

## AM Last Page: Avoiding Five Common Pitfalls of Survey Design

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Writing good survey items is both an art and a science. Over the last 30 years, scholars have amassed a great deal of scientific evidence on which questionnaire designers can rely.<sup>1-5</sup> The guidelines below present some of the more frequently ignored, but more important, of these survey-design basics.

Pitfall	Survey example(s)	Why it's a problem	Solution(s)	Survey example(s)
Creating a double-barreled item	How often do you talk to your nurses and administrative staff when you have a problem?	Respondents have trouble answering survey items that contain more than one question (and thus could have more than one answer). <sup>1</sup> In this example, respondents who talk to nurses often but talk to administrative staff infrequently will struggle to answer this question. Survey items should address one idea at a time. <sup>1</sup>	When you have multiple questions/premises within a given item, either (1) create multiple items for each question that is important or (2) include only the more important question. Be especially wary of conjunctions in your items. <sup>1,4</sup>	How often do you talk to your nurses when you have a problem?  How often do you talk to your administrative staff when you have a problem?
Creating a negatively worded item	In an average week, how many times are you unable to start class on time?  The chief resident should not be responsible for denying admission to patients.	Negatively worded survey items are challenging for respondents to comprehend and answer accurately. Double-negatives are particularly problematic and increase measurement error. <sup>1</sup> If a respondent has to say "yes" in order to mean "no" (or "agree" in order to "disagree"), the item is flawed.	Make sure "yes" means yes and "no" means no. This generally means wording items positively. <sup>1</sup>	In an average week, how many times do you start class on time?  Should the chief resident be responsible for admitting patients?
Using statements instead of questions	I am confident I can do well in this course.  <ul style="list-style-type: none"> <li>not at all true</li> <li>a little bit true</li> <li>somewhat true</li> <li>mostly true</li> <li>completely true</li> </ul>	A survey represents a conversation between the surveyor and the respondents. To make sense of survey items, respondents rely on "the tacit assumptions that govern the conduct of conversation in everyday life." <sup>2</sup> Only rarely do people engage in rating statements in their everyday conversations.	Formulate survey items as questions. Questions are more conversational, more straightforward, and easier to process mentally. People are more practiced at responding to them. <sup>1,4</sup>	How confident are you that you can do well in this course?  <ul style="list-style-type: none"> <li>not at all confident</li> <li>slightly confident</li> <li>moderately confident</li> <li>quite confident</li> <li>extremely confident</li> </ul>
Using agreement response anchors	The high cost of health care is the most important issue in America today.  <ul style="list-style-type: none"> <li>strongly disagree</li> <li>disagree</li> <li>neutral</li> <li>agree</li> <li>strongly agree</li> </ul>	Agreement response anchors do not emphasize the construct being measured and are prone to acquiescence (i.e., the tendency to endorse any assertion made in an item, regardless of its content). <sup>3</sup> In addition, agreement response anchors may encourage respondents to think through their responses less thoroughly while completing the survey. <sup>4</sup>	Use construct-specific response anchors that emphasize the construct of interest. Doing so reduces acquiescence and keeps respondents focused on the construct in question. Doing so results in less measurement error. <sup>1,4</sup>	How important is the issue of high health care costs in America today?  <ul style="list-style-type: none"> <li>not at all important</li> <li>slightly important</li> <li>moderately important</li> <li>quite important</li> <li>extremely important</li> </ul>
Using too few or too many response anchors	How useful was your medical school training in clinical decision making?  <ul style="list-style-type: none"> <li>not at all useful</li> <li>somewhat useful</li> <li>very useful</li> </ul>	The number of response anchors influences the reliability of a set of survey items. <sup>5</sup> Using too few response anchors generally reduces reliability. There is, however, a point of diminishing returns beyond which more response anchors do not enhance reliability. <sup>5</sup>	Use five or more response anchors to achieve stable participant responses. In most cases, using more than seven to nine anchors is unlikely to be meaningful to most respondents and will not improve reliability. <sup>5</sup>	How useful was your medical school training in clinical decision making?  <ul style="list-style-type: none"> <li>not at all useful</li> <li>slightly useful</li> <li>moderately useful</li> <li>quite useful</li> <li>extremely useful</li> </ul>

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### Disclaimers:

The views expressed in this article are those of the authors and do not necessarily reflect the official policy of the Department of Defense. Dr. Steven Durning coauthored this Last Page prior to becoming assistant editor, AM Last Page.