

Chapter 4.3

Educating Our Students in Computer Application Concepts: A Case for Problem-Based Learning

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ABSTRACT

Colleges of business have dealt with teaching computer literacy and advanced computer application concepts for many years, often with much difficulty. Traditional approaches to provide this type of instruction, that is, teaching tool-related features in a lecture in a computer lab, may not be the best medium for this type of material. Indeed, textbook publishers struggle as they attempt to compile and organize appropriate material. Faculty responsible for these courses often find it difficult to satisfy students. This paper discusses problem-based learning (PBL) as an alternative approach to teaching computer application concepts, operationally defined herein as Microsoft Excel and Access, both very popular tools in use today. First PBL is identified in general, then we look at how it is developed and how it compares with more traditional instructional approaches.

A scenario to be integrated into a semester-long course involving computer application concepts based on PBL is also presented. The paper concludes with suggestions for research and concluding remarks.

INTRODUCTION

It probably would not surprise most Management Information Systems faculty and academics that both accredited and nonaccredited colleges of business continue to struggle with instruction in computer application concepts aimed at undergraduate students. A review of business school Web sites would indicate that a wide array of courses, course names, and course schedules exist: Introduction to Computers, Management Information Systems, and Microcomputer Applications might be some course names that

could be found. Some of these courses might be sophomore level, whereas others might be found at the junior level. In other instances, more than one course might be found. One class might deal exclusively with computer application concepts, such as Microsoft Office, whereas another might relate more to MIS itself. Furthermore, the topic related to teaching MIS and application concepts is often raised in postings to ISWORLD (www.isworld.org). Thus, it is of little surprise that in the end, questions and uncertainties about these classes exist.

The focus of this perception-based paper is toward teaching computer application concepts such as Microsoft Office. That is not to say that Microsoft Office is the sole way to teach these types of concepts. Indeed, some schools might teach other tools such as HTML, JAVA, Visual Basic, and so forth. In effect, however, my thoughts related to teaching these concepts are independent of the particular tool used in the classroom. At the same time, Microsoft Office, with particular emphasis on Excel and Access but with some instruction focusing perhaps on PowerPoint and FrontPage, seems to be the most prominent tool used today to provide students with basic computer application concepts.

With numerous surveys, questions posed on ISWORLD, questions raised by faculty at conferences, and continuing efforts by textbook publishers to develop the right set of books for these tools and applications, MIS faculty continue to struggle with this type of class. At the same time, students themselves raise objections. On the one hand, some students are already well skilled in these concepts as a result of taking similar classes in high school or at the community college level. Still others have worked with these tools professionally and do not see the need for taking another class that is perceived to have little to no value. In other instances where two required classes are taught, the overlap between the first and second class is so similar as to again provide seemingly little value to the student.

Instead of rehashing the same material over and over again, however, my thought is to suggest an alternative approach to teaching computer application concepts. The approach is called problem-based learning (PBL). This approach is by no means new or unique. However, it does seem to be somewhat unique to teaching computer application concepts; indeed, it appears to be quite unique in colleges of business. Ideally, readers of the paper may question the approach presented leading them to investigate it more completely in terms of its applicability and use in this type of class. Additionally, new approaches such as this would lead to empirical research as well.

In the next section, a brief overview of PBL, its concepts, and how it might be applied to teaching computer application concepts is presented. A suggested research agenda follows. Conclusions are presented last.

PROBLEM-BASED LEARNING

In mid-January 2006 I searched one of the online database indices that our University subscribes to, EBSCO (www.ebsco.com/home/). I searched for the term “problem-based learning” and was rewarded with 1,125 hits. Choosing to refine the search somewhat, I again searched on “problem-based learning,” this time as part of the title of articles. A total of 383 articles in that database contained “problem-based learning” as part of the title at the time of the search. This very unscientific sampling process indicated that the vast majority of articles are from the medical field: *Medical Education*, *Journal of Clinical Anesthesia*, *Medical Teacher*, and *Physiotherapy* are representative of the journals containing those articles. In fact, I continued with this process and noted that just one article found was related to colleges of business. That article appeared in the *International Journal of Technology Management*, and it dealt with entrepreneurship. I was unable to identify any articles dealing with computer tools, such as

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