Chapter 11

Systematic Evaluation of Innovative Pedagogies in Teacher Education Courses and Practica

Neal Shambaugh
West Virginia University, USA

ABSTRACT

Innovative pedagogies create new learning environments to help public school students achieve 21st century learning outcomes. Evaluating agreed upon criteria of what constitutes success with these pedagogies produces evidence that supports teacher effectiveness, which is embedded in teacher education program accountability reports and school improvement plans. This chapter describes how innovative pedagogies can be evaluated, first modeled in teacher education methods courses by higher education faculty and then taught in public schools by preservice teachers. The chapter first connects evaluation for teacher education program accreditation, program improvement goals, preservice teacher performance, and public school improvement plans. The chapter then examines the formative evaluation of innovative pedagogies during an implementation period and a more formal evaluation after an adequate test. Each level of evaluation is addressed for both teacher education courses and practica placements. Recommendations for best practices and research directions are provided.

INTRODUCTION: EVALUATING INNOVATIVE PEDAGOGIES

Public school teachers are being held accountable for student learning in light of ever-changing student diversity and calls for educating students who have the knowledge, skills, and attitudes needed to succeed in their personal and professional lives and contribute to the society of the 21st century (Ronfeldt, Brockman, & Campbell, 2018). The P21 Framework for 21st Century Learning (P21 Partnership for 21st Century Learning, 2018), for example, includes student outcomes of learning and innovation skills (creativity and innovation, critical thinking and problem solving, communication, and collaboration);

key subject skills and global awareness, financial and entrepreneurial skills, civic and health literacies; information, media, and technology skills; and life and career skills. The Framework also acknowledges support systems consisting of standards and assessment, curriculum and instruction, professional development, and learning environments. The P21 framework, as an example of 21st century learning outcomes, also specifies the need for "innovative learning methods that integrate the use of supportive technologies, inquiry and problem-based approaches and higher order thinking skills" (P21 Partnership for 21st Century Learning, 2018).

To achieve these 21st century learning outcomes numerous forms of new pedagogies are being used, such as flipped classrooms (Huang & Hong, 2016; Ke, 2016), personalized learning (Liu, McKelroy, Corliss, & Carrigan, 2017), embodied learning (Lan, Fang, Hsiao, & Chen, 2018), and games (Denham, 2018), along with new forms of technologies, including online environments (Garcia-Cabrero, B., Hoover, M., Lajoie, S. P., Andrade-Santoyo, N. L., Quevedo-Rodriguez, L. M., & Wong, J., 2018), augmented reality (Santos, Chen, Taketomi, Yamamoto, Miyazaki, & Kato, 2014), collaborative work spaces or maker spaces (Martinez & Stager, 2013), and mobile devices (Giannakas, Kambourakis, Papasalouros, & Gritzalis, 2018). What makes any pedagogy innovative is how it creates a new learning environment to assist a range of learners achieve 21st century learning outcomes. The issue for teachers has always been how to assist students to achieve these learning outcomes. An earlier chapter in this handbook described a systematic approach for the selection of innovative pedagogies based on student differences, learning outcomes, and the context or reality of the instructional setting. This chapter examines how to evaluate their use in both teacher education courses and practica.

Frequently, the discussion of innovative pedagogies has focused on new forms of technology use and its evaluation (Owston, 2008). Technology integration has always provided an opportunity for teacher educators, public school educators, and preservice teachers to learn how to use new technology in the classroom. Such efforts are assisted by frameworks of technology integration practices, such as the TPACK or Technological Pedagogical Content Knowledge framework, which acknowledges school context and teacher knowledge (Koehler & Mishra, 2009). Considering e-Learning programs for training and higher education settings, Mandinach (2005) suggested questions that could be used to evaluate innovative pedagogies across an academic program, addressing student learning, pedagogy, institutional context, and policy. Because of its attention to context, the CIAO! Framework (Scanlon, Jones, Barnard, Thompson, & Calder, 2000) posed three dimensions of technology-based learning to include the context of a course, interactions of students with technology and with each other, and learning outcomes.

Teacher education, involving teacher educators, preservice teachers, and cooperating teachers, provides a unique setting for mutual learning environment in which all educators have the potential to model and try out technology and pedagogy, and more broadly re-examine and revise their teaching to meet the needs of 21st century learners. The processes of program evaluation (Fitzpatrick, Sanders, & Worthen, 2010) can provide evidence of media, technology, and new pedagogy effectiveness for teacher education accountability standards and public school improvement plans (see Shambaugh, 2013, for a process to implement a technology integration plan in teacher education). New pedagogies and their varying forms of student activity and products provide an informative source of evidence for student learning, much broader than technology integration, as the full mix of teaching decisions are acknowledged rather than just the influence of a new technology. Some research studies have tried in comparison studies to "prove" that one technology works better than others or that technology supplants a traditional form of teaching. However, these studies have resulted in no significant difference between what is being compared, because the goal of such research, to determine causality through the control of variables across

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