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# BEST PRACTICES IN SURVEY DESIGN |

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## Research Brief

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## INTRODUCTION

This document presents information compiled from research regarding best practices in survey design<sup>1</sup>. Surveys are used by Harford County Public Schools (HCPS) to collect data on stakeholders’ perspectives, opinions, attitudes, and many other things. These stakeholders include but are not limited to students, teachers, principals, administrators, central office staff, and parents/guardians.

HCPS aims to develop surveys that align with best practices in survey design. Using the following survey design standards will help strengthen the ease of use of the survey, as well as the analysis of the survey results.

There are usually two major issues that need to be addressed before implementation: (1) **What are the different types of questions?** and (2) **How do you validate a survey** (is it worth doing/collecting what you are collecting)?

## TYPES OF SURVEY QUESTIONS

There are many kinds of survey questions out there, and below are the important ones based on research<sup>2</sup>.

Itemized-category	Paired comparisons
Comparative	Likert
Ranks	Continuous

Below are examples of survey questions categorized by the type of survey questions and a summary of pros and cons for each type.

- **Itemized-Category**

### How satisfied are you with your salary?

Very dissatisfied	Quite dissatisfied	Neither dissatisfied nor satisfied	Quite Satisfied	Very Satisfied
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**Pros**

**Cons**

- o Clear category descriptions
- o Balance of categories
- o No comparison

<sup>1</sup> Report from Hanover Research Inc entitled "SCHOOL SAFETY SURVEY INSTRUMENT, January 2019."

<sup>2</sup> Adapted from "Business Analytics: From Data to Insights; Wharton Executive Education online course."

• **Comparative**

**Compared to private schools in the area, the teachers in public schools provide a quality of teaching, which is ...**

Very inferior	Neither inferior nor superior	Very superior
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**Pros**

- o Comparison is possible

**Cons**

- ✘ Loss of information

**Note:** The big loss of information is that both alternatives might not be that great and are below the bar.

• **Ranking Questions**

**Please rank the following tools/resources (used by teachers to engage students during online classes) in terms of their importance.**

(1 being the most important and 8 being the least important, no ties allowed)

Flipgrid	Book Creator
Kahoot	Immersive Reader
Nearpod	Knowt
Flippity	Wakelet

**Pros**

- o The type of categories is quite clear.

**Cons**

- ✘ Too many comparisons for survey respondents to make.

**Best Practice:** Respondents have to do a lot of comparisons when they are going across all options. For the first rank, you are comparing across eight (8) different categories and choosing one of these categories as the top rank. The typical rule of thumb is not to give too many categories, and eight (8) categories is actually quite a lot; it is best to give no more than six (6) categories. If you give more than six categories, you might get good quality data only for the top one or two, and after that, it might not be a lot of distinguishing data.

• **Paired Comparisons**

**Which of the following two products do you prefer?**

Ford Fusion	Hyundai Sonata
<ul style="list-style-type: none"> <li>• <b>\$18,000</b></li> <li>• <b>Automatic Transmission</b></li> <li>• <b>Luxury package</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>\$16,000</b></li> <li>• <b>Manual Transmission</b></li> <li>• <b>Standard package</b></li> </ul>

**Pros**

- A good way of understanding what respondents like.
- This mimics what people probably do in the real world.

**Cons**

- ✘ Large number of brands cannot be compared with this type of questions.
- ✘ Respondents may prefer one product over the other but might actually dislike both options.
- ✘ Amongst the two options, Ford Fusion is preferable, but it is still below the bar in terms of what they like.
- ✘ Respondents may not like both options.

**Best practice:**

- Compare two to three options (have about two to three brands)
- Have four to six features per option.
- Avoid too many features or too many attributes of these brands.
- Typically, have not more than six attributes. In the above example, you have four (brand name, price, transmission type, and the package).

• **Likert Scale**

This is the most common type and most popular survey questions and also known as multiple choice questions. Respondents can select one or more options or answer choices from a list of answers already define.

According to SurveyMonkey, multiple choice questions are “intuitive, easy to use in different ways, help produce easy-to-analyze data, and provide mutually exclusive choices.”

<b>For each statement, survey respondents are asked to check the response that best expresses the extent to which they agree or disagree with it:</b>					
<b>Statements</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither Agree Nor Disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
Adults at my school care about students					✓
Adults at my school treat students with respect.				✓	
My teachers praise my effort on schoolwork.		✓			
My teachers expect students to do their best in school.				✓	

**Pros**

**Cons**

- Ability to collect a lot of data in terms of what survey respondents like or what they do not like. ✘
- Used very frequently when you want respondents to think about lots of different statements, in this case about student engagement and related items.

None

Likert scale or multiple-choice questions can come in different formats (single answer questions with radio button, true/false, etc.). See below for examples.

**Overall, how satisfied were you with the customer service provided by the central office?**

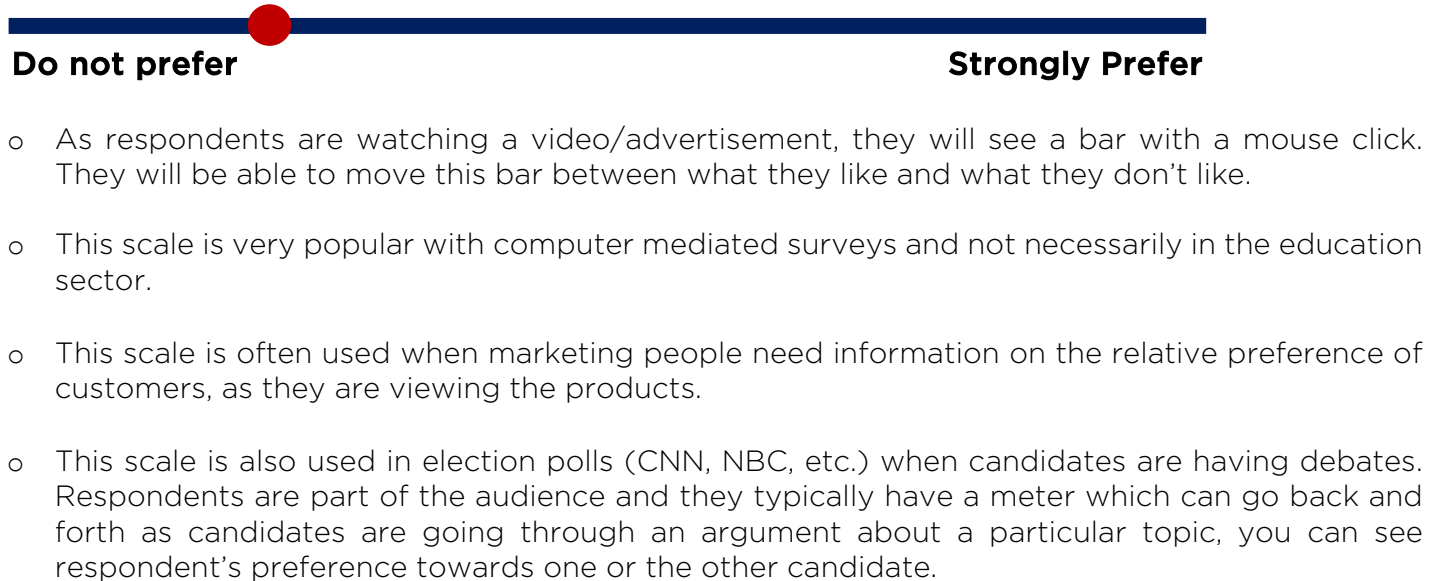
<b>Very dissatisfied</b>	<b>Dissatisfied</b>	<b>Neither satisfied nor dissatisfied</b>	<b>Satisfied</b>	<b>Very satisfied</b>
○	○	○	○	○

**Please rate the impact of the following strategy on student cognitive engagement.**

	<b>Not at All Effective</b>	<b>Slightly Effective</b>	<b>Moderately Effective</b>	<b>Very Effective</b>	<b>Extremely Effective</b>
Connecting with student’s knowledge and experiences.	○	○	○	○	○

- **Continuous Scale**

- Continuous scale helps collect respondent's in-situ preferences (in-situ preferences means you want preferences as respondents are thinking about or looking at particular let's say video or movie clip, etc.)
- This scale is typically shown as a bar, can be done easily via the Internet.



**Do not prefer** **Strongly Prefer**

- As respondents are watching a video/advertisement, they will see a bar with a mouse click. They will be able to move this bar between what they like and what they don't like.
- This scale is very popular with computer mediated surveys and not necessarily in the education sector.
- This scale is often used when marketing people need information on the relative preference of customers, as they are viewing the products.
- This scale is also used in election polls (CNN, NBC, etc.) when candidates are having debates. Respondents are part of the audience and they typically have a meter which can go back and forth as candidates are going through an argument about a particular topic, you can see respondent's preference towards one or the other candidate.

## BEST PRACTICES

It is strongly recommended to use the following survey design standards.

1. Present matrix questions (e.g., Likert scales going from **strongly disagree** to **strongly agree**) from **negative to positive**.
  - a. Likert scale is a rating scale used in survey to assess opinions, attitudes, or behaviors.
  - b. To collect data, survey respondents are presented with Likert-type questions or statements and a continuum of possible responses, usually with 5 or 7 items used more frequently.
  - c. Each item is given a numerical score so that the data can be analyzed quantitatively.
  - d. For **example**, typical multiple-choice options include strongly agree, agree, N/A or Don't know, disagree, and strongly disagree as to the **Likert** item.
2. **Randomize questions** when multiple options are present to decrease “order-effects,” which is common for questions of a similar structure.
3. **Balance Likert scales.** For many surveys, it is recommended to primarily utilized five-point scales.
4. **Use “N/A” or “Don't know”** options when the question is either not relevant or the respondent is unsure. These are often consolidated because there is not an analytical reason to separate these results. Moreover, extending the scale (i.e., separating “N/A” and “Don't know” as two different options) may encourage respondents to select more “positive” responses due to the relative physical position of the extended scale.
5. **Keep open-ended comments to a minimum.** Respondents start providing redundant answers when faced with more than two (2) or three (3) open-ended responses.
6. **Use skip logic (branching)** to ensure that respondents only answer questions pertinent to them.
7. **Avoid too many or too few questions in a single page.** You may view these aesthetic aspects of the survey once the survey has been programmed into the online platform (Qualtrics, Survey Monkey, Survey Tracker, Microsoft Forms, Google Form, etc.)
8. Avoid questions with the following characteristics:
  - a. **Avoid double-barreled questions** (e.g., asking two questions at once).
  - b. **Avoid leading questions.** For example, asking “**Many teachers and staff members indicate that district buildings are clean. Is your building clean?**” may lead a respondent to indicate that their building is clean regardless of their objective opinion. Asking leading questions makes respondents susceptible to social desirability. That is, respondents might then answer questions based on the question wording and not their objective opinion.
  - c. **Avoid subjective language** for survey questions to ensure that all respondents will interpret the survey item the same way.



## LIMITATIONS

In the previous section we provided a broad overview of the different types of survey questions. However, the types of questions provided are not an exhaustive list, there are many other kinds of survey questions that were not described in this document (example: Matrix questions; Student Produced Response (SPR) questions; Rating scale questions; Image choice questions; True/False questions; Slider questions; Benchmarkable questions; Dropdown questions; etc.

**APPENDIX: RELEVANT SURVEY SCALES**

<b>INTRODUCTORY PROMPT</b>	<b>RESPONSE OPTIONS</b>
<p style="text-align: center;"><b>Agreement</b></p> <p>Please indicate how much you disagree or agree with the following statements:</p>	<ul style="list-style-type: none"> <li>▪ 1 = Strongly Disagree</li> <li>▪ 2 = Disagree</li> <li>▪ 3 = Neither Agree nor Disagree</li> <li>▪ 4 = Agree</li> <li>▪ 5 = Strongly Agree</li> </ul>
<p style="text-align: center;"><b>Concern</b></p> <p>How concerned are you about the aspect of increasing students’ access to technology during school?</p>	<ul style="list-style-type: none"> <li>▪ 1 = Not at All Concerned</li> <li>▪ 2 = Slightly Concerned</li> <li>▪ 3 = Moderately Concerned</li> <li>▪ 4 = Very Concerned</li> <li>▪ 5 = Extremely Concerned</li> </ul>
<p style="text-align: center;"><b>Confidence</b></p> <p>Please rate your confidence level [...]</p>	<ul style="list-style-type: none"> <li>▪ 1 = Not at All Confident</li> <li>▪ 2 = Slightly Confident</li> <li>▪ 3 = Moderately Confident</li> <li>▪ 4 = Very Confident</li> <li>▪ 5 = Extremely Confident</li> </ul>
<p style="text-align: center;"><b>Frequency</b></p> <p>How often are students in your class(es) asked to use [...] OR How often do(es) you(r child) have access to the following devices at home</p>	<ul style="list-style-type: none"> <li>▪ Never</li> <li>▪ Less Than Once a Month</li> <li>▪ Every Month</li> <li>▪ Every Week</li> <li>▪ Every Day</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>▪ Never, my family does not have this device at home</li> <li>▪ Never, access is not permitted in my home</li> <li>▪ 1 to 2 Times a Week</li> <li>▪ 3 to 4 Times a Week</li> <li>▪ Almost Every Day</li> </ul>
<p style="text-align: center;"><b>Effect</b></p> <p>To what extent does [...] have a positive or negative effect on [...].</p>	<ul style="list-style-type: none"> <li>▪ 1 = Negative Effect</li> <li>▪ 2 = Slightly Negative Effect</li> <li>▪ 3 = Neither Positive nor Negative Effect</li> <li>▪ 4 = Slightly Positive Effect</li> <li>▪ 5 = Positive Effect</li> </ul>
<p style="text-align: center;"><b>Open-Ended Comments</b></p> <p>Open-ended questions should align with the survey research questions</p>	<ul style="list-style-type: none"> <li>▪ Comment box (with or without limited characters)</li> </ul>

## REFERENCES

1. Research Report from Hanover Research Inc entitled "SCHOOL SAFETY SURVEY INSTRUMENT, January 2019."
2. Source: Adapted from "Business Analytics: From Data to Insights; Wharton Executive Education online course" Professor *Raghuram Iyengar*, Associate Professor of Marketing Faculty Co-Director - Wharton Customer Analytics Initiative
3. SurveyMonkey: <https://www.surveymonkey.com/mp/survey-question-types/>