Guidance for developing questionnaires using self-efficacy scales

The relevance of self-efficacy within education is perhaps best illustrated by Bandura's assertion: that **"people's beliefs in their efficacy influence the choices they make, their aspirations, how much effort they mobilise in a given endeavour, [and] how long they persevere in the face of difficulties and setbacks"** (Bandura, 1991; cited in Chen, Gully & Eden, 2001).

Discussion of the extent to which Bandura's **domain specific** concept of self-efficacy can be expanded to accommodate more general measures of self-efficacy is beyond the scope of this document, but his work has allowed for the development of "general self-efficacy" questionnaires: see Schwarzer & Jerusalem (1995) and Chen, Gully & Eden (2001) for more detail on this.

The following guidance is based largely on that given in Bandura (2006) – to which we would refer readers for a more detailed explanation of the features and processes outlined below. Further guidance on developing validated scales and questionnaires is available via the links given at the bottom of the page.
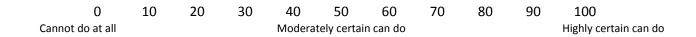
> "Scales of perceived self-efficacy must be **tailored** to the particular domain of functioning that is the object of interest. […] In the standard methodology for measuring self-efficacy beliefs, individuals are presented with items portraying different levels of task demands, and they rate the **strength of their belief in their ability to execute** the **requisite activities**."
>
> (Bandura, 2006, pp. 307-8 & 312)

Key considerations in design

Format of the response scale
Following Bandura's (2006) model, participants should record the strength of their efficacy for each item on a **100-point scale**, "ranging in 10-unit intervals from 0 ('Cannot do'); through intermediate degrees of assurance, 50 ('Moderately certain can do'); to complete assurance, 100 ('Highly certain can do')." The rating therefore indicates the participant's degree of **confidence** on a given item **as of now**. An example of how this might look is provided here:

0	10	20	30	40	50	60	70	80	90	100
Cannot do at all					Moderately certain can do					Highly certain can do

Alternatively, a simpler **10-point scale** "retains the same scale structure and descriptors but uses single unit intervals ranging from 0 to 10".

Bandura (2006) argues that scales that use only a few steps (i.e. a 3 or 5-point scale) should be avoided "because they are less sensitive and less reliable" – and because participants "usually avoid the extreme positions so a scale with only a few steps may, in actual use, shrink to one or two points". In essence, scales with too few steps "lose differentiating information" compared with more sensitive measures where the responses "are distributed over a good part of the range of alternatives".

Further to Bandura's (2006) model, we suggest removing the points altogether on the participants' version of the questionnaire and simply providing a **sliding scale**, labelled at each pole, for each item. Although the data can be scored in the same way by the researchers (manually or via programmes such as Qualtrics), the slider may help participants not to become too preoccupied by the individual numbers – which can lead to clustering – and to simply rate the items in terms of relative confidence. We also suggest that the sliding scale can provide a greater degree of granularity in terms of the ratings provided for each item. An example of how this might look is provided below:

Example

This questionnaire is designed to help us gain a better understanding of the kinds of challenges that can occur for teachers on a blended learning undergraduate course. Each numbered item below represents a different challenge.

For each item, please rate your degree of confidence (i.e. how certain you are that you can do it) by marking the point on the scale that you feel most accurately captures for your response.

1. **Motivate students to complete prerequisite reading before a face-to-face teaching session.**

   Cannot do at all --- Highly certain can do

Item wording

As self-efficacy is concerned with **perceived capability**, it is important that the wording of the items on the scale reflect this. As Bandura (2006) makes clear: the items should be phrased in terms of *can do* rather than *will do* – as *can* is a judgement of capability whereas *will* is a statement of intention; the two constructs are conceptually and empirically separable.

It is also important that perceived self-efficacy remains **distinguished** throughout from other constructs such as *self-esteem* (a judgement of self-worth); *locus of control* (belief about whether one's actions are determined by one's actions or by forces outside one's control); and *outcome expectations* (judgements about the outcomes that are likely to flow from certain types of performances) (Bandura, 2006).

Instructions to participants

"Preliminary instructions should establish the appropriate mindset that participants should have when rating the strength of their belief in their personal capability. **People are asked to judge their operative capabilities as of *now,* not** their potential capabilities or their expected future capabilities. It is easy for people to imagine themselves to be fully efficacious in some hypothetical future" (Bandura, 2006, pp. 312-313).

A **practice item** "helps to familiarise respondents with the scale gauging strength of efficacy belief and reveals any misunderstandings about how to use it" (Bandura, 2006, p. 313).

Other considerations

Preliminary work will be required to establish which – and how many – items will be appropriate for a questionnaire. Where comparable validated questionnaires already exist, it may be possible to adapt the given items to reflect the tasks relevant to your area of research without wholly undermining the validity; where not already available, additional steps will be required to validate the questionnaire: as helpfully outlined by Axboe et al. (2016).

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References and further reading

Axboe, M. K., Christensen, K. S., Kofoed, P. & Ammentorp, J. (2016). Development and validation of a self-efficacy questionnaire (SE-12) measuring the clinical communication skills of health care professionals. *BMC Medical Education, 16:272.*

Bandura, A. (1997). *Self-efficacy: The exercise of control.* New York, Freeman.

Bandura, A. (2006). Guide for constructing self-efficacy scales. In F. Pajares & T. Urdan (Eds.). *Self-Efficacy Beliefs of Adolescents.* Greenwich, CT: Information Age Publishing, pp. 307-337.

Chen, G., Gully, S. M. & Eden, D. (2001). Validation of a New General Self-Efficacy Scale. *Organizational Research Methods,* 4 (1), pp. 62-83.

Schwarzer, R. & Jerusalem, M. (1995). Generalised Self-Efficacy Scale. In J. Weiman, S., Wright, S. & Johnston, M., *Measures in health psychology: A user's portfolio. Causal and control beliefs* (pp. 35-37). Windsor, NFER-NELSON.