Welcome!

While we wait for everyone to join…

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Methods to Analyze Surveys: Qualitative Data

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UNIVERSITY OF CALIFORNIA
Agriculture and Natural Resources

Desired Outcomes

- Participants will gain…
  - Understanding of types of qualitative analysis that can be done on open-ended survey data for program evaluation
  - Hands-on experience of coding qualitative data and extracting themes using Excel, and reporting the findings

Qualitative Data

Why ask open-ended questions in surveys, interviews, and focus groups?

- To explore respondents' thoughts and opinions
- To collect more context or detailed information on successes, challenges, barriers, etc.
- When you don't know what close-ended response categories to use

Best Practice vs. Practical Method

"Data Jam" Best Practice

- 2-3 day working meeting with diverse group of individuals
- Meaning making occurs through discussion and consensus
- Write up the findings together; a report is the output of the data jam
- Resource intensive

Practical Method & Today's Exercise

1. Decide on how to *code* each line or quote.
   - Pre-existing list vs. emergent list (commonly used); both
2. First and a second team member "code/index" each line of data. Apply the codes to every single line of data. (Alternative: Data Jam)
   - Codebooks and journals when appropriate
3. Compare each person's coding to ensure that you coded in the same way. Discuss discrepancies. Finalize coding.
4. Additional team members repeat steps 2 & 3.
5. Review and summarize the data that falls under each code.
6. Interpret using "thick description" (quantifying is not the essence of qualitative analysis, use sparingly)
7. Member-checking

 The more people, the more "validated" your coding.

Individual then Paired Work

1. Review end-of-session/workshop evaluation data example, Q5: "What is the greatest benefit that you have gained as a result of working on the campaign"
2. Apply *codes* individually and describe your process in the codebook tab
3. Discuss with a partner codes, resolve any discrepancies, identify themes/categories
4. Interpret one theme with “thick description”

Break - Return at 11:20

Share out - #3 and #4

1. Review end-of-session/workshop evaluation data example, Q5: "What is the greatest benefit that you have gained as a result of working on the campaign"
2. Apply *codes* individually and describe your process in the codebook tab
3. **Discuss with a partner codes, resolve any discrepancies, identify themes/categories**
4. **Interpret one theme with “thick description”**

Qualitative Findings

Introduction: What are the emerging themes. What is the most predominant theme

Theme A: Summarize with “thick description” (Zhai & Scheer, 2002) and provide quotes

Theme B: Summarize with “thick description” and provide quotes

…

Group Discussion

Any tips and best practices from your own experiences?

Questions?

We analyzed responses from 1,245 individuals who answered either one or both open-ended questions. We applied iterative inductive thematic analysis without a pre-existing coding scheme to each question independently (Braun & Clarke, 2006). We applied separate codes for each distinct idea or concept contained in the response. Specifically, to begin, we selected a representative subsample consisting of 2% of the sample based on six factors (age, gender, years volunteering, race/ethnicity, level of education, and geographic location). The first three authors independently reviewed and created low inference codes anchored to the data, i.e., initial coding (Corbin & Strauss, 2015). We came to agreement on these initial codes, code definition, relationships between codes, and application of codes to the data. When disagreements arose, we discussed until reaching consensus. We repeated this process twice more with a second and third subsample. In each iteration, the coding scheme was modified with codes added or merged. Next, we each coded a separate subsample of 80 responses, and co-coded approximately 20% of these responses from the other two coders. The final step was to code the remaining responses. Each coder also coded approximately 10% of another's block. Our process relied on intercoder agreement, including "intensive group discussion, 'dialogical intersubjectivity,' coder adjudication, and simple group consensus as an agreement goal" (Saldana, 2016, p. 37). We discussed disagreements and conflict and revised code definition; twice during the process, each coder then went back through their assigned responses to affirm code application. After every response was coded, we reviewed relationships between codes and grouped similar codes, which became our emergent themes.

Worker, Espinoza, Kok, Go, Miller (2020) - *http://jyd.pitt.edu/ojs/jyd*

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Types of Mixed Methods Design

Research Design: Qualitative, Quantitative, and Mixed Methods Approaches
John W. Creswell, J. David Creswell

PowerPoint slides by John W. Creswell

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Explanatory Sequential Mixed Methods Design

- **Description of the design**: Involves a two-phase project with the collection of quantitative data in the first phase, and qualitative data to help explain initial quantitative results.

- **Data collection**: Proceeds in two distinct phases with rigorous quantitative sampling in the first phase and purposeful sampling in the second, qualitative phase, qualitative data collection builds directly on the quantitative results.

Explanatory Sequential Mixed Methods Design

- **Data analysis**: The quantitative and qualitative databases are analyzed separately and the quantitative results are then used to plan the qualitative follow-up.

- **Interpretation**: First-phase quantitative results, second phase qualitative results and a third form of interpretation: how the qualitative findings help to explain the quantitative results.

Exploratory Sequential Mixed Methods Design

- **Description of the design**: Start with a qualitative phase first followed by a quantitative phase, for example the explanatory sequential approach, the second database builds on the results of the initial database.

- **Data collection**: Data collection occurs in two phases. The initial qualitative data followed by the second quantitative data collection. The challenge is how to use the information from the initial phase in the second phase.

Exploratory Sequential Mixed Methods Design

- **Data analysis**: Analyzes quantitative and qualitative databases separately and uses the findings from the initial exploratory database to build into quantitative measures. Requires careful attention to the qualitative data analysis steps.

- **Interpretation**: First report the qualitative finding and results, and then the quantitative results of the final phase of the study.

Convergent Parallel Mixed Methods Design

- **Description of the design**: Collects both quantitative and qualitative data, analyzes them separately, and then compares the results to see if the findings confirm or disconfirm each other.

- **Data collection**: Collect both forms of data using the same or parallel variables, constructs, or concepts.

Convergent Parallel Mixed Methods Design

- **Data analysis**: Challenge is to converge or to merge the data, the two databases are analyzed separately and then brought together. Side-by-side comparison. Start with the qualitative findings and then compare them to the quantitative, present one set of findings first and then the other.

- **Interpretation**: Written into a discussion section of the study. When there are differences in concepts, themes, or scales there is divergence.

Mixed Methods Designs Recap

- Explanatory Sequential (quant then qual)
- Exploratory Sequential (qual then quant)
- Convergent Parallel (qual + quan)

Mixed Methods Evaluation Example

Koundinya, V., Klink, J., Skluzacek, J., Barrett, C., & Chiarella, C (*in press*). Group mapping in a 4-H camp mixed methods evaluation. *Journal of Youth Development*.

Klink, J., Koundinya, V., Kies, K., Robinson, C., Rao, A., Berezowitz, C., Widhalm, M, & Prokopy, L. (2017). Enhancing interdisciplinary climate change work through comprehensive evaluation. *Climate Risk Management*, *15*, 109-125. https://doi.org/10.1016/j.crm.2016.11.003

Literature

- Every method has unique advantages and inherent challenges, which need to be considered before selecting them for data collection (Jones et al., 2019).

- Relying on a single method can weaken the overall design as it is likely to be affected by the biases or weaknesses inherent in that method (R. Johnson et al., 2007).

- Mixed-methods designs can provide a more comprehensive account than either the qualitative or quantitative method used alone, offer a better explanation of the results, and enhance the integrity of the findings (Bryman, 2006).

Camp Description

- Week-long residential camp for middle school-aged youth.
- Goal: students understand both agriculture as a system and the connections among the various system components.
- Lectures, discussions, small group experiential activities, group mapping exercises, and field visits.
- 28 students attended the camp

Evaluation Design

The study utilized:

- Group mapping (qualitative and quantitative)

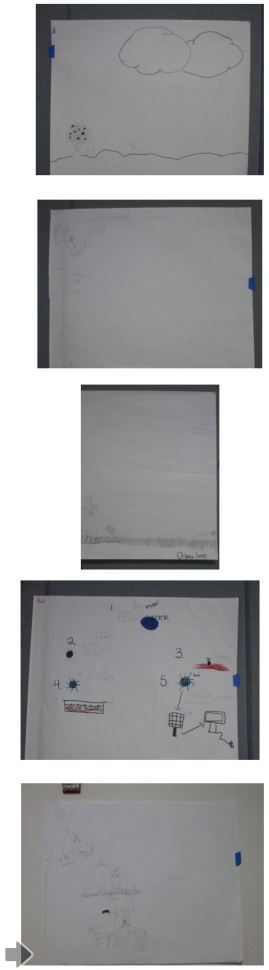
- Participant-observation (qualitative)

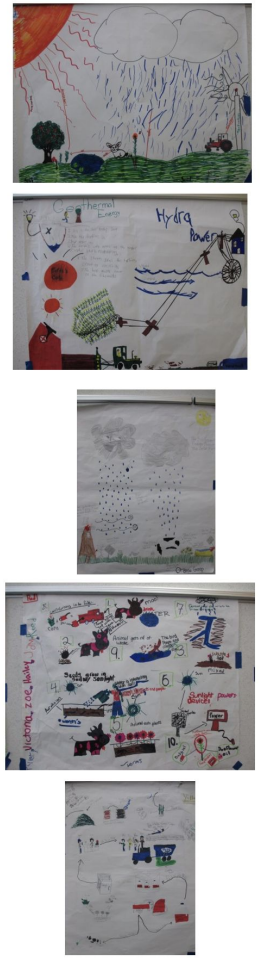
- Student reflections in the form of group presentations (qualitative)

- Retrospective post-then-pre surveys (quantitative)

Group mapping

Day 1 Maps of All Five Groups





Day 5 Maps of All Five Groups

Benefits of using mixed and multiple methods

- **Group mapping**: Useful to illustrate and understand students' learning about the agriculture system.

- **Participant-observation**: Helped in understanding the learning environment, engagement in learning activities, and areas of improvement.

- **Student reflections**: Completed the story of learning and validated the learning shown in the maps.

- **Survey**: Self-reported knowledge and skill change.

Mixed Methods Designs Recap

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Poll: Consider following research question: You just got a new 5-year grant to do systems change work related to childhood nutrition. Extension Activities include convening key stakeholders, building relationships, policy engagement, and forming a coalition. What mixed methods design would you apply to evaluate the effectiveness of the systems change work, and why?

Qualitative Analysis Resources

- Using Research Methods to Evaluate Your Extension Program http://www.joe.org/joe/2002december/a1.php
- Analyzing Qualitative Data (University of Wisconsin) https://cdn.shopify.com/s/files/1/0145/8808/4272/files/G3658-12.pdf
- Mixed Methods Procedures (Book available on Google Books or PowerPoint on Chapter 10 https://slideplayer.com/slide/9506326/)

Bibliography

- Bryman, A. (2006). Integrating quantitative and qualitative research: How is it done? *Qualitative Research*, *6*, 97-113. https://doi.org/10.1177/1468794106058877
- Johnson, R. B., Onwuegbuize, A. J., & Turner, L. A. (2007). Towards a definition of mixed methods research. *Journal of Mixed Methods Research*, *1*(2), 112-133. https://doi.org/10.1177/1558689806298224
- Jones, K., Gwynn, E., & Teeter, A. (2019). Quantitative or qualitative: Selecting the right methodological approach for credible evidence. *Journal of Human Sciences and Extension*, *7*(2), 61-87.
- Zhai, L., & Scheer, S. D. (2002). Influence of international study abroad programs on agricultural college students. Journal of International Agricultural and Extension Education, 9(3), 23-29.

Feedback

- Qualtrics survey

Quantitative Data Analysis Resources

- Newberry, III, O'Leary, & Israel (2017). The Savvy Survey #16: Data Analysis and Survey Results. UF/IFAS Extension, University of Florida.
- CGBS M&E Science. Student Research. How to run statistical tests in Excel.
- Leah, J. (2004). Using Excel for analyzing survey questionnaires. Program Development and Evaluation. University of Wisconsin Extension.
- Taylor-Powell, E. (1989). Analyzing quantitative data. Program Development and Evaluation. University of Wisconsin Extension.
- Koundinya, V. (2018). How to compute and present individual change with before and after survey data. Program Development and Evaluation. University of Wisconsin Extension.