

Chapter 1.15

Achieving Classroom Excellence in a Virtual Classroom

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ABSTRACT

Research substantiates the effectiveness of problem-based, project-based, and case-based learning as effective tools for student learning. Research also shows the frustration of faculty who have offered excellent teaching in a classroom but who are faced with the challenge of shifting the whole classroom into an online environment. This chapter is focused on ways to transform and redesign a traditional classroom course into an online virtual classroom using the practical application of the problem/project-based approach to learning using online case-based instruction as authentic and active strategies. The chapter shares instructional design strategies as well as the effectiveness of problem-based interactive multimedia case delivery.

INTRODUCTION

PBL is an acronym for project-based learning and for problem-based learning. The two are sometimes confused in the literature on instruction strategies, and in practice. Project-based learning was started in 1962 in New York State's Niskayuna public schools. Problem-based learning (PBL) was first developed in McMaster University in the 1970s. Regardless of what it is called, PBL is learning that results from working in the context of complex, real-world problems. As a pedagogy, it is "a model for classroom activity that shifts away from the classroom practice of short, isolated teacher-centered lessons and instead emphasizes learning activities that are long-term, interdisciplinary, student-centered, and integrated with real-world issues and practices" (The Multimedia Project, 1997-2001b). Problem/project-based

learning aims to encourage a self-directed learning style that promotes reasoning and communication skills. Problem/project-based learning also increases students' knowledge base, and, at the same time, addresses a wide range of clinical problems. As students consider problems from a perspective which requires analysis, they strive to resolve questions that may not have a single right answer.

BACKGROUND

The differences in problem-based and project-based learning are rather academic and do not really affect the approach used in classrooms, traditional or virtual. In this chapter the two terms are used synonymously. However, for those individuals who wish to examine the fine lines of similarities and differences between problem-based and project-based learning, a brief discussion follows.

Project-Based or Problem-Based?

Both concepts are based on real-world, work-based situations and use a constructivist-oriented approach to learning. Both approaches are student-centered and the teacher's role is one of facilitator or coach. Students use multiple sources of information to "solve" the problem and cooperative groups are frequently used to enhance student learning. Assessment is authentic and performance-based. It is a way of getting to competency-based mastery learning (The Multimedia Project, 1997-2001a).

Some individuals view project-based learning as being a K-12 strategy. Since problem-based learning originated in the medical profession, it might be viewed as a collegiate approach. The problems are in the form of a scenario or case study that is designed to mimic life. Therefore, the problems may or may not have a "correct"

answer or solution. On the other hand, project-based learning has an end artifact in mind and requires specific content, knowledge, and skills. Projects frequently raise more than one problem for the student to solve. Another difference stated in the literature is the model used in the approach to student learning. Problem-based learning uses an "inquiry" model in which the student organizes previous knowledge, poses questions, identifies knowledge gaps, and plans/researches/shares information and/or conclusions. Sometimes the problem is designed to result in clearly stated solutions, but students engage in learning and information gathering. Project-based learning, on the other hand, uses a production model in which there is a specific purpose, audience, research, design, and plan for obtaining an end product. The projects vary widely in scope, time frame, technology used, and sophistication.

Scope of Instruction Using Problem/Project-Based Learning

Traditional classrooms use problem/project-based learning in various subject areas, especially in those in which the real world situations considerably affect the value of curriculum. Problem/project-based learning can be used to teach an entire course or some aspects of a course. It can also be used effectively in traditional classrooms or online in virtual classrooms. In the "real world" of careers, problems arise that will require students to analyze complex issues, formulate solutions, and to work well with others in the process. Through problem/project-based learning, instructors can help students develop the skills that will serve them well as professionals. Problem/project-based learning emphasizes collaborative work among students and the process enhances critical-thinking capabilities and facilitates improved social skills.

Research shows that problem-based learning (PBL) enriches students' learning. Evaluative

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