, interviews and surveys)
- two types of data (numerical and textual)
- two types of data analysis (statistical and thematic)
- two types of conclusions (emic and etic)

(cf. Tashakkori & Creswell, 2007: 4)

Why? Discuss!

Why do interventions?

Why not do interventions?

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Further reading, interventions

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