

Chapter 2.1

Planning for Technology Integration

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ABSTRACT

Three models structure the planning for technology integration into instruction. Institutional needs are assessed for three dimensions suggested in Gilbert's, "Model of Human Competence." The areas needing addressing are typically within instruction; therefore, the process steps of a generic instructional design model are used. Within designing for instruction, Bransford's, "variables affecting learning," are the focal points organizational planners need to consider in planning instruction. Instruction is framed as "faculty-as-learner centered instruction." The variables are also a significant aspect of the content of instruction for faculty because faculty will use them in planning their own instruction integrated with technology.

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INTRODUCTION

The work of integrating technology into instruction at an institution may be daunting, particularly in the absence of a plan. To support technology integration, a plan is described with the goal of competence in the area of teaching. The plan calls for assessing the co-requisite conditions of an institution and their influences on the goal. The underlying model is Thomas Gilbert's model of human competence (Chevalier, 2003; Gilbert, 1978). The institutional needs assessment is combined with the general process of an instructional design model. The latter is used because a typical institutional condition needing intervention is the need for instruction among personnel. In practice, the entire process is best organized as a series of questions. The discussion is outlined according to that logic. The process flow will be familiar to instructional technologists and organizational

planners and it will appeal to their sense of a systemic approach to problem solution.

In the first part of the plan, technology is identified, and needs are assessed. The next two steps are instructional planning based on three reasons. First, most work in technology integration has a training need—personnel need to understand institutional information, or how, why, and when to use the target technology. Second, instructional planning models may be fairly wide-ranging and are flexible enough to apply to organizational systems—they work well for that purpose. Third, it is useful to consider faculty as the benefactors of learner-centered instruction, it may be considered as, “faculty-as-learner centered instruction.”

There are several strategies for the integration process that are based on research in the adoption of instructional technology. They are meeting subjective norms, which is akin to peer pressure, and the management of institutional expectations. The dimension for deciding the use of either strategy is the relative novelty or newness of a technology to an institution.

In summary, the process is workable, practical, and effective; that is, if followed it does help one to achieve technology integration at an institution. This ought to offer a strong measure of reassurance to those professionals undertaking the task. The challenge, as often happens, is in the actual implementation.

THE PLAN

Which technology is needed?

This is a wide-ranging question with conceptual as well as practical answers. For the purposes of institutional planning, the latter are more important; there are several notions of what technology is and which technology is wanted. Begin by considering the materials, tools, and processes that are useful for instruction. The technology used in instruction typically refers to computers or the software applications for computers.

The kinds of technology most institutional planners deal with include communication systems such as e-mail or messaging, and software applications for administrative use including student auditing systems. They also include instructional technologies that encompass software and hardware to facilitate learning. These include online learning management systems, individual audio devices, and online virtual worlds.

The purpose of identifying technology is to focus your work and to select that with which you will work. The result of this process is an answer to the question of which technology you want faculty to use in instruction. You know what is needed in general. Specify what is needed and set that as a standard expectation.

Part A: Assess the Institution Conceptual Model

1. Define Competence

A standard expectation has been established that faculty will use the given technology. (The working example in this chapter will be that faculty will use a learning management system (LMS) in instruction.) Express the expectation into operational terms—faculty will be competent in integrating an LMS in instruction. There may be other expectations, but for whichever expectation is decided, the criterion for it is competence. Identifying the expectation thus allows for using Thomas Gilbert’s model of human competence to structure this phase of the overall process (Chevalier, 2003; Gilbert, 1978).

The model suggests three co-requisite dimensions addressed from two areas of the institution. The dimensions are information, instrumentation, and motivation. The two areas are the external and the internal. The external refers to the institution. Typically, it includes the administration and its members who support and provide the conditions for the success of an individual faculty member. Because it does not include faculty, it is external to

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