References


Original Papers

Working towards more sensitive perception data: The hot cold scale

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The Likert scale has a long and distinguished history of aiding researchers and academics to collect data. Invented by Rensis Likert in the 1930s, it requires research participants to rate the extent of their beliefs, attitudes, or feelings towards the object of research. The scales often comprise 5 points (although many authorities, for example Dörnyei, advocate a 6-point scale) and range from strongly agree to strongly disagree or similar.

The use of Likert scales is so ubiquitous that it is rarely challenged; indeed, many studies defend and promote them above other data collection options such as the Thurstone scale (see, for example, Waples, Weyhrauch, Connell, & Cyiberston, 2010; Croasmun & Ostrom, 2011). However, this author is also not alone in believing there is a problem with Likert scales; when being used to measure perceptions or feelings, they are unable to do so accurately. What is meant by this statement is that, for example, bad to a certain degree for one respondent may have a totally different meaning for another. Without some kind of norming or standardization of participants’ feelings there is no way of really knowing whether the participants are communicating the same feeling to the same degree. The data, then, is flawed; as Woltz, Gardner, Kircher, and Burrow-Sanchez (2012, p. 995) found, “Common frequency response scales and scoring methods should not be taken to reflect equal intervals of actual frequency.” However, researchers (this author included) have continued to use the Likert scale regardless as there seems to be no obviously better replacement available.

After a lot of thought about this over the last few years during a research project on measuring student self-perceptions, this author started to look for alternatives and came across the visual analog scale (VAS). The VAS involves marking a cross on a line to indicate feelings or perceptions. It has normally been used in medicine for patients to indicate their degree of pain to a practitioner; the author was unable to find any specific instances of it being used in published social-science research beyond the experimental phase.

While the VAS renders, in many ways, similar data to the Likert scale, it does allow that data to be somewhat more sensitively collected. Instead of five- or six-set points it can allow unlimited grading and these can be printed on the scale (Figure 1) or not (Figure 2). Funke and Reips (2012, p. 322), using a 0-250 graded scale, found that “VASs allow respondents to communicate subjective values more exactly” and “a small number of response options implicitly conveys the message that roughly estimated answers are sufficient, whereas a large number of response options can be understood as an instruction to maximize cognitive efforts.” In their study, statistical correlations were
significantly higher with VASs when compared to 5-point Likert scales.

However, the VAS as it is would seem to suffer from similar drawbacks to the Likert scale; for example, what is painful for one person may be nothing to someone else. Past experience, age, knowledge of pain, and many other factors come into the equation for the individual concerned. There is no conclusive evidence to say that the VAS is superior to the Likert scale, either. Couper, Tourangeau, Conrad and Singer (2006) found the VAS was no more accurate than other scales and, in fact, to be deficient in that it took longer for participants to complete and had high rates of missing data. On the other hand, Funke and Reips (2012) found the opposite; VASs in their study maximized the precision of answers and provided better data. They did not find any differences in mean, a higher dropout rate, more nonresponses, or higher response times.

Clearly the jury is out on whether the VAS is better than the Likert scale or other alternatives, and more research needs to be done. However, if the VAS can be improved to provide an easily-standardized measure—hence rendering improved and stronger data—then it could possibly provide a clearly-better instrument than other scales.

Effectively and easily norming a research population is a challenge; much data is collected in a hurry and researchers do not want to take up too much participant time for fear of wearing them out or losing them entirely. A standard norming session might take hours and is clearly not practical in most circumstances. But what kind of phenomenon does everyone know of and understand implicitly? What kind of measurement is everyone in the world familiar with? Temperature: hot and cold. Everyone in the world is, at least to a certain extent, able to conceive of hot and/or cold and how they would feel about them—as long as the temperatures are kept within human experience. It doesn’t matter that heat is experienced differently by different people as they will all know the emotion “I am cold” even if the temperature at which people will actually feel this differs for Inuit and Bedouin. Furthermore, association of pale blue-like colours with coolness and red/orange/yellow-like colours with heat are cross-cultural due to the common human experience of seasons, weather, water and sun; not only a sensual scale but a visually-representative scale is also possible if colours are used.

It seems to this writer that the strongest points of the VAS—greater precision of data and wider range of scale, combined with the concept of hot and cold—might provide a solution to the problem of norming a population easily and quite possibly provide better and more-precise data for social-science research purposes. While this idea has not been tested on a formal research population, it has been piloted with individuals—both students and faculty—and so far it seems that everyone has been able to conceptually understand and use the hot and cold scale (HCS) easily. It does, however, need some refining before it can be formally piloted in full-scale trials.

The issue is how to refine it: what figures, if any, should be included? For example, using degrees centigrade 0-100 seemed
like a good idea at first, but actually 100
degrees is not a comfortable temperature
and neither is 0. One end of the scale
needs to be comfortable and one end
uncomfortable for the data to render
positive and negative feelings. Perhaps
+25 degrees -25 degrees might work
better, but this still feels not quite right.
Maybe colours alone might be a better
option?

The purpose of writing this article is, in
short, to appeal for collaborators in
developing this scale. Clearly it will need a
good deal of work to refine, but the goal of
better and more accurate perception data
is surely a noble one.

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Using blog post
challenges

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Abstract

This article examines the use of blog post
challenges in an English language
classroom. Based on the course, Japan’s
Environmental Impact, students were
asked to complete environmental
challenges outside of the classroom:
activities to be completed on their own
time as a way to bridge lessons with real-
world experiences. Additionally, students
were required to reflect on their experience
by posting on a class blog on Tumblr. This
extended classroom learning provided
students with a chance to use content-
focused English outside the classroom and
develop autonomous learning skills, as
well as allowed the teacher to informally
assess the effectiveness of her lessons.
Through the challenges, it was found that
students were able to apply what they
learned in class to the challenges,
increasing their self-motivation and
willingness to evaluate their environmental
footprint.