One pervasive challenge in educational research is that learning is often hard to measure. In research meetings with colleagues in which we try to articulate measurable learning outcomes, we have at times wished we were teaching students to tie their shoes. Now there is a learning outcome you can see. You can assess the integrity of the knot. You can time the knot-tying process. You can even undo the knot to better analyse it.

Higher education features some learning outcomes that have the overt properties of shoe tying, but many outcomes are far more difficult to operationalize. This is particularly true of e-learning environments. Even if such environments were designed to teach shoe tying, and if students could provide virtual examples of tied shoes, how can we know that the student did the tying and didn’t simply use www.tieupyourshoes.com or Google “shoe tying?”

These are thorny issues, but they must be addressed because we can no longer teach subjects like the fundamentals of biology or nursing skills in purely small group, face-to-face environments. Furthermore, there are other skills, such as those associated with managing human networks, that may be taught more effectively using online environments and we need to be able to assess this possibility. Herein lays the value of *E-Learning Technologies and Evidence-Based Assessment Approaches*. Here, we are introduced to research intended to identify important learning outcomes in e-learning environments and assess them validly and reliably. We desperately need the methods presented in this book.

Early research in online learning revealed what has come to be known as “the no significant differences phenomenon.” When comparing online learning to face-to-face learning of the same material, neither environment proved superior. Critics argued that these studies were assessing the wrong things. For example, if an online learning environment claimed to facilitate social construction of knowledge (as is the case with the use of Second Life), it made little sense to use multiple choice tests to measure that which has been socially constructed. Rather, it is necessary to measure the processes of social construction as much as the outcomes of it.

Thus, there are chapters in *E-Learning Technologies and Evidence-Based Assessment Approaches* presenting much-improved methods for assessing learning processes, both individual and social, as much as for assessing learning outcomes. See, for example, Hakkarainen’s chapter on “meaningful learning,” and Brack’s on the biology bridging program for incoming medical students. In the bridging program, wiki spaces provide the virtual equivalent of a well-tied pair of shoes.

Process is important, but there are programs for which an assessment of outcomes is essential. For these, the use of technologies such as audience response systems is very promising. Again, the issues of validity and reliability introduced by Markham and Hurst in Chapter I are very relevant, in that the value of such response systems is only realized when the right questions are asked and good tasks are assigned.
By “the right questions,” I mean those that are valid probes into what students come into a learning environment with (knowledge and misconceptions), and what they develop over the course of time. This process of moving from misconception to reconception is crucial for students in higher education.

In *E-Learning Technologies and Evidence-Based Assessment Approaches*, the important point is made that assessment drives learning. The message that “We evaluate that which we value” is not lost on our students. Thus, their work as learners is shaped, in large part, by the assessment strategies a course offers, and our work as educators is informed by the data that such strategies yield. We simply must get this right, and *E-Learning Technologies and Evidence-Based Assessment Approaches*, helps us do just that.

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