Quality Indicators of Rigor in Qualitative Methods

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Alignment

✓ World view
✓ Research Questions
✓ Research Design
✓ Data Collection/Data Gathering
✓ Data Analysis
Research Questions

✓ Purpose statement is clear and precise outlining the intent of the study

✓ Clear research questions that align with the world view and theory used as the lens for the study
Methods

✓ Design
✓ Researcher subjectivity/Reflexivity
✓ Context/setting
✓ Participants
✓ Data Collection
✓ Data Analysis
✓ Trustworthiness
Design

✓ Interpretive
✓ Symbolic interactionism
✓ Ethnography
✓ Phenomenology
✓ Case study
✓ Auto-ethnography
✓ Grounded theory
Reflexivity

✓ Ways that research is shaped by the particular perspectives, interests, and biography of the researcher.

✓ Reflect on how own biography and assumptions influence the entire research process

✓ Important to state this for the reader – help them to understand where you are coming from and what assumptions, experience, or influence you bring to the study
Context

✓ Detailed description of where the study took place. Help the reader understand the nature of the environment.

✓ Country, geographic region, Urban, suburban, rural

✓ Location – e.g. school, childcare, youth sport

✓ Other relevant information such as socio-cultural factors
Methods

Participants

✓ Detailed description of participants
  ✓ age, gender, ethnicity, income level, sports experience, home environment etc

✓ Description of characteristics relevant to study

Sampling

✓ What sampling procedures are used in the study
  ✓ Purposeful, case study, snowball, etc.
Data Collection

✔ What are the data collection tools?
✔ Do they align with the researchers’ world view, research design, research questions?
✔ Discussed in sufficient detail to fully understand what happened, with whom, and when in terms of data collection
✔ Describe each data collection method in detail
  ✔ How conducted
  ✔ When collected
  ✔ Who
Data Analysis

✓ Aligned with world view, theory, research design
Trustworthiness

✓ Credibility
✓ Transferability
✓ Dependability
✓ Confrimability
Credibility (internal validity in Quantitative terms)
- Data collection methods described in detail
- Entre and time at site—includes prior to the study
- Triangulation of data - how established
- Rapport with participants allows for honest answers
- Negative case analysis or disconfirming evidence
- Peer debriefing
- Member checking – transcripts and analysis
- Researcher’s reflexivity –
- Researcher subjectivity
Trustworthiness

✓ Transferability (external validity/generalization)
  ✓ Thick rich description of
    ✓ Context,
    ✓ Setting,
    ✓ Participants,
    ✓ Data collection methods,
    ✓ Timeline,
    ✓ Interpretations
    ✓ Data excerpts
Trustworthiness

✓ Dependability (reliability)
  ✓ Research design and implementation – in detail what you did and when
  ✓ Data gathering – what you did and when to collect the data
  ✓ Reflective appraisal of study
Trustworthiness

✓ Confirmability (objectivity)
✓ Triangulation
✓ Researcher subjectivity/reflexivity
✓ Audit trail – trace the course of the research step by step – data collection, analysis, process, timeline etc
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Essential & Desirable Indicators of Research

 ✓ Determine quality research by identifying essential & desirable indicators.
   ✓ Gersten, Fuchs, Compton, Coyne, Greenwood, & Innocenti, 2005

 ✓ An assessment device designed to determine if an article is scientifically rigorous
   ✓ Study Design & Implementation Assessment Device (DIAD, Valentine & Cooper, 2003)
Research Questions

✓ Purpose statement is clear and precise outlining the intent of the study

✓ RQs are precisely stated including variables and outcomes and participants
  ✓ Directional – specify the perceived outcome of the study
  ✓ Non-direction – suggest a relationship but don’t specify a direction
Methods

✓ Context
✓ Participants
  ✓ Ethics
✓ Design
✓ Dependent variable
✓ Instrumentation

✓ Independent variable (Intervention)
✓ Procedures
✓ Data Analysis
Context

✓ Detailed description of where the study took place. Help the reader understand the nature of the environment.

✓ Country, geographic region, Urban, suburban, rural

✓ Location – e.g. school, childcare, youth sport

✓ Other relevant information such as socio-cultural factors
Context: Large Urban Midwestern City in USA

- 99% single parent families
- Low income & disadvantaged community
  - Mean combined family income $16,000
  - 99% free & reduced lunch
- High rates of crime
- 1 park - unsafe with gangs and drug deals in the park, lots of broken glass
- All rental accommodation, with no gardens
- Sidewalks have glass & debris
- No recreation facilities within 3 miles
# Methods

## Participants

- Detailed description of participants *(age, gender, ethnicity, income level, sports experience, home environment etc)*
- Link participant characteristics to literature definitions & prove participants meet them.
- Description of characteristics relevant to intervention
- Description of teachers who teach intervention

## Sampling

- Appropriate procedures to ensure participants are comparable across conditions:
  - Random assignment
  - Random assignment of group to condition
  - Matched pairs
  - Purposeful sampling
- Appropriate procedures to ensure interveners are comparable across conditions.
Ethics with Participants

- **Informed consent**
  - Adults can consent – over 18 years

- **Parental permission**
  - Parents must consent to a child’s participation

- **Child Assent**
  - Child agrees to participate in study

- **Support letter from site**
  - Must get approval from the site you are working in

- Review of the study procedures by faculty on an Ethics Board
  - You cannot start a study until you have an approved protocol

- Cannot change your methods without approval

- Must keep all consent documents for 3 years
Design of the Study

✓ Specify the design of the study
  ✓ Descriptive
  ✓ Correlational designs
  ✓ Quasi-experimental designs
  ✓ Experimental designs

Dependent Variables (DV)

✓ Operationalize (define) what you mean by your DVs. E.g. “Motor Competence” is a child’s ability to demonstrate fundamental motor skills with critical elements of form.
Dependent Variables (DV)

- DV was operationalized clearly e.g. “motor competence”

- Explain how the instrument selected actually measures the DV in the study (consider all options of instruments)

- Description of instrument
  - Internal consistency (Cronbach’s alpha)
  - Range of scores
  - Reliability & Validity

- Multiple measures of the DV if possible

- Training of testers

- Inter-observer agreement (IOA)
  - Inter – between
  - Intra – within
  - Blind coders to condition

- Multiple time frames of testing pretest-posttest
  - Add a retention test
### Test of Gross Motor Development 2

#### Locomotor Subscale
- 6 skills: Run, Gallop, Hop, Leap, Jump, Slide
- Raw score - 0-48 points
- Standard score based on age
- Percentile rank for age & gender

#### Object Control Subscale
- 6 skills: Throw, Bounce, Strike, Catch, Kick, Roll
- Raw score 0-48 points
- Standard score & percentile rank based on age & gender

#### Gross Motor Quotient (overall motor skills)
- All skills videotaped & coded from videotape
- Coders trained prior to coding & blind to group
- Inter-rater reliability - reliability between 2 independent raters
- Intra-rater reliability – reliability across time

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*Ulrich, 2000*
Independent Variable Intervention

✓ Theoretical origins of intervention
✓ How theory drives decisions in designing intervention
✓ Detailed description of intervention - replication
  ✓ Content
  ✓ DOSE - amount
  ✓ Teacher language, behaviour
  ✓ Student behaviour
  ✓ Attendance/attrition rates
✓ Describe how child moves through an intervention session
✓ Intervention fidelity – did the intervention get implemented as intended
  ✓ Document fidelity
✓ Detailed description of comparison conditions
Procedures

✔ Outline the procedures of the study in detail for replication

✔ In complex studies it is helpful to break the study into phases:
  ✔ Phase 1 – Teacher Training on intervention
  ✔ Phase 2 – Pretest >>> Intervention>>>Posttest
  ✔ Phase 3 – Retention test

✔ Have someone who knows nothing about your study read the procedures and see if they can explain your study to you
Data Analysis & Results

- Data analysis ties to research questions in sequential order
- Explains sample size and statistical power at the appropriate unit of analysis (individual, class)
- Unit of analysis may change with RQ
- Underlying assumptions for statistical tests documented e.g. normally distributed
- Account for variability in data via sampling or design
- In intervention research include effect sizes
- Don’t duplicate data e.g. data in table & figure & text
- Results presented in sequential order tied to RQs
Research Design Checklist

- Type of research
- Articulation with Theoretical lens
- Setting of study
- Participants of study
- Dependent/independent variables; focus topics
- Research instrumentation or types of data
- Procedures
- Basic timeline
- Ethical issues??
Challenge: Wednesday 23rd

- In a series of post-its or on your whiteboard, each member of your group must state:
  - Hot topic
  - Literature: Top 2-3 articles
  - Theoretical Perspective & Overview paragraph
  - Research Qs/Hypotheses/statements
  - Chosen research design & methods
RIGOR: Alignment, Detail, Replication