

# Editorial

## Outcomes from educational interventions

Educators like to do things. We like to intervene, and we like to help people learn. Why wouldn't we? When it comes to research, we also like to describe what we did. We're often proud of the hours of effort that went into our new "thing". But what effect did we have? Deciding on the outcomes of our interventions and particularly the outcomes of our research endeavours also bears some scrutiny. The simple outcome we want to achieve is learning. But what do we mean by that? The papers included in this issue illustrate some of the breadth of outcome measures we could choose.

Measurement of knowledge is relatively straightforward. We have many assessment tools for that. One of the conundrums with education research is that almost anything improves knowledge. You would have to try very hard to design an intervention that left people knowing less than before they started. John Hattie (2009) illustrated this very well in his meta-analyses of learning interventions. He described outcomes in terms of effect sizes—how much an intervention improves an outcome compared with the general "noise" associated with the outcome being measured (mathematically, the difference in the means of two comparative groups divided by the standard deviation). Essentially, an effect size of 0.2–0.4 indicates minimal effect, or "business as usual". So, an important consideration in looking at outcomes in education research is what are we comparing our outcomes against? If we're comparing against no change, then we've set ourselves a rather low bar. Reid, Chau and Thalluri compared outcomes between two groups, where peer support was found to improve examination results for the intervention group compared with a control group. Incidentally, Hattie found some things are harmful: television and summer holidays, for example.

But health professional education, as indeed all education, is much more than knowledge. We don't just want our students to know more. We actually want them to do more. We also want them to do it consistently. Above all, we want our students to be better at making things better for our patients.

Therefore, we need to move beyond what our students know, to other measures including patient outcomes. Sounds like a great goal, but it's very tricky to measure such achievement. Aside from anything else, the outcomes of our patients are related to many things other than what our health professionals do or know. We all work in systems, and patients themselves have their own foibles, preferences and goals. What we want for our patients isn't always what they can get. So this distal, and laudable, goal of improving patient outcomes is beset by many confounding factors. That doesn't mean we should stop trying, but it does mean we need to be mindful of these confounders.

Kirkpatrick (1998) chose four general levels of outcome that could be used to evaluate an educational intervention. Craig, Hall and Phillips used a modified version of this as a way of looking at the effectiveness of an interprofessional learning intervention. While this is a useful framework, use of the term "levels" can make us regard Kirkpatrick's classifications as a hierarchy (Cook, 2013). What is important to measure is what best

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fits with the aim of the study. Student satisfaction is not a bad thing, even though it is Level 1. On the other hand, there is the famous Dr Fox experiment where a deliberately confusing lecture, given with aplomb, was rated highly by students, even though the content was nonsensical (Naftulin, Ware, & Donnelly, 1973). So, student “happy clappy” scores may not be our ideal outcome.

When looking at expressions of empathy as an outcome, an intervention had different effects depending on who looked at the outcome (Lim, Moriarty, Huthwaite, Gallagher, & Perera). Simulated patients rated students in the intervention group as more empathetic than those who did not have the intervention—but the self-ratings showed no difference between groups. This is a reminder that who looks at the outcome is also important and not just the outcome itself.

It would be a mistake to think that change in behaviour is always a measure of success. This can be assumed in the continuing professional development literature where there have been many interventions that do not result in changes in behaviour. The subtext here is that the intervention was not worthwhile, but this is too simplistic. Consider the scenario where a practitioner is already practising effectively but is having some self-doubts or is thinking of adopting a different (but less effective) practice. The practitioner then attends an education session and finds that his or her practice is actually completely sound. So he or she makes no change in practice. Does that mean the intervention was worthless? Arguably no. Confirmation of effective practice, even when it results in no change, is another outcome that could be meaningful.

There are many other things we could measure as outcomes of our educational endeavours. For example, Gaida, Seville, Cope, Dalwood, Morgan and Maloney identified some economic outcomes, where production costs were recouped after 3 years. To the list of outcomes used by the studies in this issue, we could add many more, including intention to act vs habitually acting, systems outcomes, motivation and career choice, to name just a few.

Of course, not everything that counts can be counted. Furthermore, not all outcomes of importance can be measured. We should resist the temptation to focus on the measurable at the expense of the important. Qualitative measures are useful here, for example student self-discovery experiences (Olson & Burns), collaboration among health professionals (Cunningham, O’Donoghue, & Jennings), a power shift towards the student, improved readiness for and receptiveness to feedback, and increased control over learning (Gaida et al.). Such qualitative approaches also help us look for the unexpected outcomes. We don’t always know what effect our interventions might have. We also don’t know what harm they might have, and there are often some surprises. So keeping an open mind is also useful. Moreover, knowing how and why something works is often more useful than just knowing the outcome effects that it has.

So where does this leave us? Let’s be conscious of the outcomes that are meaningful to measure. We wouldn’t consider designing an educational intervention without thinking of the desired learning outcomes. Likewise, we must not design an educational research

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project without considering the outcomes we wish to achieve. But in doing this, let's continue to think broadly and always focus on both the meaningful and unexpected, not just the easy to measure.

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