



Mixed Methods Research Designs

International Conference for students in Nursing Ph.D. study programmes

12 April 2019

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Something about us



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University of Eastern Finland, Kuopio



Finland

Population: 5,4 million, life expectancy men 76.5 and women 83.2

Capital: Helsinki, population 564 000

Surface area: 338 000 km², population density 18 inhabitants/ km²

Official languages: Finnish (90%) and Swedish (6%);
the Sami (Lappish) language in the Sami domicile area in Lapland

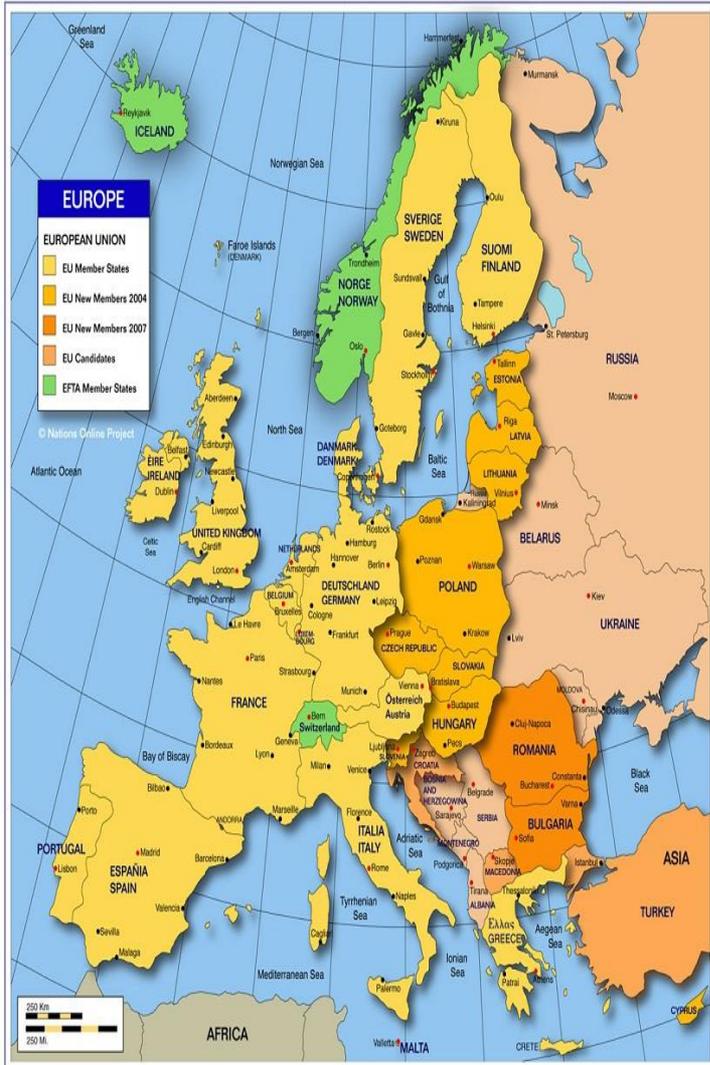
Religion: Evangelical Lutheran 78%, Orthodox 1%, others

Major sectors of the economy (% of GDP): services 60%, manufacturing industry and construction 35%, agriculture and forestry 5%

Main trading partners: Germany, Sweden, United Kingdom, Russia, USA, China

GDP per capita: € 32 100 (2009)

Proportion of people with post-basic education in the total population: 78 %





Aims of workshop:

- Provide a brief overview of the historical perspective
- Define what Mixed Method Research is
- Consider the rationale for Mixed methods
- Explore the advantages, limitations and challenges

Historical perspective- the development of the use of research methods

- 1950-quantitative research methods
- 1975-qualitative methods expansion
- 1990-2000 –use of both jointly, evaluation research, Mixed Methods (MM) paradigm
- MM used in research since 1960
- Gained popularity during recent years
- Can expand the impact and flexibility of research design
- Third research paradigm



Historical perspective (continued)

- 1959- Fiske & Campbell: gave reasons why to combine methods
- 1970- Norman Denzin: Triangulation
- 1998, 2003 - Textbooks by Cresswell & Plano Clark, Teddlie & Tashakkori: *“Mixed methods has evolved to the point where it is a separate methodological orientation with its own worldview, vocabulary and techniques”*
- 2006- Journal of Research in Nursing; Special issue/Bishop
- 2007- Journal of Mixed Methods Research
- 2008- Plano Clark, V. & Creswell, J.W. *The mixed Method Reader*



Bryman (2006)

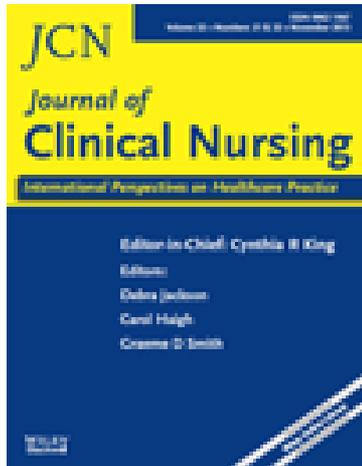
Interviewed 20 researchers on MM research and concluded:

- Type of research questions has not been identified;
- Little prescriptive writing on doing MM research;
- Could not give examples of MM research.

Journals: JAN and J of Clin Nurs 2013



- JAN: only one article stating MMR out of 16 articles available online 15th September 2013
- J of Clinical Nursing: two articles stating MMR out of 27 in August 2013 (vol 22, issue 15-16)



Definition of MM Research



- Mixed methods research: the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study
- Philosophically third research movement, a movement that **moves past the paradigm wars** by offering a practical alternative



***What is your
experience in
Mixed Method
Research?***

Definitions

Research designs using qualitative and quantitative data collection and analysis techniques in either parallel or sequential phases.

(Tashakkori & Teddlie 2003, p.11)

Research in which the investigator collects and analyses data, integrates the findings, and draws inferences using both qualitative and quantitative approaches or methods in a single study or a programme of inquiry.

(Tashakkori & Creswell, 2007: p.4)

Mixed method program

- A plan for a scientifically rigorous **research program** comprised of a series of related qual. or quant. research projects over time.
- Research projects over time, driven by the theoretical thrust of the program.



John Carnagi, Evalblog (2012)

- “A mixed-methods evaluation is one that establishes in advance a design that explicitly lays out a thoughtful, strategic integration of qualitative and quantitative methods to accomplish a critical purpose that either qualitative or quantitative methods alone could not”

MM Research



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- Is both a methodology and a method
- As methodology it has philosophical assumptions guiding the research process (pragmatism)
- As a method, it involves collecting, analyzing and mixing both quantitative and qualitative data in a single study.

Related terms



- Mixed methods
- Mixed methods research
- **Mixed research**
- Blended research
- Integrative research
- Multiple methods
- Triangulated studies



The limitations of single methods

RESEARCH CHALLENGES IN NURSING

Scientific challenge - Complexity science

- Reframes our view of many systems only partially understood by traditional scientific insights
- Many health care experts frustrated with traditional clinical and organizational interventions that do not seem to work
- Holds options for new interventions



Challenges in Health Care

More emphasis on:

- Prevention and health promotion.
- Coordination and management of care.
- Inter-disciplinary collaboration.
- Expanding the boundaries of nursing practice.
- Cost of health care

Nursing Research and Global Health Challenges



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- Care Coordination; care of the elderly, care of the chronically ill.
- Health promotion and risk prevention.
- Symptom assessment and management.
- Improving patient / client outcomes through strengthening & restructuring health care environments.
- Impacting health care policy.

The result of increasing life expectancy on *population prevalence of illness...* (Oliver, 2012)

- People now either survive with ***one or more long-term conditions*** (often requiring multiple medications);
- Live long enough to develop ***conditions of ageing***
 - E.g. ***dementia (800,000)***, osteoporosis, cataracts etc.
- Live long enough to become ***frail***;
- Live long enough to develop ***functional, sensory or cognitive impairment***;
- And potentially ***disabled or dependent*** to some degree;
- So reliant on formal or informal care or ***multiple services***.

Challenges in Health and Social Care Provision



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- Maintaining standards of care;
- Meeting demands of population;
- Need for cost effectiveness;
- Reduction in length of stay in hospital;
- Need for integration of care services;
- Rapid social change
- Skilled workforce- Fit for Purpose



Mantzoukas (2009)

Int J of Nurs Studies

- A summary of the types of studies reported in the top 10 general scientific nursing journals between the years 2000 and 2006.
- Studies descriptive (both qualitative and quantitative studies), and very few reported outcomes in terms of the impact of nursing interventions on patients;
- Descriptive studies are considered to provide evidence for practice need to be developed;
- Researchers need to reflect on what we contribute to practice.

Philosophical debates Paradigms have



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- Set of assumptions concerning reality (ontology)
- Knowledge of that reality (epistemology)
- Particular ways of knowing the reality (methodology)

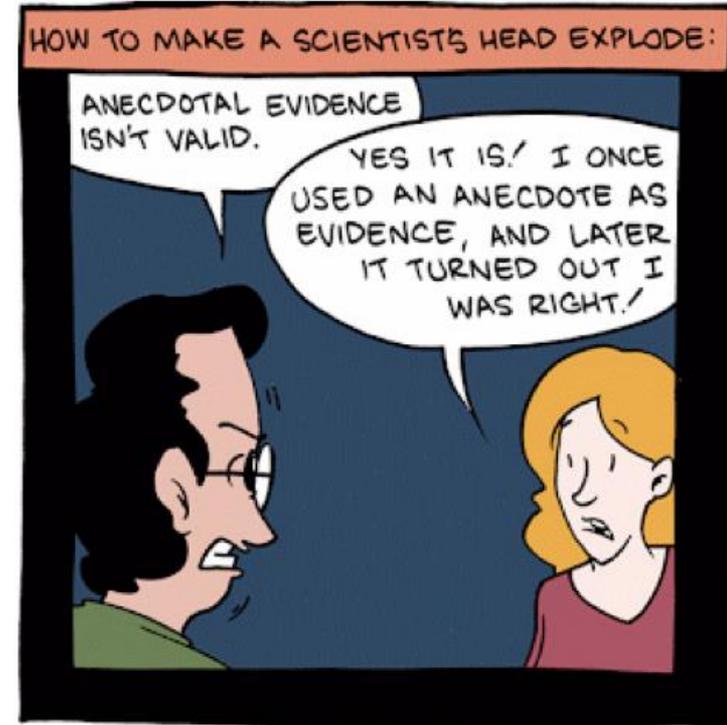


Debates around MM Research

- Philosophical debates
- Planning, Designs and Reporting
- Examples

Philosophical debates

- Purists: No way to mix two different world views!
- Methodology – thinking tool, the world view or paradigm that influences how you present research questions, following with methods.
- Pragmatism – the answer.



Research Methodology (Morgan, 2007)

	QUAL RES	QUANT RES	PRAGMATIC
THEORY-DATA	INDUCTION	DEDUCTION	ABDUCTION
RELATIONSHIP TO RES. PROCESS	SUBJECTIVITY	OBJECTIVITY	INTERSUBJECTIVITY
INFERENCE	CONTEXT	GENERALITY	TRANSFERABILITY FROM DATA

Debate on designs: Different views in research

- Micro level understanding (subjective interpretations and perspectives of individuals)
- Macro level (larger scale patterns and trends and seek structural explanations)

Scope of the Science

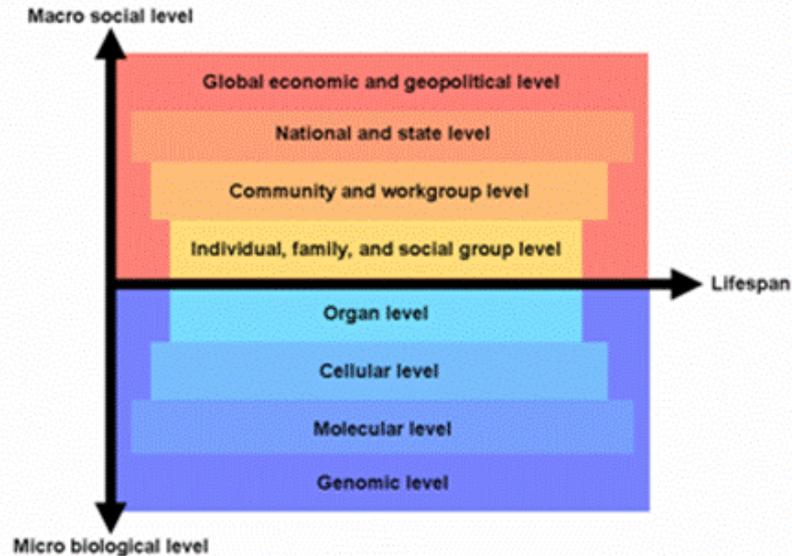
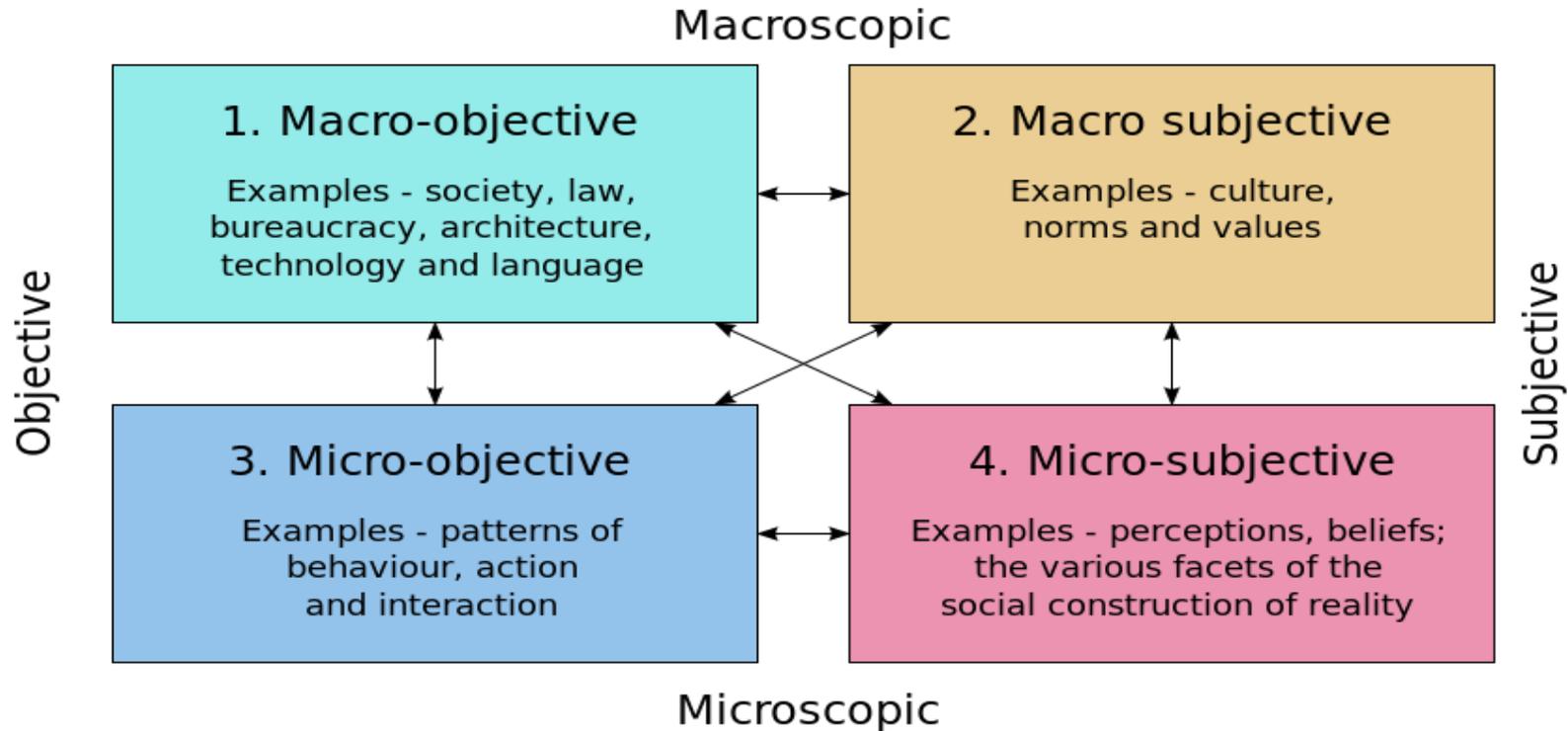


Figure 1. Health as a continuum between biological and social factors across the lifespan. (Adapted from Glass & McAtee, 2006).

Micro vs Macro level of research

Ritzer's integrative (micro-macro) theory of social analysis.



Reasons for choosing MM rather than traditional designs



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- Research purpose
- Research expertise
- Resources
- Stakeholder priorities
- Dissemination



MMR is useful, if the problem

(Creswell & Plano Clark 2006, 2018)

Requires a combination of Qualitative & Quantitative data to provide an adequate answer.

A secondary form of data is needed within a design.

Quantitative results need to be explained with qualitative data.

An initial qualitative investigation is required to inform the development of a quantitative study.

When planning MMR- the researcher should ask



- In what **sequence** will qualitative and quantitative data collection be implemented?
- What **priority** will be given to qualitative and quantitative data collection and analysis?
- At what stage will the qualitative and quantitative data be **integrated**?
- Will an **overall theoretical perspective** be used to guide the study?

Mixed method matrix

Mixed method research design are shown in the four cells

Paradigm
Emphasis
Decision

	Concurrent	Sequential
Equal status	QUAL + QUAN	QUAL -> QUAN QUAN -> QUAL
Dominant status	QUAL + quan QUAN + qual	QUAL -> quan qual -> QUAN QUAN -> qual quan -> QUAL

Types of MM designs

- Exploratory sequential
- Explanatory sequential
- Concurrent/parallel

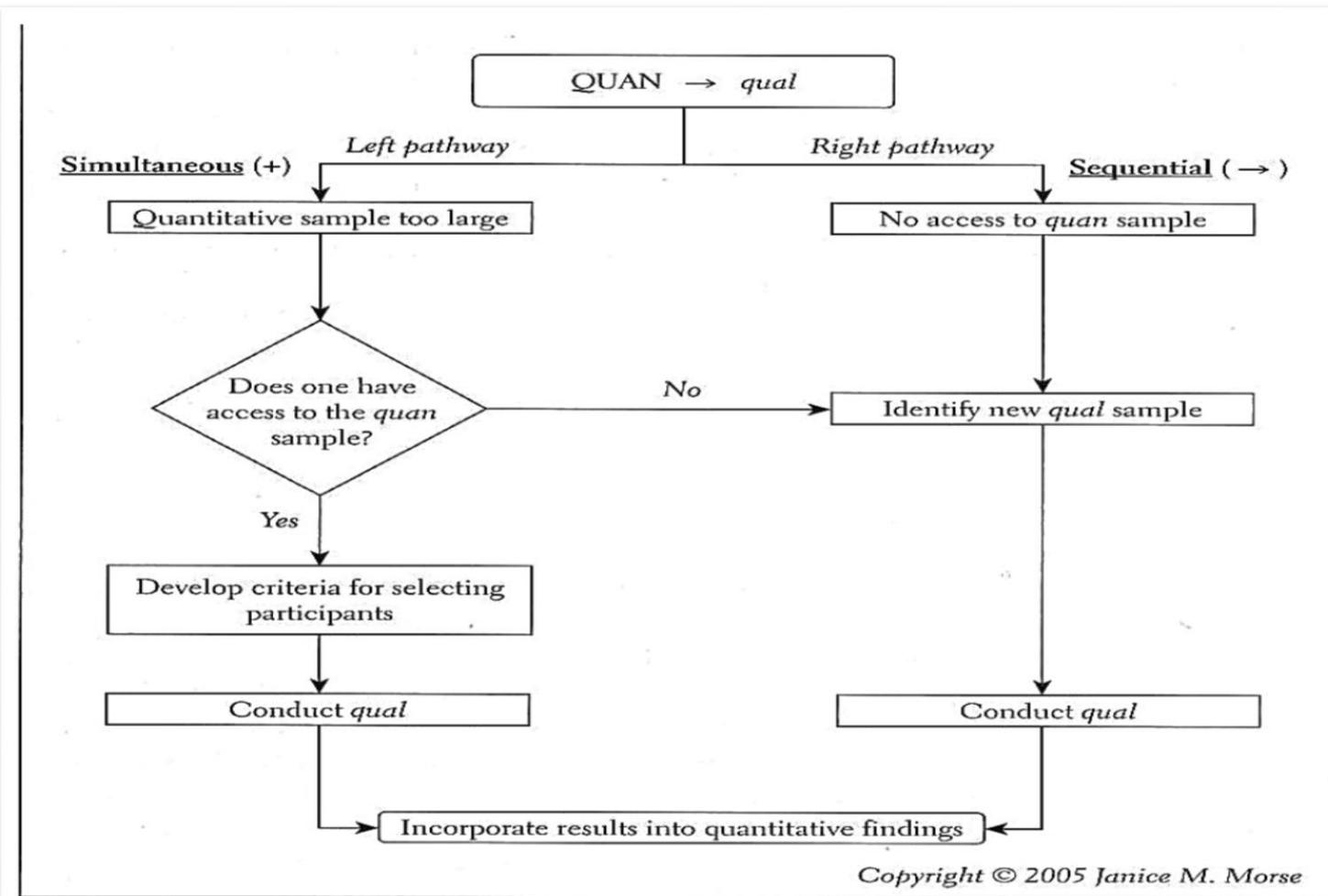
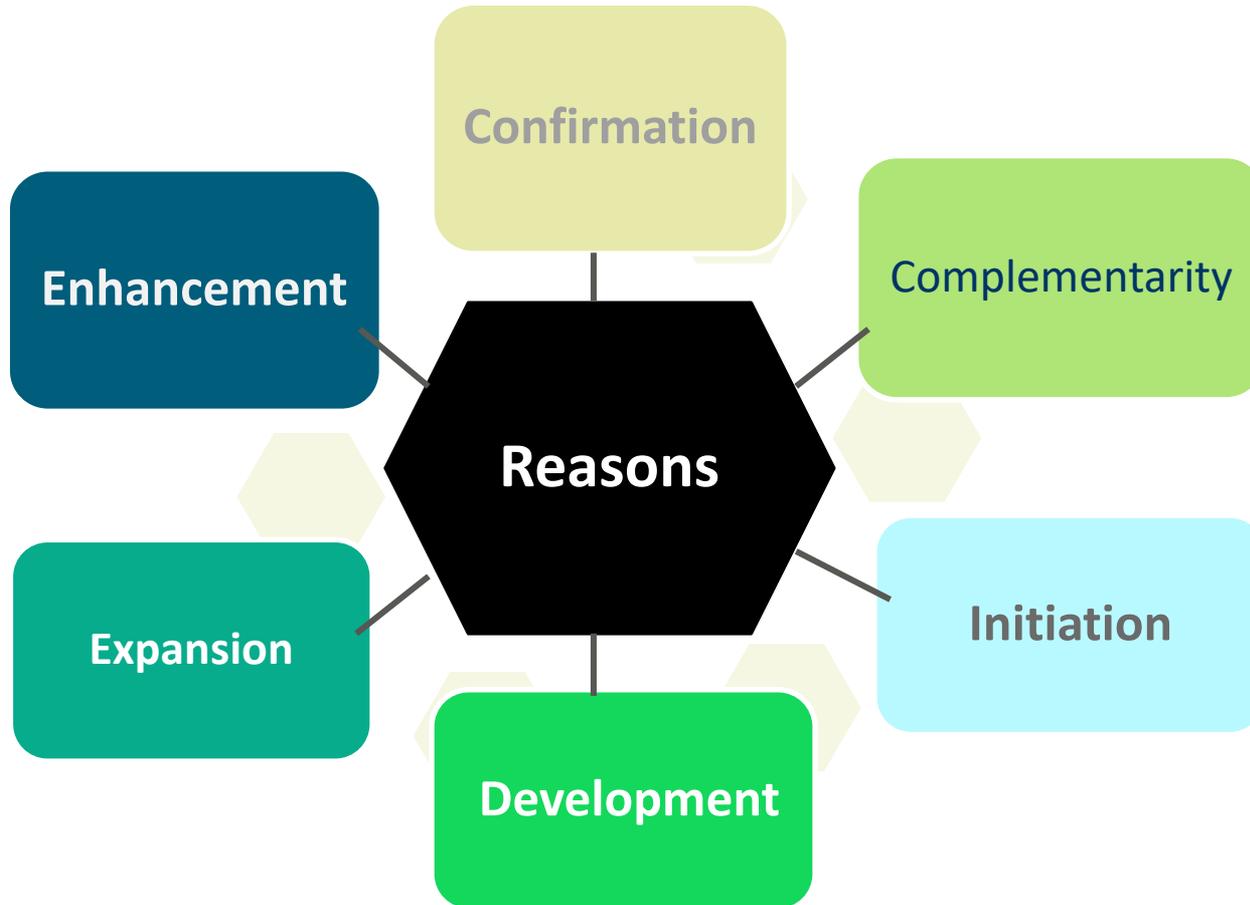


FIGURE 25-3 QUAN-qual Mixed-Method Designs.

Reasons for using MM design





Reasons: purpose

- The research purpose and questions require a combination of qualitative and quantitative.
- Research questions can be formulated to either provide testable results (quantitative) or to describe a phenomena of interest (qual) but individually they do not address the primary purpose of the study
- There is insufficient information available in the literature, a need for exploratory study
- **Not to add something to a poor study**



Research expertise - teamwork

- The researcher: competent in both qualitative and quantitative research methods
- A team that has expertise in qualitative and quantitative research methods and how to combine them for mixed methods research
- A team willing to work together – good collaboration

Example



- Kuopio ALSOVA study is a **five year prospective**, controlled randomized AD rehabilitation study. Altogether 241 person with mild AD and caregivers dyad were recruited and randomized in one of two groups.
- **Intervention** group received psycho-educational rehabilitation as intervention during two first years, altogether 16 days.
- The **control** group received the usual care.
- Both groups were followed up annually. Family caregivers wrote diaries in which they described their subjective feelings about early stage caring.



Alsova

- A RCT study which is conducted by the unit of Neurology, School of Clinical Medicine, Department of Nursing, Department of Health and Social Management in co-operation with research and rehabilitation centre Neuron, Social Insurance Institute of Finland (Kela) and Alzheimer Society of Finland during 2002 – 2011



Family caregiving in Alsova

- Family caregiving is a **complex phenomena and range of perspectives are required**
- **Instruments, physiological measurements; diaries and interviews**

Resources

- Funding available to conduct a multiphase, multi-method study



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Stakeholder priorities

- Policymakers want detailed coverage of the problem including the extent (quantitative) and nature (qualitative) of a problem and how they are interrelated



References /team work

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Dissemination

- Journals accept MMR research papers

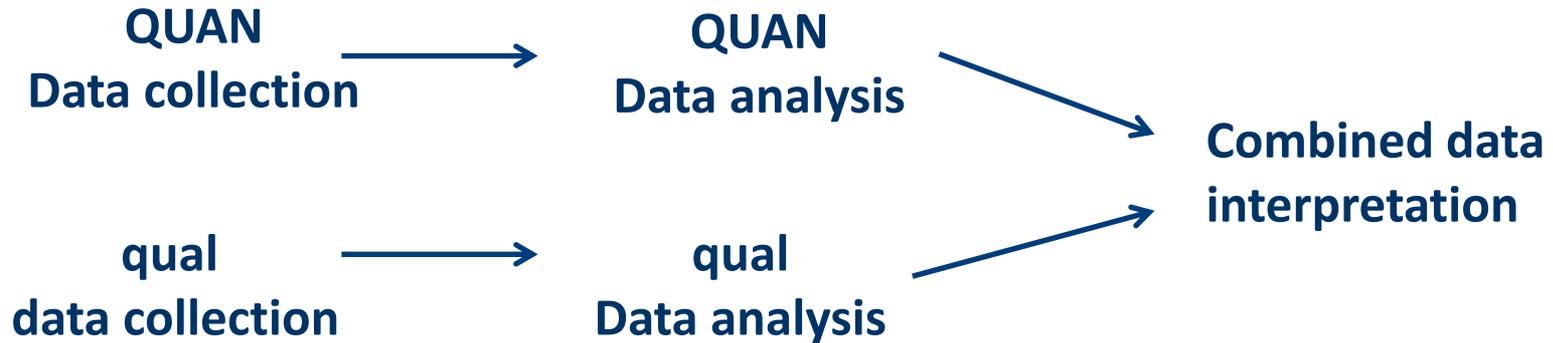
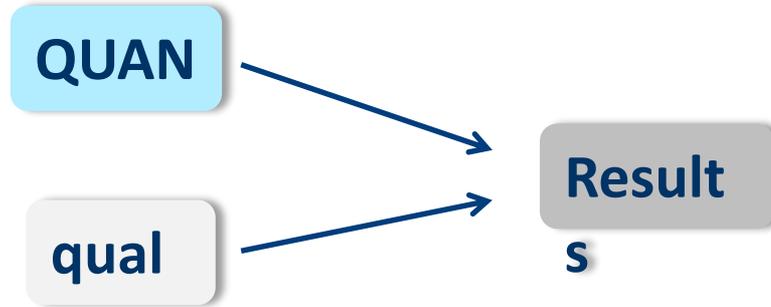
Challenges:

- a lack of templates
- ordering the presentation
- style and language
- different audience
- journal word limits





An example from UK



Mobility in the older population- UK study

Table 1 Study components

Study component	Research questions addressed
Focus Groups (A)	<ol style="list-style-type: none">1. What are the key mobility problems for older people that have an impact on quality of life?2. What key mobility problems are perceived by informal carers of older people to have an impact on the quality of life of older people?3. What are the perceptions of older people and informal carers towards assistive mobility aids for older people?
Biomechanical Testing (B)	<ol style="list-style-type: none">1. What are the key mobility problems for older people that have an impact on quality of life?
Focus Groups (C)	<ol style="list-style-type: none">4. What are the views of older people and carers towards the prototype assistive devices?

Mobility in the older population- UK study

Kinematic and temporal-spatial parameters will be tracked using a ProReflex motion capture system.

Participants will be asked to complete a SF-36 Health Survey (Ware, Kosinski et al. 2007) and a mobility questionnaire before the focus group discussion.



User Involvement



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Ethics and Rigour

Ethics

- Some additional issues when seeking approvals from Ethics Committees
- One application or separate
- The value of MMR in answering the question

Rigour

- Quant: Validity and Reliability
- Qual: Trustworthiness, Credibility, confirmability, transferability



Strengths of MMR

- Words, pictures etc. can be used to add meaning to numbers
- Numbers can be used to add precision to words, pictures and narratives
- Researchers can generate and test a grounded theory
- Can answer a broader and more complete range of research questions because the researcher is not confined to a single method or approach



Strengths

- Use of the strengths of an additional method to overcome the weakness in another method by using both
- Can provide stronger evidence for a conclusion
- Can add understanding what might be missed by using single methods
- Can be used to increase the generalisability of the results
- Combination of qual. and quant. research can produce more complete knowledge needed to inform theory and practice



Limitations

- May be difficult for a single researcher to carry out both qualitative and quantitative research, if used concurrently, it may require a research team.
- Researcher need to learn about multiple methods and understand how to mix them appropriately
- Critics from methodological purists! – never mix!



Limitations

- More expensive and time consuming
- Some details may be challenging (problems with paradigm mixing, how to qualitatively analyze quantitative data, how to interpret conflicting results)



Tricks (Morse, 2012)

- Always know and work with your theoretical drive; always know the purpose
- Always do an armchair walkthrough
- Always diagram / make a map to help in writing



Conclusions

- MM Research have different definitions
- Pragmatic approach to research
- Choose your approach and define it clearly
- Bare the uncertainty and critics
- MM Research has its strengths and limitations

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Thank you for listening!
Kiitokset kaikille kuulijoille !

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Thank you!



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