TECHNOLOGY INFUSED PEDAGOGY AND DELIVERY….A SURE BET?
A PROPOSAL FOR PANEL DISCUSSION
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ABSTRACT

The history of technology being "infused" into pedagogy and delivery is a long one comprising of many forms and levels of infusion. The theme of the conference is entitled, "Technology Infused Pedagogy and Delivery…A Sure Bet". The purpose of this discussion is to take this statement and make it a question. We can then begin to raise the issues of what, how and why concerning this "bet". This allows us to raise questions looking at the issue of technology, at least philosophically, and its effects on how we think about and how we develop our classes.

INTRODUCTION

The purpose of this discussion is to retrace in some way, the evolution of technology in the classroom and the types of technology used. Perhaps too, and more importantly, to ask philosophically the question of why do we use it? Is there a change and how much of a change is present in the way we design a course based on the technology we use or intend to use?, Can we achieve the same results with less technology, (i.e. are we making the complicated more simple or the simple more complicated)?, Is it (Technology Infused Pedagogy and Delivery) the "sure bet " we believe it to be?

As one reviews the ABSEL literature, the benefits of using technology in the classroom have been a topic of discussion and debate for quite some time. We use technology in the classroom to enhance both the learning experience for the student and the technology experience for the instructor. While some have found that technology has been an asset in the classroom (Vik 1984, Peach 1998), others have some reservations as to its merits (Ballie, et.al 1984, Sugges 1980).

To help in the determination of "Infused Technology" being a "Sure Bet", we should examine and define these terms separately. We begin by defining "Technology" and "Infused". Technology can be defined as the sum total of the technical means employed to meet the material needs of a society (classroom, course). Infused can be defined as instilling or inculcating, or "to become a part of". Therefore, "Technology Infused" can be defined as, apart from the pedagogy, the total means used to instill or make known the course content to a particular group. This means the compilation of various forms of technology and the level of the use of those various forms.

HISTORICAL BACKGROUND/EVIDENCE

Research has been conducted through the ABSEL literature to find instances of types of infused technology, ranging from low to high forms. Low forms of technology can be defined as the use of simple cases analysis to video tape machines (Cotlar, 1974). High forms of technology can be defined as Total Enterprise Simulations that require the use of integrated spreadsheets to the use of integrated modules used to show the level of integration of functional disciplines and more of the behavioral aspects to managing an organization.

We wanted to show the various ways and types of technology that have been infused overtime, at least through the ABSEL literature. These various ways are pinpointed in the introduction of new types and variations of technology in the classroom.

In many ways we still see evidence of early forms of technology still being used or in some sense "rediscovered" in recent years. We can cite examples of various forms of technology as starters for discussion.

Low Technology One of the earliest instances reported in the ABSEL literature was the use of video tape and computer learning experiences (Cotlar, 1974). The main enhancement here was that these other forms of media/technology (video-tape, computer programs, and computer data files) would help overcome common inadequacies of the written case method. The overall benefit from this form of infused technology is that students get a more realistic experience in situation analysis, symptom identification, problem solving alternative development and trial implementation (Cotlar, 1974).

The introduction of board games is another form of low technology.

There are two which we are citing; Congruence II and The E-Commerce Game. The purpose of Congruence II is to teach the strategic importance of congruence in strategy, quality and finance through the firm's life cycle. It is a total enterprise game so that it would mirror an entrepreneurial environment. It allows for all participants to be "winners" in that it allows for participative learning, in a creative way, about efficacious choices and the value of interface congruence.

The E-Commerce game teaches participants how to compete more effectively in E-Commerce as they learn the importance of continuous strategic decision making.   It provides for the opportunity of learning about different strategies in different industries and how strategy can vary by the nature of the firm and industry (and teams).

Middle Technology Into this category fall such technologies as E-Learning (Gold, 2001), Web-based applications (Boscia, et.al, 2001) (Pillutla, 2000), classroom management, software, common use technology (Forte, et.al., 2003), multimedia (Snyder, et.al., 1998) and Artificial Intelligence (Arbogast, 1998).

Areas which are affected by E-learning fall within two realms of education, university/college and corporate training. There is a growing national trend by universities to develop high quality internet courses. The same phenomenon is occurring in the corporate training market. Two reasons can be cited for this: first, diversity is increasing the need for different pedagogical approaches to accommodate differences in learning styles. E-learning allows for this to occur.

Secondly, standardization of technology is reducing problems of compatibility, accessibility, and usability of e-learning products. Such is the case for the application of internet applications for simulation and experiential learning. While e-learning is not a substitute for a traditional education, it is a highly valuable supporting pedagogy. Those schools that do not in some way embrace it in their classrooms will not be as effective (Gold, 2001).

Web-based tutorials are closely aligned with e-learning. Boscia (et.al, 2001) found that it was beneficial to developing a more student-centered approach to teaching.   Among the benefits were: educators will assume more of an advisory role and resource provider, while encouraging students to work more independently; computers and the Internet can be catalysts that enable student-centered practices.   Additionally, it is highly flexible and can be used in virtually any course, and can be used to teach concepts not discussed in class as well as using it to reinforce material covered in class (Boscia, et.al, 2001).

The use of tools such as course management software, common use technology to aid us in better managing the classroom, has raised additional pedagogical issues. These fall into the realm of how do we facilitate learning by providing, although unintended, opportunities for academic dishonesty by incorporating technology into the pedagogy (Forte, et.al., 2003). When considering multimedia, the focus is on outcome assessment – are students learning and does multimedia facilitate the learning process? (Synder, et.al., 1998). This would need to be addressed as course and curriculum design issues.

High Technology Artificial Intelligence (Expert Systems) have been used in the business curricula to help graduates develop applications that will help provide a sustainable competitive edge in the marketplace (Arbogast, 1998). In this instance the issue of developing AI systems that incorporate the knowledge, skill, and expertise into a computer program to assist in decision making that can lead to a possible competitive advantage. By providing a "real world" practical experiential exercise, business graduates will be in a much better position to participate in and lead such efforts in their companies.

Total Enterprise simulations are those that require making decisions from a top manager point of view and the strategic integration of decision variables from all major components of an organization (Keys, 1987). These simulations require that business plan be developed, overall strategy be determined, and decisions be made at the functional level based on congruency with upper level initiatives. These decisions are then entered into a computer simulation package and an outcome determined (Jordan, 2001). These outcomes are usually in the form of some financial performance measure and that this measure is taken to be an indicator of a level of mastery of the subject matter. The relationship between financial performance and other measures of student mastery was found to be weak or non-existent. There also was an absence of any significant relationship between individual performance measures and group performance (Anderson and Lawton, 1997).

Another form of high technology is through the use of simulations within integration modules (Green, et.al., 2003). This approach caused a redesign in newly-revised MBA curriculum at Pepperdine University. This simulation covers both behavioral and group dynamic aspects as well as functional discipline aspects of an organization. In this instance, the Business Policy Game: An International Experience was used as the backbone to the integration modules. Each module focuses on a series of four courses just completed and students are required to successfully complete each integration module before completing additional coursework.

This simulation serves several purposes: focuses on the only business operation the students use in the two integration modules and the strategy course; faculty teams become familiar with the operations of the simulation, its advantages and its shortcomings; allows for development of external interventions for which the results can be operationalized within the confines of the simulation. The advantages of this approach include: that instead of being exposed to the simulation near the end of the capstone course, the integration experience is much more richer for the students; one gains some level of familiarity and improved understanding of ways in which the impact of the

environment, their own actions, competitors' actions on their business as well as ways to deal with external interventions; students learn to recognize the very direct impact that the typical "silo-oriented" disciplines actually have on one another.

DISCUSSION ISSUES CONCERNING INFUSION

The above examples only scratch the surface of the different types of technology that can be infused into pedagogy and delivery. Given this we must carefully decide what types of technology we will want to use and ensure that it is consistent with our objectives. Furthermore we should also consider the following when deciding the "what", "how" and "why" of infusion. Questions for consideration in "ensuring the bet" include the following:

1. How do we define technology and what are the various forms technology can take?
2. Does the level of technology we employ provide the level of experience that we would like to deliver on the content and enrich the learning experience of the learner?
3. How dependent are we on technology to help deliver our course?
4. Does technology cause us to rethink how we develop and deliver our course content, as well as how we think about and design our courses?
5. What are the benefits and costs of using a particular form of technology solely or in a combination of forms? Are certain forms of technology interchangeable while still being able to maintain the quality we desire?
6. Will students be able to increase their learning as a result of the technology?

The panelists/participants would then be able to recount their experiences of how they have addressed the above issues and how they have "infused technology" into their courses. This would include both good and bad aspects . Responses will be recorded and displayed to help facilitate discussion.

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