

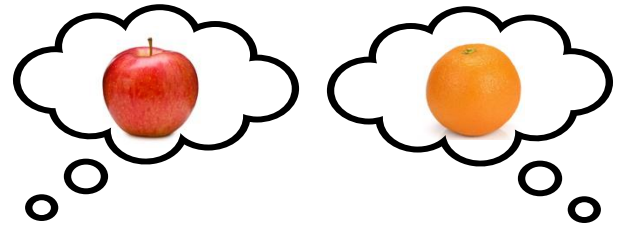
Measuring digital skills

Best practices from cognitive interviews in India, Kenya and Nigeria

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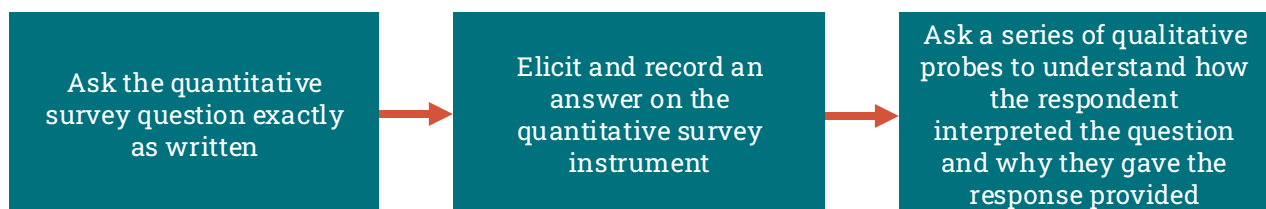
What is cognitive interviewing?

- Cognitive interviewing is a qualitative research method used primarily to improve the design of quantitative surveys
- The goal is to understand how respondents interpret draft survey questions and revise the questions as needed to ensure they capture the intended meaning
- Without cognitive interviews, gaps between question intent and respondent interpretation can persist, severely compromising the validity and, reliability of data generated from surveys



How does cognitive interviewing work?

- Recruit and train experienced qualitative researchers who are proficient in both the target and original language (when surveys are being translated)
- Sample participants with the same profile as the intended survey respondents, but prioritize those who are most likely to struggle with the survey (usually the least educated and most marginalized people)
- Researchers conduct interviews, taking the respondent through each draft survey question:



- Debrief to identify cognitive gaps and revise the draft questions
- Conduct additional rounds of interviews with new respondents to assess the revised questions
- Continue until a final version of the questions has been developed

How have we applied cognitive interviewing to the assessment of digital skills?

- We conducted cognitive interviews in India (Hindi), Kenya (Kiswahili) and Nigeria (Hausa)
- We tested digital skills questions drawn from global surveys (MICS - 7, DigComp 2.2, Global Kids Online 2021, Young Lives) and some drafted by our team

- Our researchers conducted four iterative rounds of cognitive interviews, involving between 90 and 101 respondents per country

India; Hindi (n=101 CIs)



Kenya; Kiswahili (n=90 CIs)



Nigeria; Hausa (n=90 CIs)



What did we learn from cognitive interviews on digital skill measurement?

General principles

Short, sweet & complete

Long questions with multiple clauses caused confusion

Preambles and “stems” were not retained

“I statements” were unclear (e.g., “I am confident...”); complete “you questions” worked instead (e.g., “Are you confident...?”)

Get specific

Respondents struggled with hypernyms (e.g., “social media”) and “umbrella time periods” (e.g., within the last three months)

Stating subordinate items (e.g., Facebook, Instagram...) achieved cognitive match and asking when X happened relieved cognitive burden

Avoid longer Likert scales

Likert scales seeking gradation of agreement, intensity of confidence, did not resonate

Many respondents, particularly in India, replied in binaries, rather than gradations

3-point scales worked

Digital skill specific principles

Assess independent practice

Asking “can you...” or “do you know how to...” can measure self efficacy not capability; ask “have you” instead

Separate having done an activity on one’s own versus only with assistance because some respondents do activities only with assistance

Avoid computer-centric language and obsolete practices

Ensure language is relevant to a mobile-first population

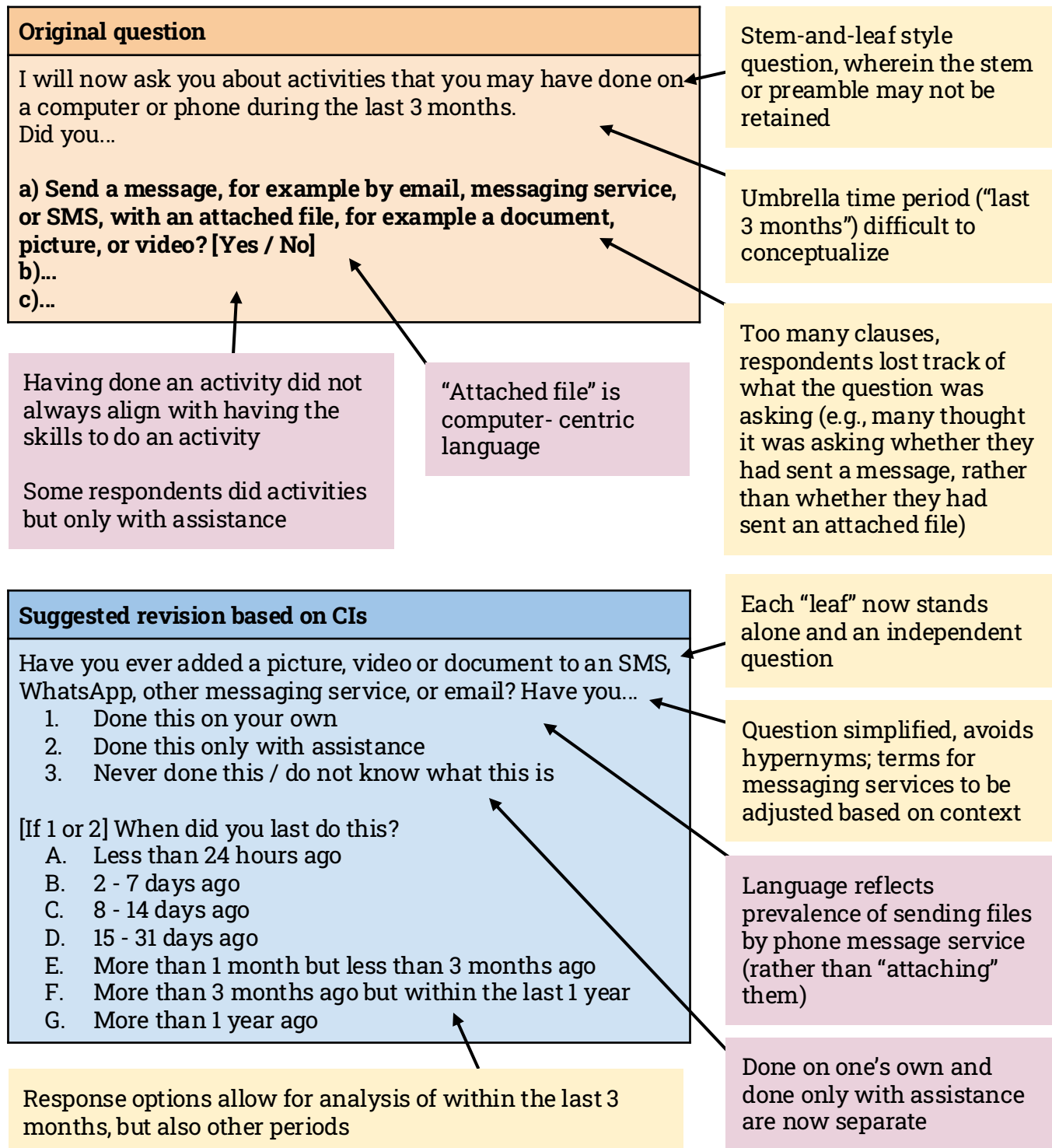
Remove questions as they become obsolete due to technology advancement

One basic & measurable skill per question

One basic skill per question

Ensure responses have a clear interpretation (e.g., if someone says they have not verified the reliability of information found online do they accept all information uncritically or do they not see any content that needs verification?)

Example of our findings



For more information, please contact kscott2@yorku.ca or see:

Scott, K., Ummer, O. & LeFevre, A.E. (2021). The devil is in the detail: Reflections on the value and application of cognitive interviewing to strengthen quantitative surveys in global health. *Health Policy and Planning* 36(6): 982–995. <https://doi.org/10.1093/heapol/czab048>

Scott K, Gharai D, Sharma M, Choudhury N, Mishra B, Chamberlain S, LeFevre AE (2020). Yes, no, maybe so: the importance of cognitive interviewing to enhance structured surveys on respectful maternity care in northern India. *Health Policy and Planning* 35(1): 67-77 <https://doi.org/10.1093/heapol/czz141>