Mixed Methods Assessment: The Odd Couple, or a Match Made in Heaven?
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Felix Ungar
• Neat freak
• Hypochondriac
• Neurotic
• Finds purpose pointing out others’ mistakes

Oscar Madison
• Slovenly (has more important things to do than clean)
• Careless spending
• Enjoys life

They have habits and styles that are opposed to each other!
Can they survive together?
**Quantitative research**
- "description of trends or an explanation of relationships between variables" (Creswell, 2002)
- Numbers
- Statistical analysis
- Usually large number of participants
- Random sampling
- Test the truth of a hypothesis; theories guide development of hypotheses
- Develop broad generalizations
- Lab or controlled setting
- Positivist / empiricist

**Qualitative research**
- "inquiry process of understanding…[building] a complex, holistic picture" (Creswell, 1998)
- Text, words
- Thematic / descriptive analysis
- Usually small number of participants but extended period of time
- Purposeful sampling
- Understanding multiple realities; theories emerge from data
- Use tentative application
- Natural setting
- Constructivist

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**But wait: why should I use (quan / qual / mixed) methods? Aren’t (qual / quan / mixed) methods better for assessment?**

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**Why consider mixed methods?**
- Higher education as a "big tent" – includes positivists, constructivists, pragmatists... no single method will provide convincing evidence to all of your constituents
- Quan / Qual suited to answer different kinds of questions – "What is the experience of being a first-generation student?" – "How much growth did students achieve in critical thinking skills?"
- You are probably already doing some mixed methods research – so you might as well understand it!
- Using research language and approaches can help improve the rigor and credibility of your assessment projects
Brief History of Mixed Methods Research

- Researchers were combining qualitative and quantitative data as early as the 1930s (Creswell, 2002)
- In the 1950s researchers were using mixed methods to develop psychological traits
- Sieber in the 1970s used mixed methods in case study methodology and Jick used a triangulation approach

“Paradigm Wars”

- In 1980s and 1990s positivists / empiricists fought with constructivists over the appropriateness of mixed methods research because of the opposing philosophical stances taken by the two sides
- In 1988 Howe rejected incompatibility and presented pragmatism as a paradigm for mixed methods research
  - “What works”: reject the goal of trying to mirror reality, instead focus on practical uses and successes
- Paradigm wars are generally considered over now (although you may still have some warriors on your campus)

Definition of Mixed Methods

“A mixed methods study involves the collection or analysis of both quantitative and / or qualitative data in a single study in which the data are collected concurrently or sequentially, are given a priority, and involve the integration of the data at one or more stages in the process of research” (Creswell, Clark, Gutmann, and Hanson, 2003)
Key Aspects

- Quan and / or Qual data collected
  - Some researchers argue that sequence and priority are not essential defining characteristics of mixed methods studies (or cannot be determined in advance)
- Integration of data at one or more stages
  - If no integration, then it is considered a “quasi-mixed study”

Discussion Checkpoint

- How many have done a mixed methods study (on purpose or accidentally)?
- Are the faculty / staff on your campus likely to accept the results from a mixed methods assessment project?

Typologies for Mixed Methods

- Many typologies for classifying types of mixed methods studies
- Teddlie and Tashakkori’s (2006) is excellent, but very complicated
- Will use Creswell’s (2003) typology for its simplicity
Data Conversion

• The simplest form of mixed methods
• Taking qual (or quan) data and converting it to quan (or qual) data for additional analysis
• Example: Taking written reflection papers and scoring them for evidence of depression
• Example: Taking college transcript and converting it into a narrative summary of the student’s experience during the time in the college
• Rubrics are an excellent example of data conversion (going from descriptive text to scores)
• Data conversion not really a “design” (which we will focus on next) but is a step that can be used outside the traditional mixed methods designs

Teddlie and Tashakkori (2006), p. 22

Figure 3: Graphic Presentation of Monotonal Conversion Design (Quasi-Mixed design)  
Teddie and Tashakkori (2006), p. 22
Explanatory Mixed Methods

- Quantitative data collection first

  QUAN  qual

- Followed by qualitative data to help 'explain' the quantitative results
- Example: Wabash study
  - Gave NSSE (and other instruments) to students (Quan)
  - Held focus groups with students to have them explain how they understood the items and to try out possible interpretations
  - Greatly changed the researchers' interpretations of results
**Assessment Use of Explanatory Mixed Methods**

- Can provide critical information to help understand the results from a quantitative tool
- Can provide reflections that add richness to the data
  - Increase of .3 standard deviations vs:
  - “I am now able to interact with clients from diverse backgrounds more easily and understand where they are coming from”
- Can be particularly helpful when findings are unexpected or surprising (checking your interpretations)

**Data mixing in Explanatory Mixed Methods**

- The benefit of the sequential design is that results from one phase can be used to inform the design of the following phase
  - Selection of participants, questions to be asked, methodological choices, etc.
  - In this way it’s NOT 2 independent studies on the same topic
- For example, administer an instrument on intercultural competence
  - Select individuals with really high scores and really low scores for follow-up interviews (“extreme case” sampling)

*Figure 5. Graphic Presentation of Sequential Mixed Design*

*Teddlie and Tashakkori (2006), p. 22*
More on Data Mixing

- What makes it a sequential mixed methods study is the mixing of data between the phases
- If no mixing then you have a quasi-mixed methods study

Exploratory Mixed Methods

- Qualitative data collection first
- Followed by quantitative data collection, often to more broadly understand the thing being studied
- Example: Want to assess the role homecoming serves in supporting teamwork and leadership development
  - Interview leaders from Greek houses to better understand the experience of leading homecoming activities; use themes to develop questionnaire to send out to all those involved in homecoming events
Assessment use of Exploratory Mixed Methods

- Can be a great way to get started if you don’t know where to start (just start talking to students and asking questions in interviews or focus groups!)
- Very useful for instrument development
  - Students can also be asked to provide feedback on an early draft of an instrument
- Interview students who left your institution; use reasons why they left to look for patterns; use these patterns to identify local student information data to create early warning for attrition risk
Transformative Mixed Methods

- Some don’t include “transformative” as a distinct design
- Theoretical perspective guides the design; may include advocacy, specific ideology, etc.
- The theoretical lens being used drives the methods
- Can use with any of the other designs (e.g. transformative explanatory design)

Timing of Data Collection

Sequential → Concurrent

- Triangulation
- Nested
- Transformation

Triangulation

Teddlie and Tashakkori (2006), p. 21

Figure 6: Graphic Presentation of Concurrent Mixed Design
Triangulation

- Essentially separate QUAL and QUAN collection and analysis and then compare results
- Often done to try to ‘make-up’ for weaknesses of one or the other types of research
- Can be difficult to implement (have to manage two different studies at the same time)
- Interpretation can be problematic

Possible Outcomes from Triangulation Study (Erzberger & Kelle, 2003)

1. Qual and Quan results converge (results lead to same conclusions)
2. Qual and Quan relate to different objects or phenomena but complement or supplement each other (this is good)
3. Results are divergent or contradictory (problematic)
   - I suggest, if doing a triangulation, to focus on goal #2: using Qual and Quan to ask different questions about a single phenomenon (nested study might be a better fit for this)

Example Triangulation Assessment

- Interview students regarding their intercultural experiences and beliefs and have them complete an instrument immediately after the interview
- Having instructors score critical thinking papers (QUAN) and provide written reflections on each paper or on the scoring experience (QUAL)
Nested Mixed Methods

- QUAN / QUAL nested within the other study
- Data collected at the same time or within the other study
- Mixing not done until analysis phase (as results are not yet available from the other phase)

Nested Mixed Methods

- Follow a first-generation student during the transition to college; ongoing interviews and observations (QUAL) with occasional questionnaires on depression and anxiety administered (quan)
- Nesting makes clear one method has the emphasis over the other and typically address different aspects or questions or at different levels (e.g., supervisors and employees)
Example Nested Assessment

- Longitudinal study on the development of leadership with questionnaire (QUAN) completed every month for 6 months; Interview at the mid-point (qual) on the experience of learning to be a leader (qual nested within QUAN)
- Can also be used with different levels (e.g., same questionnaire design with leaders, then focus groups with the students they are leading at the mid-point)

Transformative Mixed Methods

- Same as before…
  – Some don’t include “transformative” as a distinct design
  – Theoretical perspective guides the design; may include advocacy, specific ideology, etc.
  – The theoretical lens being used drives the methods
  – Can use with any of the other designs (e.g., transformative explanatory design)
Summary

• You probably have already done a mixed methods study!
  – But using the language of research and knowing more about these designs should help you improve the rigor of your future assessment mixed methods projects
• Improving the rigor of our assessment projects will make them more credible (more likely to result in action) and will help move the work of assessment to the next level

Back to the Odd Couple…

By the end of the play, although they still have their differences and they are not living together anymore, their interaction with each other helped them grow and change in important ways. They would even make several more movies together!

In the same way…

Quan and Qual methods can work very well together in the same study IF
• You understand the strengths and weaknesses of both approaches
• You use a thoughtful mixed methods design
• You take care to establish the validity and trustworthiness of your inferences
“...the gold standard should be methodological appropriateness rather than methodological orthodoxy...[this] means that designs should be judged on the extent to which they answer the inquiry question at hand, not whether they adhere to some preordain standard” (Patton, 2006, p. i).

Activity: Make it a Mixed Methods Assessment Project (and name that design)!
1. CLA exam given to freshmen and seniors on critical thinking and critical writing
2. Exit interviews performed with graduating seniors by the department head
3. Create an early alert system to identify students who are at risk of attrition
4. Want to better understand the experience of being a first-generation student at your institution
5. Assess the development of leadership skills and knowledge for students who participate in student activities and leadership programs

Discussion
• What are some challenges you see with implementing mixed methods assessment projects?
• What are some benefits you see with mixed methods assessment projects?
• Are you ready to take on a mixed methods assessment project?

References