Chapter 7
Promoting Complex Learning through Relevant Learning Experiences for the Health Sciences

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ABSTRACT

Educators in the health professions are faced with the daunting task of teaching highly complex skill acquisition and application, often without a framework to guide the development of instruction. Different learning outcomes warrant different learning strategies. Instructional sequencing is dependent upon the various learning outcomes that are intended for a particular course or instructional unit. Complex learning integrates a learner's knowledge, skills, and attitudes, new skill sets and the transference of learning in an applied environment. This chapter discusses the way complex learning can be incorporated within a health education framework that integrates the foundations of basic science, communication skills, and physical exam/procedural skills in a hands-on, learner-centered environment, providing alignment with performance assessment and expected outcomes.

INTRODUCTION

Traditional instruction in many health science programs (medical, nursing, and allied health) involves the sequential presentation of complex material to students who are then expected to apply this learning to real life situations. Different learning outcomes warrant different learning strategies. Instructional sequencing is dependent upon the various learning outcomes that are intended for a particular course or instructional unit. Complex learning integrates a learner's knowledge, skills, and attitudes, new skill sets and the transference of learning in an applied environment. A challenge that many instructors face when teaching complex learning tasks is that learners are expected to be able to draw from prior knowledge from various subjects/areas in order to approach problem-solving critically. In order to do so, students must be provided with supplantive learning opportunities that will foster complex learning skills.

The Four Component/Instructional Design (4C/ID) model provides a format for teaching complex learning by proceeding through 10 steps that are categorized within learning tasks, supportive information, procedural information, and part-task practice (van Merriënboer, Clark & de Croock, 2002). This model can be incorporated within a health education framework that integrates the foundations of basic science, communication skills, and physical exam/procedural skills in a hands-on, learner-centered environment, providing alignment with performance assessment and expected outcomes.

Instructional tools will be provided for faculty to assist in the development of complex learning activities. In addition, evaluative tools will also be provided to assist with assessing these activities. This chapter will be of particular interest to health science educators who teach problem solving and draw from disciplines and subject matter in both simulated and non-simulated learning environments.

BACKGROUND

Educators in the health professions are faced with the daunting task of teaching highly complex skill acquisition and application, often without a framework to guide the development of instruction. An adapted version of the 4C-ID instructional design model to help educators in the health professions design effective instruction along with some key tips to design complex learning activities is presented in this chapter (vanMerriënboer & Kirschner, 2013). This instructional design model has been used in the preclinical years to design an instructional module on vaccines, as well as in the postgraduate medical training years to design simulation activities.

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