

## Chapter 47

# Designing Assessment, Assessing Instructional Design: From Pedagogical Concepts to Practical Applications

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### ABSTRACT

*Assessment plays a vital role in delivering, evaluating, monitoring, improving and shaping learning experiences on the Web, at the desk and in the classroom. In the process of orchestrating educational technologies instructional designers are often confronted with the challenge of designing or deploying creative and authentic assessment techniques. For an instructional designer, the focus of assessment can be on individual learning, organizational improvement or the evaluation of educational technologies. A common question across these domains is how to translate pedagogical concepts such as authenticity and creativity into concrete practical applications and metrics. Educational technologies can support creative processes and offer connections to authentic contexts, just as well as they can curtail creativity and foster standardized testing routines. The chapter discusses theoretical frameworks and provides examples of the conceptual development and implementation of assessment approaches in three different areas: Needs assessment, impact assessment and classroom assessment.*

### INTRODUCTION

In the fabric of education assessment is the thread that creates the seams and stitches that define the pattern of learning experiences in today's higher education ecosystem: "Practically everybody in the academic community gets assessed these days, and practically everybody assesses somebody else" (Astin, 2012). Why is assessment such a ubiquitous topic, particularly when it comes to educational technology? At an expert meeting about 'Futures for Technology Enhanced Learning (TEL)' that took place June 2011 in Lisbon, Portugal renowned educational technology specialists, among others David Kennedy,

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James Morrison and George Siemens were gathered to talk about their vision for technology enhanced learning within the next ten years. From the diverse collection of topics that emerged for further debate, assessment was selected as “the fabric of education of education”. An important challenge for designing meaningful assessment touches upon the very nature of learning: the tension between performance and mastery. Learners in various settings for various reasons find themselves in a situation where their attention and focus is directed towards performing, i.e., getting a good grade, passing an exam, completing a certificate. Meaningful transfer learning, however, requires not only the immediate desire to succeed in a test, but also the volition to master a skill or gain a new competence that can impact the learner’s trajectory in future settings. As Ambjorn Naeve, moderator of the 2011 TEL expert meeting pointed out: “We need to get past the emulation society, where instead of learning you spend all your energy on convincing others what you know” (TELMAP, 2011).

This chapter discusses the role of assessment in the context of instructional design. It offers guidance in form of an exploratory tour d’horizon of the crossing of design and assessment to instructional design professionals as well as researchers and practitioners engaged in the scholarship of teaching and learning (SoTL).

## INSTRUCTIONAL DESIGN

Gustavson and Branch (2002) characterize instructional design as a complex process that is creative, active and iterative. A comprehensive definition stems from Reiser (2001): “The field of instructional design and technology encompasses the analysis of learning and performance problems, and the design, development, implementation, evaluation and management of instructional and noninstructional processes and resources intended to improve learning and performance in a variety of settings, particularly educational institutions and the workplace” (Reiser, 2001, 57).

Instructional designers make use of systematic procedures and employ a variety of instructional media in order to orchestrate teaching and learning experiences that achieve specific goals, such as effectiveness, efficiency, relevance, flow or transfer learning. Instructional design (ID) models (see Figure 1) aggregate theoretical concepts in a process workflow to inform instructional-strategy decisions, among the most referenced are:

- **ADDIE (cf. Molenda, 2003):** Instructional design is conceptualized as an iterative process that comprises of the five distinct steps analysis, design, development, implementation and evaluation.
- **Pepple in the Pond (Merrill, 2002):** This clearly sequenced, task-driven training approach was developed by David Merrill. Starting from a concrete problem scenario prior knowledge is activated, the learners then watch a demonstration of the skills needed to solve the problem, they practice the application of these skills and eventually transfer to a new situation. Many web-based training modules follow this model.
- **Constructivist Learning Environments (Jonassen, 1999):** David Jonassen’s model follows the constructivist understanding of learning as a process in which the learner develops and tests hypotheses to generate knowledge through active engagement. The strong emphasis of learner centered activities is reflected in this model. Important steps in this approach are modeling, coaching and scaffolding.

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