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Designing Effective Surveys

The material and presentation quality at Questionmark webinars is always excellent

- Strongly Agree
- Agree
- Slightly agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

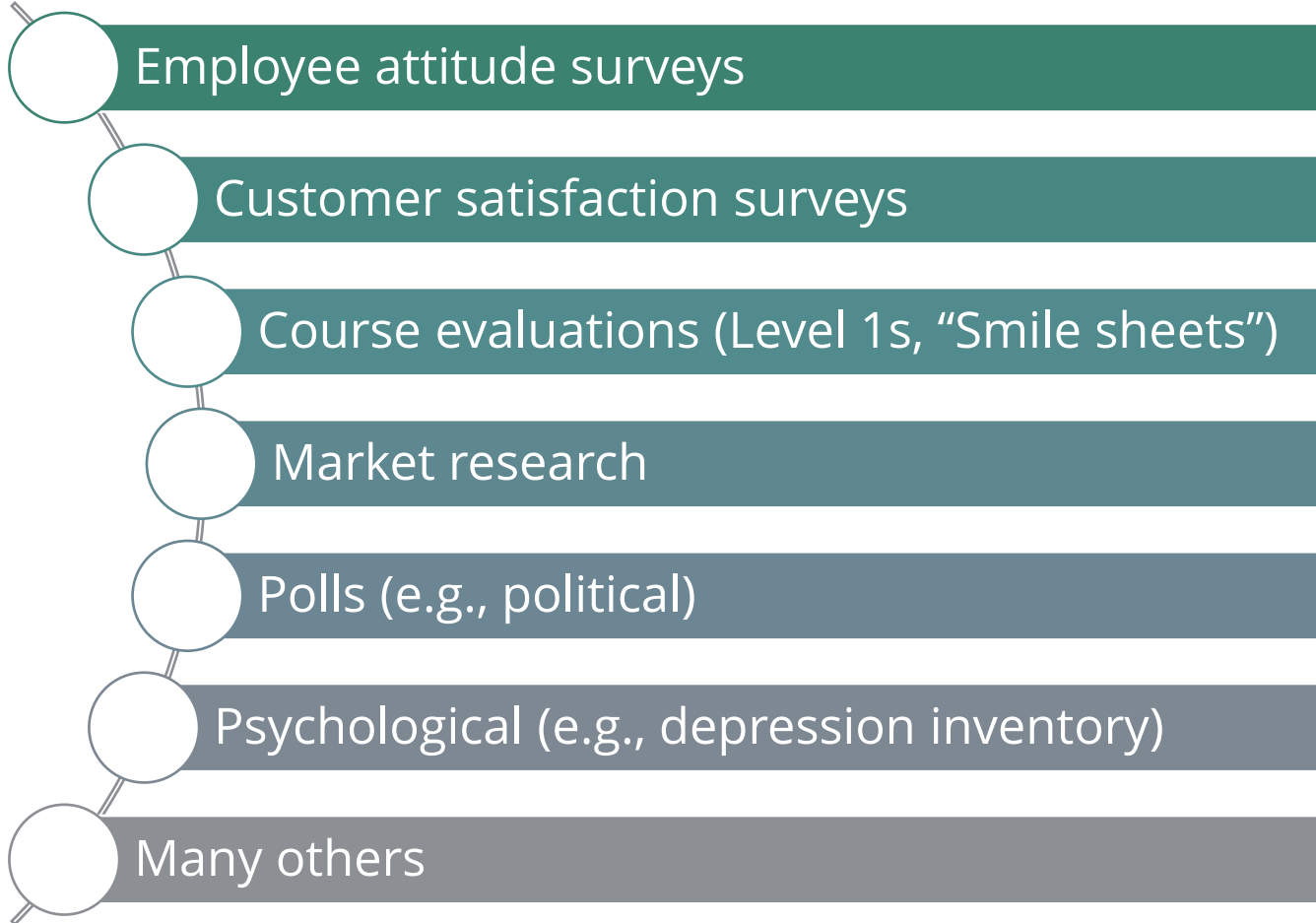


How many
errors can
you spot?

The material **and** presentation **quality** at Questionmark webinars is **always** excellent

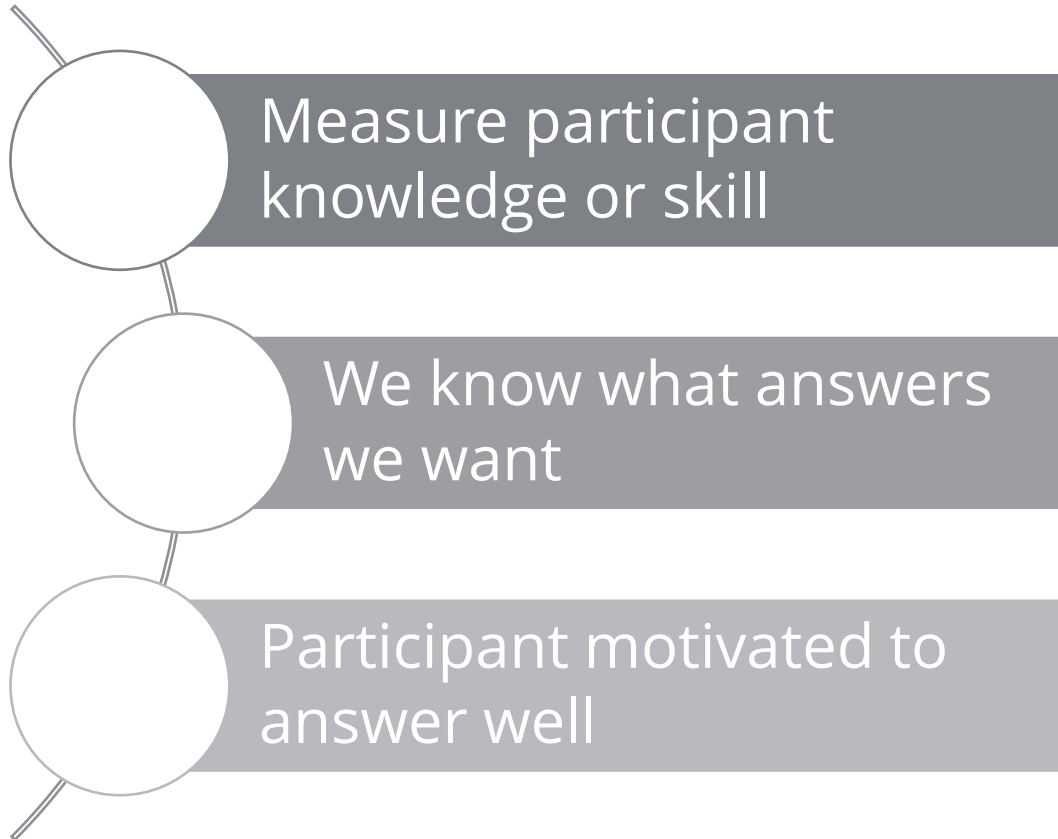
- Strongly **A**gree
 - Agree
 - Slightly agree
 - Neither agree nor disagree
 - Disagree
 - Strongly disagree
- ✓ Scale unbalanced
 - ✓ Leading question
 - ✓ Acquiescence bias
 - ✓ 7 errors!

Examples of survey types



Tests and surveys use questions for different purposes

Tests



Surveys



Designing Effective Surveys : Agenda

General issues on attitude surveys

Specific question design tips

Satisficing and how to stop it

Course evaluation surveys

Questionmark capabilities that help

Focusing on

- Advice based on research evidence
- Surveys of opinion and attitude in training, learning, compliance, certification



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Measuring attitudes

Attitudes

- Attitude
 - “feeling or opinion about something or someone”
- Measuring attitudes matter
 - influence behavior and action
- Some important challenges:
 - How you ask question
 - Mindset encouraged by earlier questions
 - Acquiescence bias
 - people like to agree
 - Social desirability
 - what participant thinks is expected

How question wording can influence results

(Schuman and Presser 1980s)

- Do you think the United States should forbid public speeches in favor of communism?
- 39% say yes “forbid”
- Do you think the United States should allow public speeches in favor of communism?
- 56% say no “do not allow”

How order of questions can influence answers (Cantril, 1940s)

- Asked respondents before USA joined the second world war
- More respondents said yes about the German army in Group B than Group A

Group A

1. Should Americans be allowed to enlist in the German army?
2. Should Americans be allowed to enlist in the British army?

Group B

1. Should Americans be allowed to enlist in the British army?
2. Should Americans be allowed to enlist in the German army?

Which of these is the better question?

Agree / Disagree

My overall health is excellent. Do you:

- ☐ Strongly Agree
- ☐ Agree
- ☐ Neither Agree or Disagree
- ☐ Disagree
- ☐ Strongly Disagree

Construct specific

How would you rate your health overall?

- ☐ Excellent
- ☐ Very good
- ☐ Good
- ☐ Fair
- ☐ Poor
- ☐ Very poor

Acquiescence Bias

- Strong evidence that
 - People tend to agree more than disagree in survey questions
 - Stronger when lower social status or less well educated
- Questions that ask
 - Do you agree or disagree with ...
 - Please answer yes or no ...
 - Will bias the answers towards agreement / yes
- Construct specific questions
 - Less likely to bias
 - Require fewer mental steps to answer
- Consider alternatives to “Agree/Disagree” questions

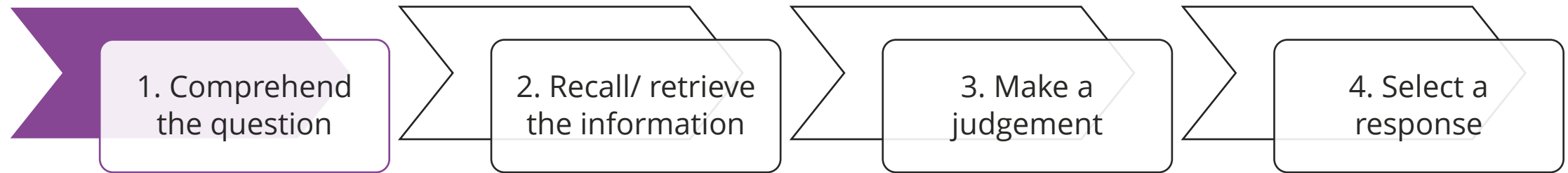
Social Desirability Bias

- Survey respondents often answer in a way that they think will be seen favorably by others
 - Over-report good behavior
 - Under-report bad behavior
- For example respondents may claim:
 - To be more environmentally responsible than they are
 - To rate their organization's activities more positively than they really feel
 - To deny anti-social or anti-organization behavior or thoughts
- Possible approaches
 - Ask indirect questions (about a third party)
 - Look at trends or differences, not absolute answers
 - Make survey anonymous

Mental Model : 4 steps to Answer Survey Question



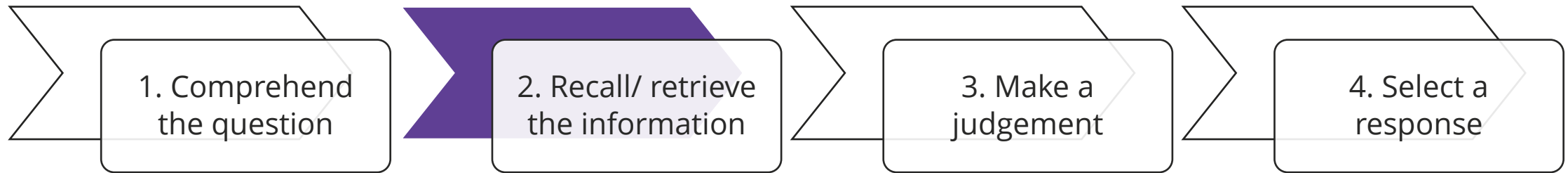
Comprehension errors



- George Bernard Shaw: “The single biggest problem in communication is the illusion that it has taken place.”
- Problems include jargon, complex words, ambiguity & misunderstanding simple words in context
- Pre-testing questions helps



Retrieval errors



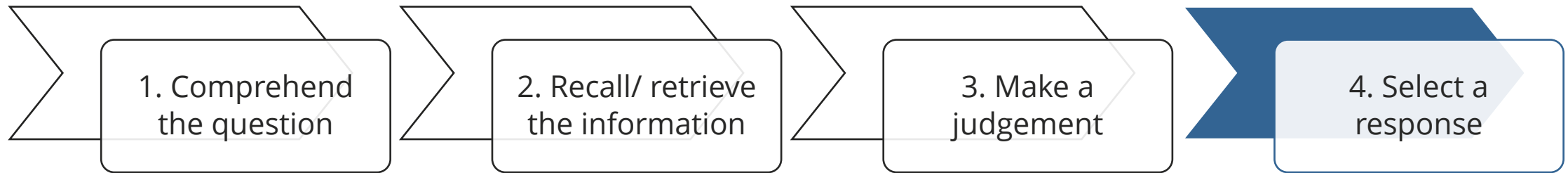
- Did the participant ever know?
- Did the participant know but forget?
- If they can recall, can does the question give a good enough cue to stimulate recall?
- How accurate is the memory?
- Is the timing mixed up?

Judgement errors



- Can be strongly influenced by earlier questions
 - Continuing line of thought from before, or mood set by earlier questions
- Easy to misinterpret and answer what participant thinks survey author meant to ask
- Can also be influenced by social desirability - what participant thinks ought to answer

Selecting a response errors



- Rating scales limit possible responses - can only select a response from those available
 - Scales and labels can bias or influence responses
 - Open answers might be left blank or brief, hard to analyze
- May edit answer to make socially acceptable



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Question design

Can you criticize these examples?

The Mac operating system rarely gets infected by viruses and so our organization should move to purchase more Mac computers?

- Yes
- No



How happy are you with the area you live in?

- Very satisfied
- Fairly satisfied
- Neither satisfied or dissatisfied
- Fairly unsatisfied
- Very unsatisfied
- Don't know



How long have you been a club member?

- 1-5 years
- 5-10 years
- 10-20 years
- 20+ years



How helpful did you find the instructor and the course?

- Very helpful
- Quite helpful
- A bit helpful
- Not helpful



How would you rate on-campus accommodation?

- Satisfactory
- Good
- Excellent

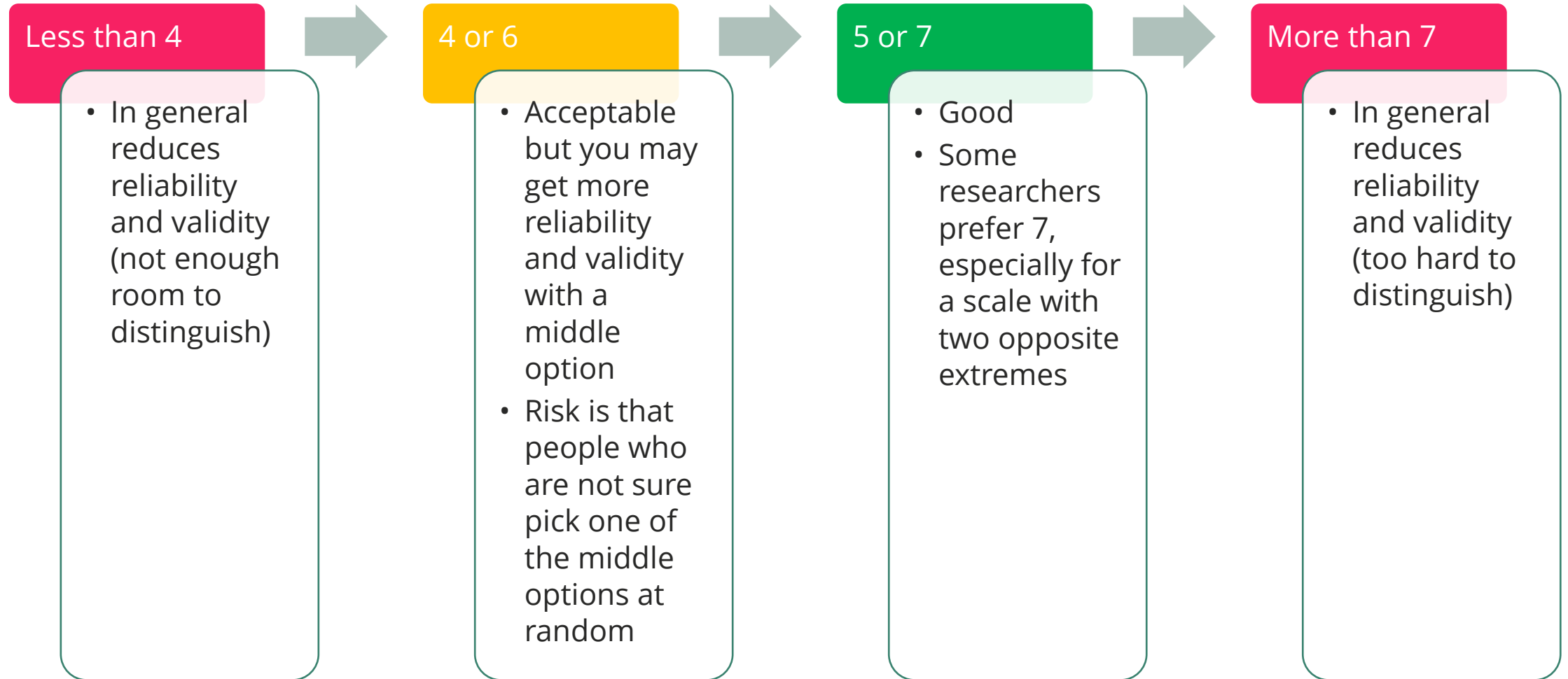


Pitfalls to avoid when writing survey questions:

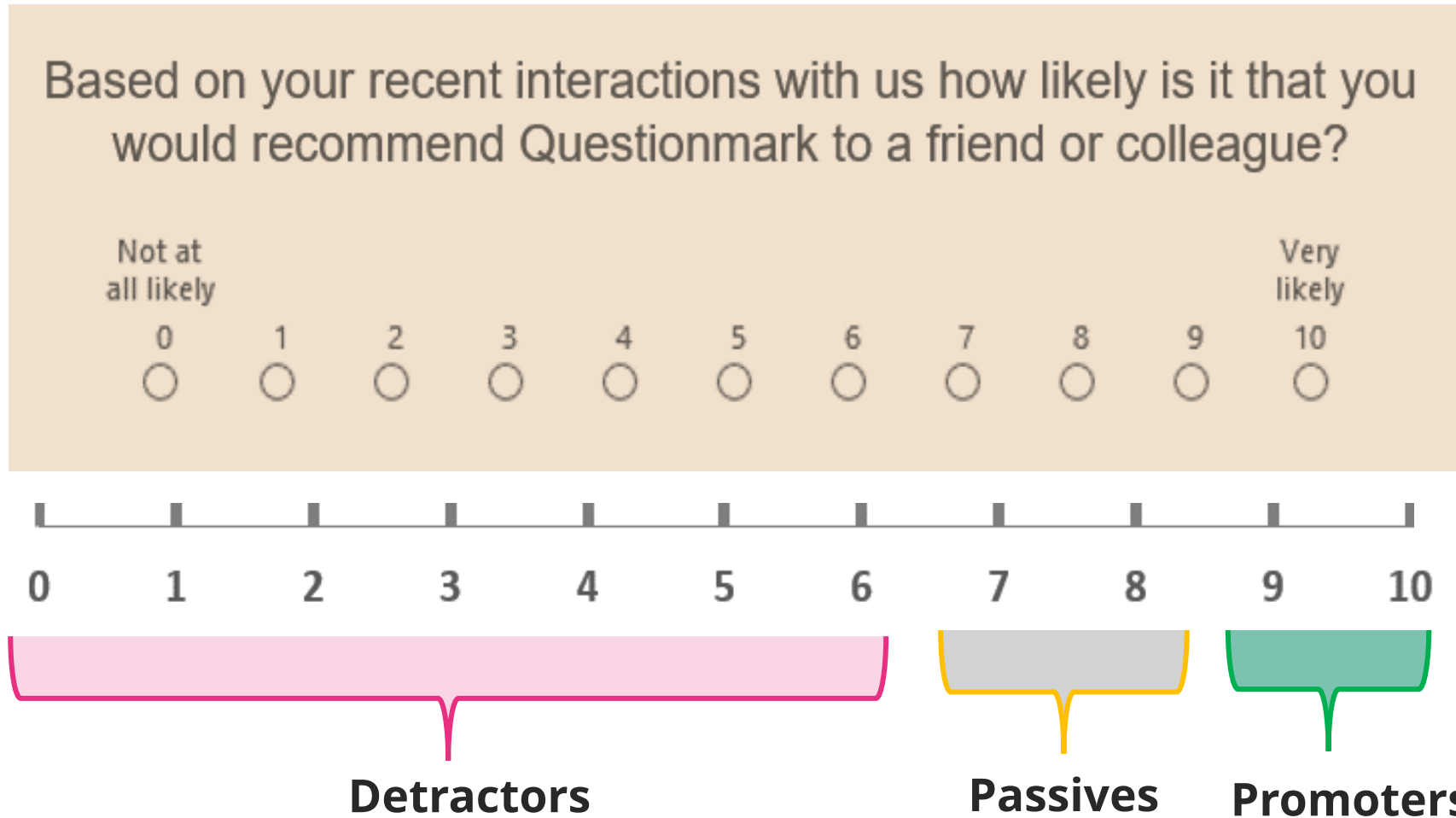
- ☐ Double barrelled questions (asking two things)
- ☐ Poor grammar and spelling
- ☐ Leading questions
- ☐ Questions open to interpretation
- ☐ Long or complex questions
- ☐ Negatives (*especially* double negatives)
- ☐ Jargon some respondents may not know
- ☐ Unbalanced scales
- ☐ Too many alternatives



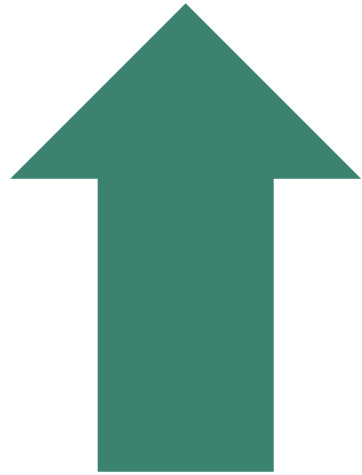
How many options should you have in a rating scale?



Net Promoter Score (NPS): 11-point scale

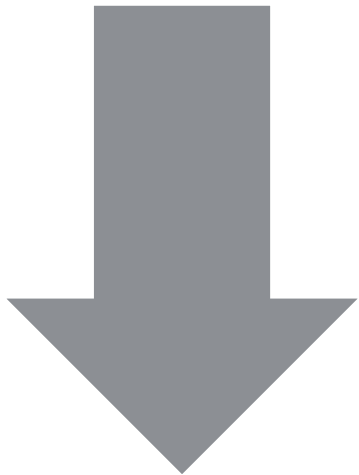


Order of choices can impact answer: primacy & recency



Primacy

- Participant chooses the first option, or the first they agree with



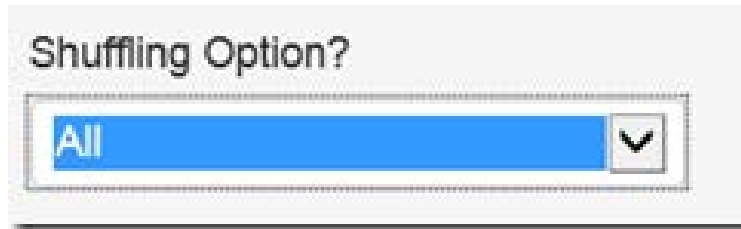
Recency

- Participant chooses the option they most recently saw

- Which conference speaker did you find most inspiring?
 - Parry
 - Eisenberg
 - Kleeman
 - Lay
 - McNamara
 - Hunt
 - Wilson

How to reduce primacy/recency effects

- Shuffle choices when creating question



- Other approaches
 - Make question simple
 - Use short lists
 - Use open ended questions
 - If shuffling not possible as order makes sense, have 2 or more variants randomly selected

Pretesting a survey (some ways of checking a survey before you deliver it for real)

Cognitive interviews

- People take surveys and talk aloud to an interviewer about what they are thinking
- Explaining what they think the question means and their judgment processes

Ask respondents for comments

- Include comment fields with questions
- Ask for some feedback on the questions at the end

Pilot studies

- For large surveys, deliver to a sample first
- Capture demographics and also some feedback
- Useful also to see when/where people drop out or stop answering



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Satisficing

Satisficing



- Rather than giving optimal answer, participant chooses a “good enough” answer
- Weak satisficing
 - Less thorough in each step 1/2/3/4
- Strong satisficing
 - Skip steps 2/3 entirely, choose arbitrary or expected response

How prevalent is satisficing?

(data from a Harvard University study 2012)

- US university survey of 250 items with a \$15 cash incentive to complete
 - Response rate 65% with ~750 responses
 - 81% did some element of satisficing
 - 36% rushed through parts of the survey too fast to be giving optimal answers
 - Amount of satisficing increased later in the survey
 - Statistically impacted validity/reliability and correlations
- Satisficing likely a big issue in survey quality

[https://dash.harvard.edu/bitstream/handle/1/11384947/Gehlbach - Using the theory of satisficing.pdf?sequence=1](https://dash.harvard.edu/bitstream/handle/1/11384947/Gehlbach_-_Using_the_theory_of_satisficing.pdf?sequence=1)

How to reduce satisficing

- Have you ever answered a survey giving good enough answers rather than optimal answers?
- Research suggests satisficing is connected with:
 - Participant motivation
 - Survey difficulty
 - Participant ability
 - Participant fatigue

Some ways to reduce satisficing

Motivation

- Communicate benefit of the survey
- Make participant believe survey will have positive consequences
- Ask participants to carefully deliberate
- Make sure every question's results are actionable
- What's in it for me (WIIFM)

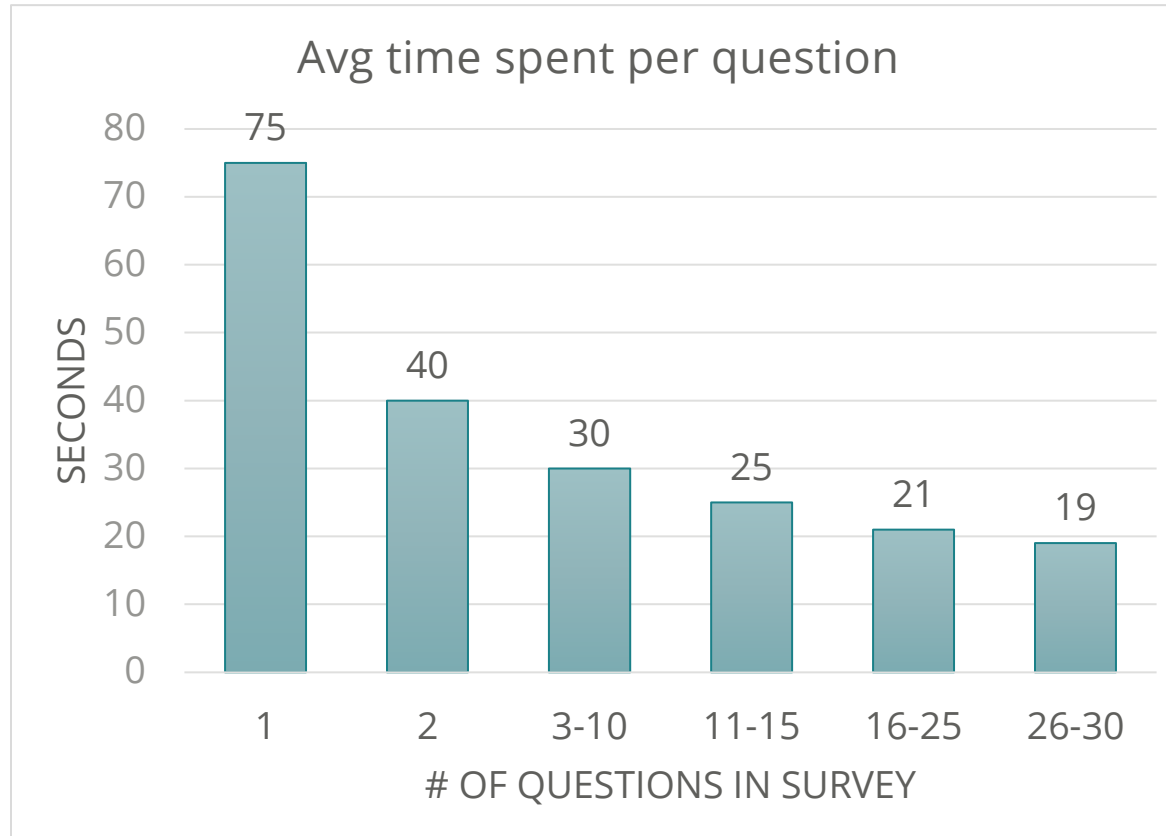
Reduce difficulty

- Keep surveys brief
- Keep questions short and simple
- Deconstruct complex questions into littler ones
- Don't ask about events that are difficult to remember
- Don't ask why someone did something

General

- Occasionally ask participants to justify answers
- Put most important questions early on
- Avoid agreement questions
- Shuffle choices to avoid primacy effects
- Remove don't know options

How long should a survey be?



Data from Survey Monkey

The longer the survey, the lower response rate and the more satisfying

Question difficulty matters

Unless you really need more data, keep your surveys short



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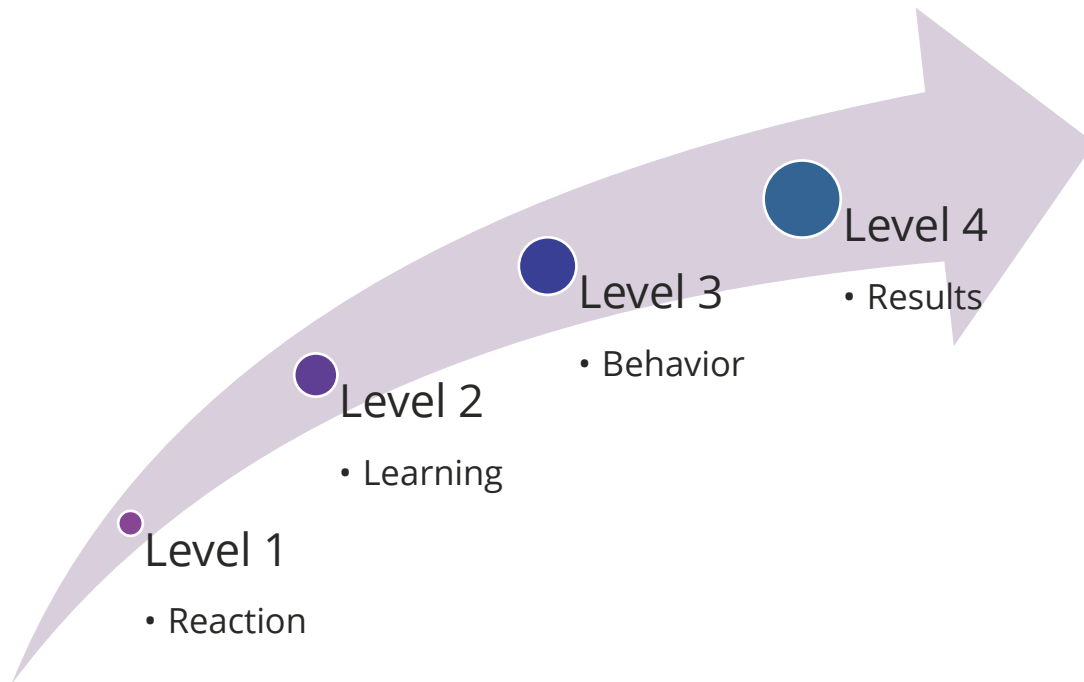
Course evaluation surveys

Some advice inspired by Will Thalheimer's book:

"Performance-focused Smile Sheets"

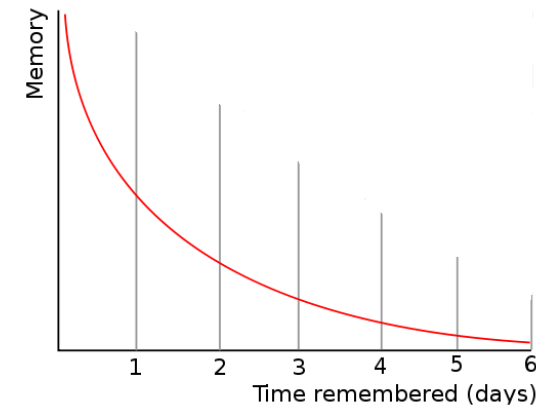
Theory of course evaluation surveys

Kirkpatrick's Four Levels



Reality

- Learners are poor predictors of benefit from learning



Course Evaluations / Level 1s



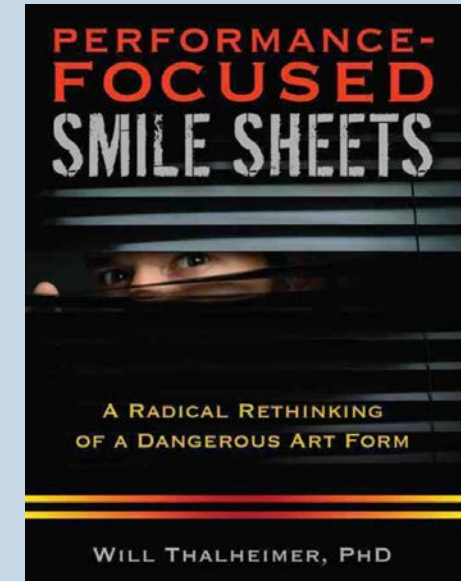
Overall, how would you rate this session?

- Excellent
- Good
- Average
- Fair
- Poor

- Commonly used assessment type
- Research indicates traditional, value-judgement approach offers *marginal accuracy at measuring learning effectiveness*
- Can be improved with:
 - Performance-based questions
 - Delayed delivery

Example “performance oriented” smile sheet question...

- In regard to the course topics taught, **HOW ABLE ARE YOU** to put what you’ve learned into practice on the job?
 - I’m **NOT AT ALL ABLE** to put the concepts into practice.
 - I have **GENERAL AWARENESS of the concepts taught, but I will need more training/practice/guidance/experience TO DO ACTUAL JOB TASKS** using the concepts taught.
 - I am **ABLE TO WORK ON ACTUAL JOB TASKS**, but I’ll need more hands-on experience to be fully competent in using the concepts taught.
 - I am **ABLE TO PERFORM ACTUAL JOB TASKS at a FULLY-COMPETENT LEVEL** in using the concepts taught.
 - I am **ABLE TO PERFORM ACTUAL JOB TASKS at an EXPERT LEVEL** in using the concepts taught.



Performance Focused Smile Sheets

by Dr. Will Thalheimer
<https://smilesheets.com>

Tips on course evaluation surveys

- Use tests or quizzes to measure knowledge and understanding
- Avoid Likert Scale (agree/disagree) questions
- Avoid questions with bias e.g. “My skills and abilities improved as a result of the training”
- Consider delayed surveys (e.g. 2-4 weeks after training) to measure how training actually helped in the workplace
- Useful to measure motivation, application and after-training support
- Only use questions that can lead to actionable results



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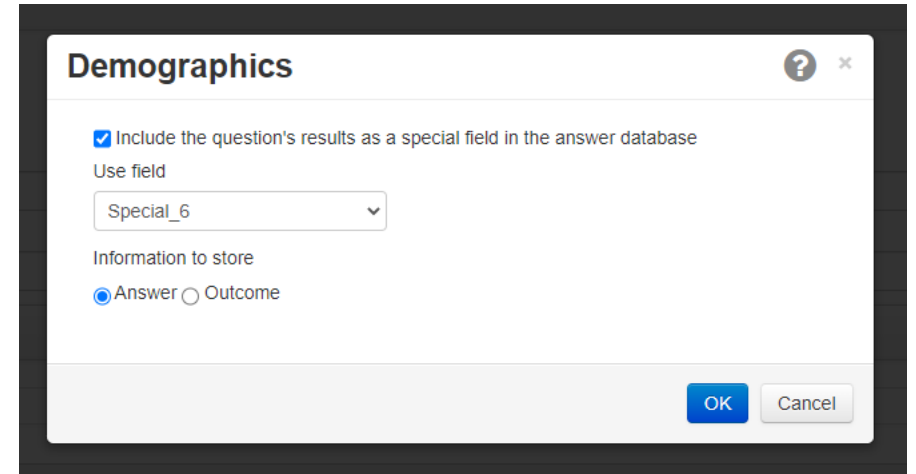
A few Questionmark capabilities that help

Question types for surveys

- Likert Scale
- Multiple choice
- Multiple response
- Essay
- Survey Matrix
- Job Task Analysis (JTA)
- Create custom Likert Scales to speed question authoring
- Scales are shared by topic (other authors with access to the topic can use them when building questions)
- Scales can be used in
 - Likert scale questions
 - Survey Matrix questions
 - JTA questions

Demographic questions

- First: don't ask questions you already have the data for
- Be open to why you are asking demographic questions
- Other ways to get demographic data into your survey results
 - Special Fields
 - Mapping
 - Capture via URL
 - Designate question



The screenshot shows a dialog box titled "Demographics" with a question mark icon and a close button in the top right corner. Inside the dialog, there is a checked checkbox labeled "Include the question's results as a special field in the answer database". Below this, the text "Use field" is followed by a dropdown menu showing "Special_6". Underneath, the text "Information to store" is followed by two radio buttons: "Answer" (which is selected) and "Outcome". At the bottom right of the dialog are "OK" and "Cancel" buttons.

Shuffle choice order within a question

How to do it

- Standard capability in authoring
 - Shuffle choice order

Shuffling Option?

No shuffling

All

All but last choice

All but last two choices

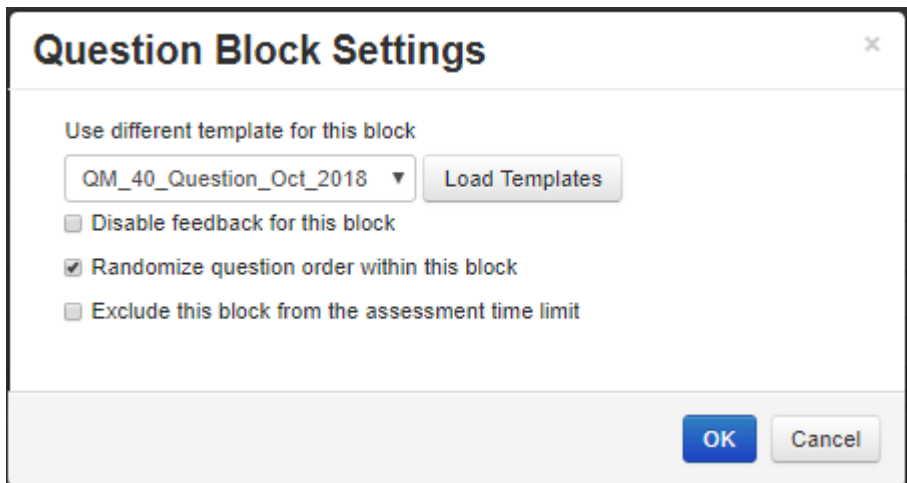
Why useful

- Shuffling choices avoid primacy/recency effects
- If you are asking for choice(s) from a list of options, should give a more accurate set of answers

Randomize question order within a survey

How to do

- Standard capability in authoring
 - Randomizing question order is option within question block settings



The screenshot shows a dialog box titled "Question Block Settings" with a close button (X) in the top right corner. Inside the dialog, there is a section "Use different template for this block" with a dropdown menu showing "QM_40_Question_Oct_2018" and a "Load Templates" button. Below this, there are three checkboxes: "Disable feedback for this block" (unchecked), "Randomize question order within this block" (checked), and "Exclude this block from the assessment time limit" (unchecked). At the bottom right, there are "OK" and "Cancel" buttons.

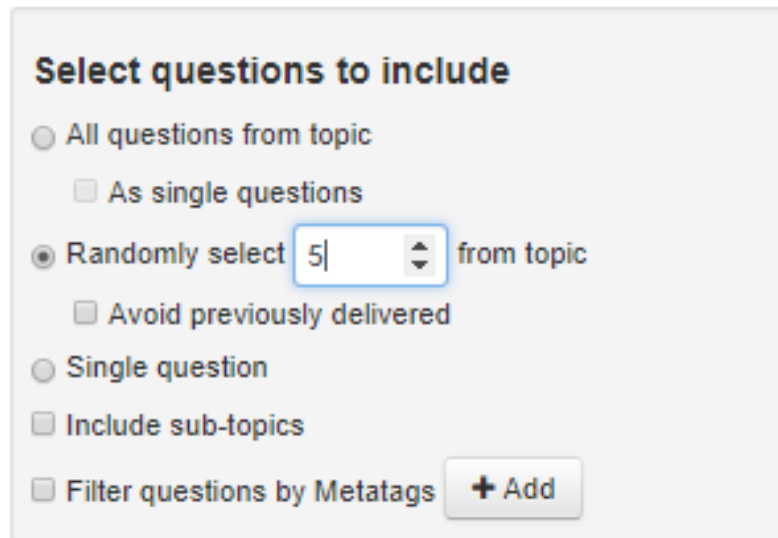
Why useful

- Question order does matter
 - As we saw earlier, answers to a question can be influenced by an earlier one
- Normally you would place questions in a natural order
- But if you have a series of questions on equal concepts, could consider removing order effects by shuffling their order

Randomize questions selection

How to do it

- Standard capability in authoring



The screenshot shows a dialog box titled "Select questions to include". It contains several radio buttons and checkboxes. The "Randomly select" option is selected, and the number "5" is entered in the adjacent text box. Other options include "All questions from topic", "Single question", and "Filter questions by Metatags".

Select questions to include

- ☐ All questions from topic
 - ☐ As single questions
- ☒ Randomly select from topic
 - ☐ Avoid previously delivered
- ☐ Single question
- ☐ Include sub-topics
- ☐ Filter questions by Metatags

Why useful

- Randomizing question selection can:
 - Select equivalent questions to avoid bias
 - A/B testing
 - Reduce length of survey

Anonymous surveys

How to do it

- Mark anonymous when authoring
- Schedule survey but system won't record names
- Check documentation re demographics/special fields

Why useful

- Anonymity will give more accuracy with “sensitive” questions
- Reduce social desirability bias
- Useful for employee attitude surveys

Jump blocks

How to do it

- Standard capability in authoring to jump based on
 - Score
 - Outcome to a question (most useful in surveys)

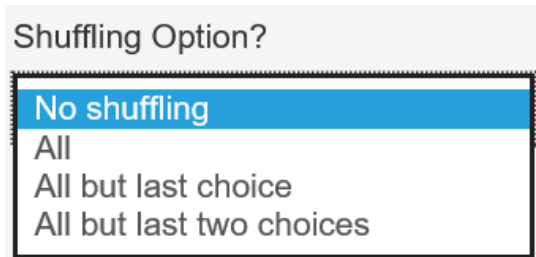
Why useful

- Direct participant to appropriate questions based on earlier answers
- Reducing apparent length of survey will reduce satisficing

Shuffle choice order within a question

How to do

- Standard capability in authoring
 - Shuffle choice order



Why useful

- Shuffling choices avoid primacy/recency effects
- If you are asking for choice(s) from a list of options, should give a more accurate set of answers

Topics

How to do

- Organize groups questions into topics
- Topic scores summarize results for groups of questions

Why useful

- Topic scores provide a quick way to monitor/compare results from one group of related questions to another
- Example
 - Topics:
 - Venue/facility questions
 - Instructor questions
 - Handouts questions

Allow participants to comment on questions

How to do it

- When authoring, assign comment box to question
- New “batch update” for adding comment boxes to multiple questions at once

Add your comment

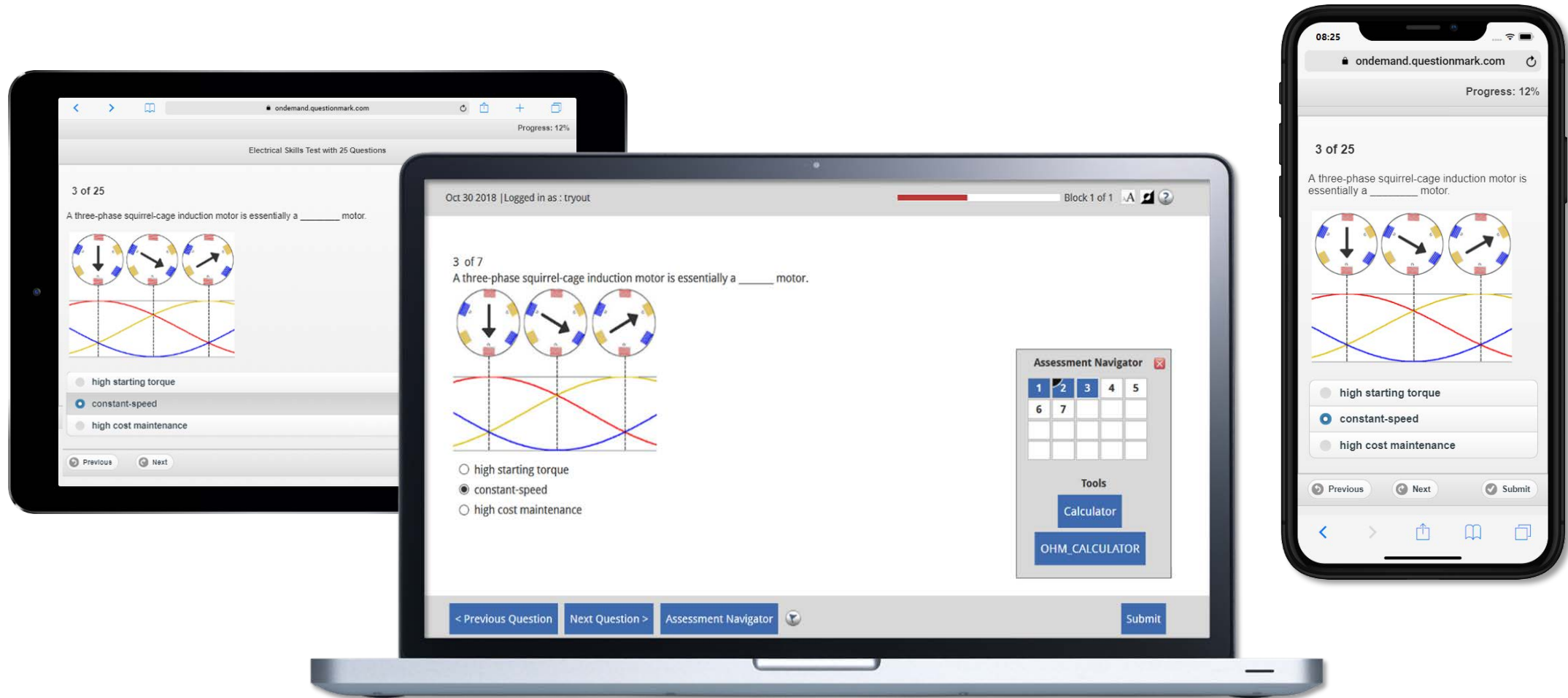
Add your comment

Set the size of the comment box by dragging

Why useful

- In pre-testing a survey useful for participant to explain their answer or issues on the question
- Could be used to get justification of answers to get qualitative input and reduce satisficing

Ensure your surveys work on multiple devices



Survey-specific reports

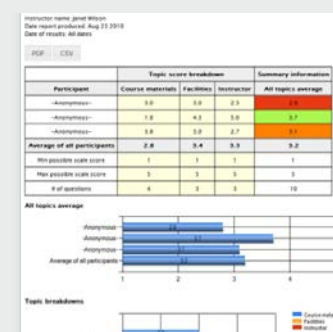
- Survey Report
- Survey Frequency Analysis
- Job-task-analysis (JTA)
- Course Evaluation - Course Summary
- Course Evaluation - Instructor Summary
- Course Evaluation - Class Summary
- Course Evaluation - Class Detail
- Other useful reports
 - Results Export
 - Results Export with Topic Scores
 - Results Export with Item Details



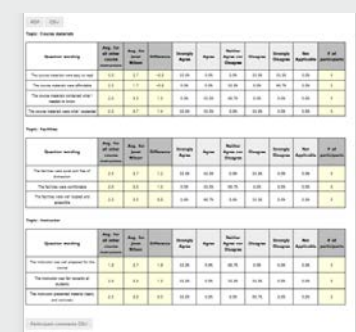
Course Summary



Instructor Summary

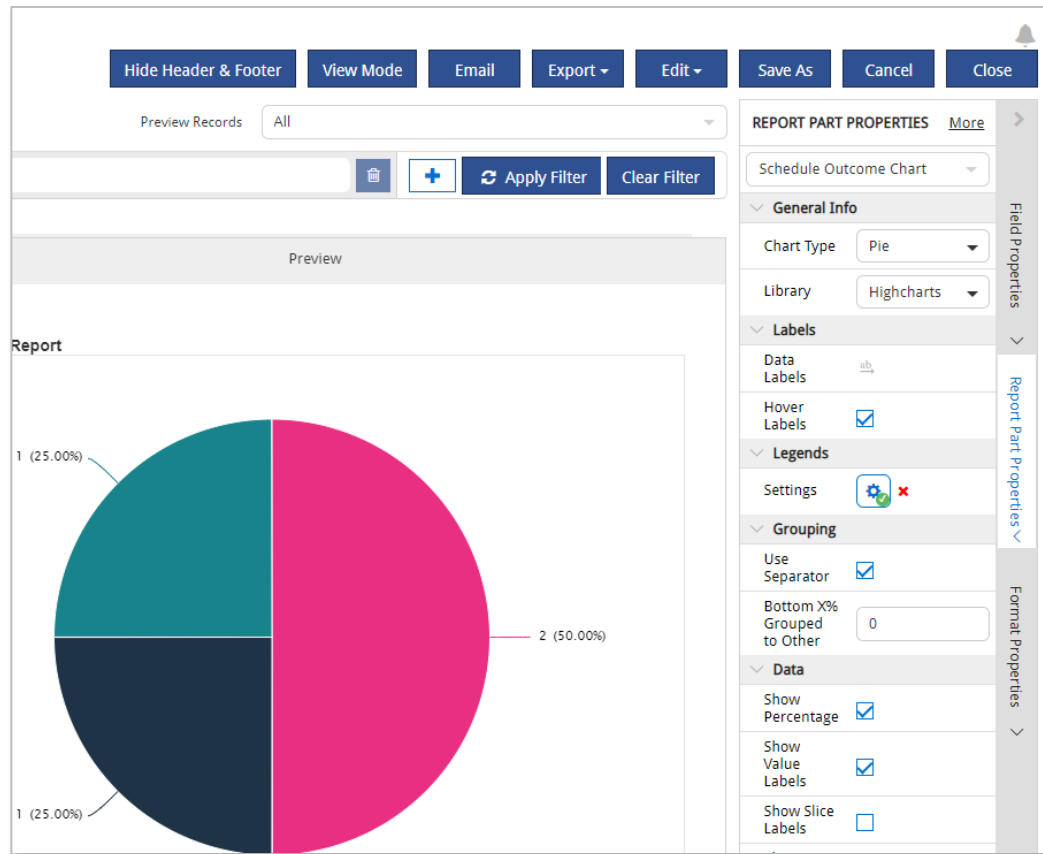


Class Summary



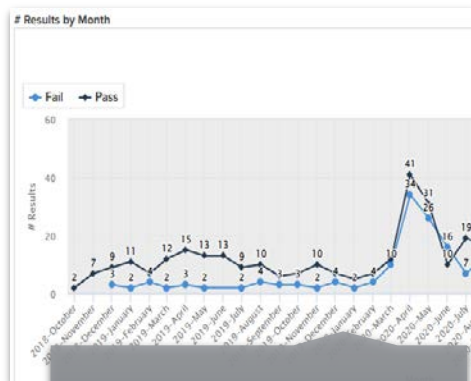
Class Detail

New Reports and Dashboards

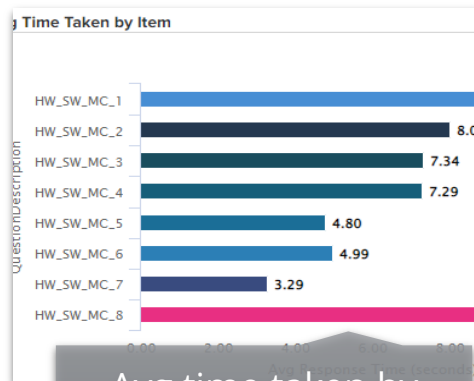


- Start with...
 - Results Export
 - Results Export with Topic Scores
 - Results Export with Item Details
- **New reporting system allows:**
 - **Edit and Save** reports w/filters
 - **Subscribe** to reports
 - **Design and Configure:**
 - **Add visualizations**
 - Choose fields
 - Re-label field aliases
 - Add **calculated fields**
 - Add/change filters

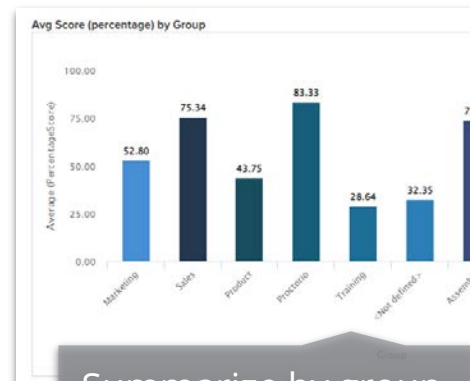
Examples of report parts and data visualizations



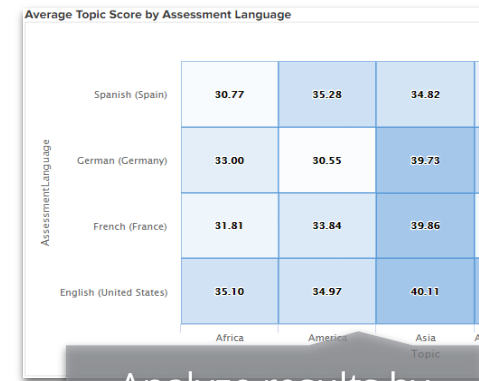
Results over time



Avg time taken by question, assessment



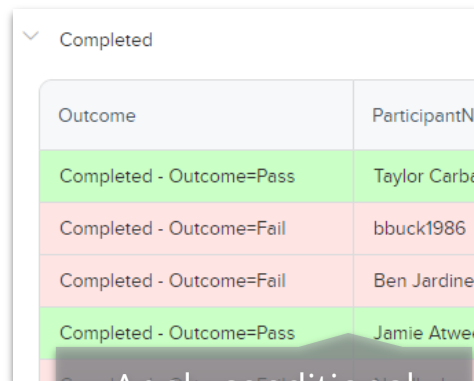
Summarize by group, demographics



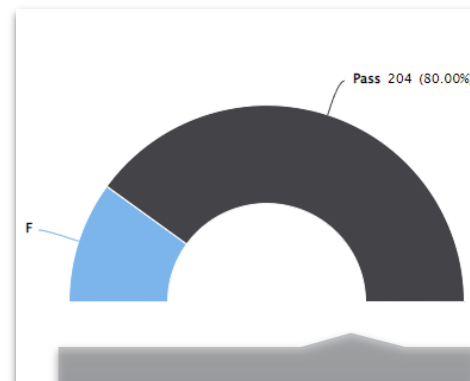
Analyze results by Assessment Language



Compare to a Benchmark



Apply conditional formatting



Show Pass/Fail Rates



Many visualization tools to choose from

Top Tips for Effective Surveys

Keep survey short: resist extra questions

Motivate participants (think about what's in it for them)

Make each question simple, and clear unambiguous

If your survey is important, pre-test it

Consider alternatives to Agree / Disagree questions

Avoid common errors like negatives, leading and double-barrelled questions

Comparisons or trends from previous surveys invaluable

Identify *in advance* the demographics/dimensions will be important for analyzing results

Provide a brief preamble explaining why the survey is being done

Ensure that the survey flows (order questions)

Say thank you!

Useful resources

Books

- Handbook of Survey Research
 - by Marsden/Wright
- Web Survey Methodology
 - by Callegaro/others
- Performance Focused Style Sheets
 - by Will Thalheimer

Web

- Coursera online course “Questionnaire Design for Social Surveys”
- Good chapter from Handbook of Survey Research on questionnaire design
<https://pprg.stanford.edu/wp-content/uploads/2010-Handbook-of-Survey-Research.pdf>
- Good article with bias examples:
http://www.cdc.gov/pcd/issues/2005/jan/04_0050.htm
- National Science Foundation 2015 recommendations on surveys:
https://pprg.stanford.edu/wp-content/uploads/2015-The_Future_of_Survey_Research.pdf
- Examples of real-world bad survey questions: www.twitter.com/badsurveyq
- Questionmark Blog





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Your questions



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Beyond Recall: Taking Competency Assessments to the Next Level

◆ August 30, 2022 - 11:00 am to 12:00 pm (EDT)

This session gives a general overview of why it's important to go beyond recall in competency assessments, describes some routes to do so, and provides a practical introduction to how situational judgment assessments, written in Questionmark, can measure the abilities of employees to solve problems, make decisions and exercise sound judgment.

Setting a Cut Score – What's Fair and What's Not?

◆ September 27, 2022 - 11:00 am to 12:00 pm (EDT)

Join us as our consulting partner, Jim Parry, Owner and Chief Executive Manager of Compass Consultants, LLC discusses the importance of setting a fair, defensible cut or passing score for tests and assessments.



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Thank you!

Brian McNamara
brian@questionmark.com