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The Forgotten "Other"

Drawbacks to coding qualitative results

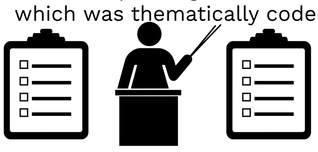
Methods

Population: Students from a general education biology class for non science majors at NDSU

Intervention: A module teaching science related to socioscientific issues

Study: Subjects were surveyed on a socioscientific issue before and after the module relating to that issue

Survey: Consisted of a multiple choice answer, which was ordinal, and a free response answer explaining rationale, which was thematically coded.



Problem

Thematic coding is great for finding what the majority of students say, but the really outrageous and interesting data gets put into the Other category or sometimes grouped with people saying something completely different.

While thematic coding, I started highlighting these responses. These are the reasonings we are least prepared to deal with.

If we are using this data to help students make better decisions, these responses, although rarer, need to be addressed. One conspiracy theorist in 300 responses represents 600,000 people petitioning the White House.

Unexpected Answers

"I still stand firm on my opinon that sex is binary. You need two parts to make it work."

"Sex varies by each person and how they choose to identify themselves."

"Sex is binary because in today's culture/world people no longer identify with being male or female."

Well, tomatoes are fruits like apples, and they're red like apples, so lets code it with the apples.

Some answers can be coded, but they're grouped with answers that aren't meaningfully similar, like the tomato and apple.

Surveys questions are made with the intention of learning certain information, but these answers defied expectations.

The green bubble is full of students who were coded as "other" both before and after the sex determination lesson, and had a nearly identical answer both times.

These students had unique answers that couldn't be accounted for with thematic coding.

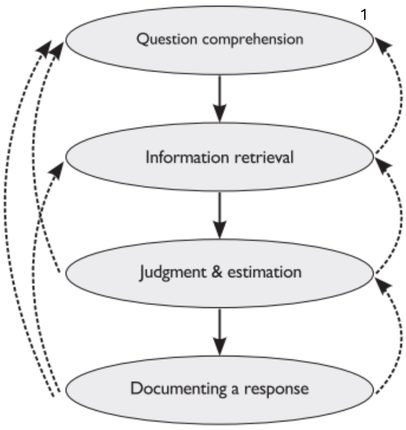
"Bill Gates made this virus and now he's selling the vaccine."

This response got grouped with those who were concerned about vaccine safety, because they were concerned the vaccine, even though their answer was unlike the others in that code who were waiting for scientific consensus or were worried about vaccine safety.

Some questions yield many answers that weren't intended by the question, but are common enough to have their own code.

-Good Participant Effect

-Satisficing



Satisficing

When students complete **minimum requirements** of the task, rather than answering to the best of their knowledge. This can be exacerbated by any **barriers to Question comprehension**.

The "Question comprehension" step can be interrupted by needing prerequisite knowledge:

-Scientific vocabulary

-Homonyms needing context

-Contradictory prior knowledge

"I don't really think sex is on a specturm. You either have it or not."

Good Participant Effect

Being able to **predict the hypothesis** makes it so students can purposefully or unconsciously **act in a way to support it.**

Exacerbated by:

-Knowing/liking the researcher

A professor is a close enough relation.

-Knowing the hypothesis

Learning goals are similar to the hypothesis

Often answers simply restate the learning goals.

"I have actually contracted Covid-19... **I still answered yes** as I'm sure **Dr. Booth** will be looking at the statistical percentages of the question and not at the individual rationalizations"

Future Possibility for Controls:

Current test:

Survey, then teach, then survey.

Susceptible to good participant effect.

A group that doesn't take a pre survey.

Controls for context priming students for more extreme answers

Survey without teaching.

Provides a baseline for dropout and random switching.

1. Ryan, K., & Gannon-Slater, N. (2012). Improving Survey Methods With Cognitive Interviews in Small- and Medium-Scale Evaluations. American Journal of Evaluation, 33(3), 414-430. doi:10.1177/1098214012441499

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