Health Professions Education

Volume 4 | Issue 1 Article 1

2018-02-21

The Single-Item Questionnaire

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Recommended Citation
Schmidt, Henk (2018) "The Single-Item Questionnaire," *Health Professions Education*: Vol. 4: Iss. 1, Article 1.
DOI: 10.1016/j.hpe.2018.02.001
Available at: https://hpe.researchcommons.org/journal/vol4/iss1/1

Available online at www.sciencedirect.com

ScienceDirect

Health Professions Education 4 (2018) 1–2

www.elsevier.com/locate/hpe

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If, in the context of a survey, one wishes to know how old a participant is, one question suffices: "How old are you?" The same applies if one is interested in participants' alcohol use per day, or whether the person is married or not. The use of a single item to measure constructs is also common practice in disparate fields such as job satisfaction ,[1] stress research ,[2] or happiness studies .[3] In fact, how many different ways are there to ask how happy a person is?

In education however, things are different. There, multi-item questionnaires and tests are traditionally the instruments with which constructs are measured. An important reason is that the measurement reliability of a single item cannot be estimated. One needs responses to more than one item to assess the internal consistency of a questionnaire or test. And sufficient reliability of an instrument is a precondition for it to be valid. However, here the same problem exists. Recently, I asked a group of medical students to fill in the eight-item self-efficacy[†] subscale of the well-known Motivated Strategies for Learning Questionnaire (MSLQ) developed by Pintrich.[4] Afterwards, one of the students asked me: "Why do I have to answer largely the same question eight times?" Indeed, how many different ways are there to inquire about a student's self-efficacy?

Despite the measurement concerns, single-item questionnaires are on the rise. In particular, in true experiments, researchers do not worry much about reliability issues. For instance, studies into cognitive load, experienced while working on a learning task, estimate with just one item the amount of cognitive load felt. In decision-making tasks, confidence in one's own judgement is also usually measured by a single item.

And the reliability problem is easy to circumvent in three ways: (1) Correlate the single item with a test that is purported to measure the same construct. If the correlation is high, say around .80, then use only the single item rather than the test in the future. The single item can be said to have high concurrent validity. (2) Compare two groups that are known to be different in terms of the construct measured. If differences on the single item are statistically significant, the single item can be considered to have sufficient discriminant validity. (3) Sometimes, students go through a learning event (they attend a lecture, a group discussion, or are confronted with a problem they have to solve). If such learning event is supposed to *change* the construct of interest, this change should be reflected in single-item measures taken before and after the event. This indicates the predictive validity of the measure. This approach is useful both in true experiments (where treatments are withheld from half of the participants), or in the in educational settings more useful time-series design.

The central message: Freely use single-item questionnaires because they are as effective as multi-item tests and far more time-efficient. But pay attention to the validity issue.

[†]Self-efficacy is one's belief in one's ability to succeed in specific situations or accomplish a particular task.

References

1. Wanous JP, Reichers AE, Hudy MJ. Overall job satisfaction: how good are single-item measures?. *Journal of applied Psychology* 1997;**82**(2):247.
2. Elo A-L, Leppänen A, Jahkola A. Validity of a single-item measure of stress symptoms. *Scandinavian journal of work, environment & health* 2003:444–451.
3. Abdel-Khalek AM. Measuring happiness with a single-item scale. *Social Behavior and Personality: an international journal* 2006;**34**(2):139–150.

https://doi.org/10.1016/j.hpe.2018.02.001

4. Pintrich, PR, et al. Reliability and predictive validity of the Motivated Strategies for Learning Questionnaire (MSLQ). *Educational and psychological measurement* 1993;**53**(3):801–813.

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