THREE-DIMENSIONAL PEDAGOGY FOR BUSINESS IT EDUCATION

Dr. Tiki L. Suarez, Florida A&M University, tiki.suarez@famu.edu
Dr. Daaim Shabazz, Florida A&M University, daaim.shabazz@famu.edu

ABSTRACT

Information technology (IT) is developing at a blistering pace and the pedagogical methods used to teach it are evolving as well. There have been many developments in academia to accommodate the growing reliance on IT. Distance learning and web-based instruction are the latest attempts to meld traditional methods with the new methods emerging today. This subject is of great concern not only because of the natural evolution of IT, but because the demography of the college student has also changed. In this paper, we examine a novel approach used to teach IT to graduate business students at Florida A&M University's School of Business and Industry (SBI). Since business managers and CEOs are expected to possess the analytical abilities to confront a rapidly changing business cycle, the authors developed a capstone course designed to meet these concerns. In this course, we found that a "three-dimensional pedagogy" helped the advanced student enhance a broader set of critical competencies. The pedagogical model consists of three integrated silos: technical, applied and policy. This combines a variety of interactive techniques to create a "value-added" student with enhanced metaskills for business management. Our method resembles the "value chain" concept and is designed to create a dynamic learning environment to prevent the rapid obsolescence of acquired competencies. The focus of this paper is to (1) introduce the course, (2) explain the three-dimensional pedagogy model, (3) present an overview of its objectives and (4) provide a synopsis of our findings.

Keywords: Information Technology, Business Education, Dynamic Learning, Three-Dimensional Pedagogy

INTRODUCTION

It is common knowledge that applied technology is one of the most prevalent issues in society and is increasing in its scope and influence. Due to the increasing reliance on technology and the blistering pace at which it is developing, new business models are emerging which force corporations to be more nimble. Similar to the corporate entity, business schools have often had to adjust to existing business paradigm shifts to remain relevant.

Educational institutions are usually slower to adapt to emerging trends, but many have taken a more aggressive approach to enhancing their offerings. Most institutions are moving away from disciplinary silos and are gravitating toward the integration of business disciplines emphasizing how each has been woven together by “systemic network effects.”

In the past few decades, academicians have argued the logic of incorporating subjects such as: International Business, Total Quality Management (TQM), and e-Business. It is clear that reactionary attempts to keep pace with the rapid pace of business leads to inefficiencies,
redundancies, and bloated budgets. For example, Internet Commerce course offerings have dropped precipitously since the late 90s [4].

Today’s pedagogical methods have changed as technology has moved into the center stage. Concepts like “distance-learning” and “web-based instruction” have helped meet the challenges, but both of these methods have brought mixed results. It is clear that in teaching technological concepts, multiple approaches are needed [3]. Thus, in this paper a “three-dimensional” pedagogical method is used to accommodate the various learning styles of the students. The three-dimensional method proposed in this paper attempts to use old and new methods with the expressed intent of providing a dynamic learning environment to meet the dynamism of the technology industry.

BACKGROUND

One-third of all minority students going to college do so through minority-serving institutions. Given the rate of population growth among minorities, those institutions will play a vital role in making sure that minority students are technologically-literate [1].

Like most other business schools, Florida A&M University’s School of Business and Industry (SBI) is faced with the challenge of maintaining a curriculum that is relevant and up-to-date. Florida A&M University is one of more than 100 institutions known as a Historically-Black Colleges and University, or “HBCU.” With an enrollment of approximately 13,000 students, Florida A&M University is the country’s largest HBCU and SBI is considered one of the marquee programs at the institution.

Noted for its competitive Professional MBA Program, SBI also has an ever-growing Baccalaureate program. In the spring of 2002, three professors embarked on an unprecedented effort to shore up the curriculum by creating what amounted to a technological elective with three-dimensions: three professors, three content areas and three pedagogical methods. The MBA program would be the focus of this experimental course.

SBI currently attempts to address the ever-changing technological industry by providing courses such as Introduction to Business Systems, Systems Theory and Design, and Global Logistics. However, the curriculum lacks a unifying capstone course that marshals the students’ coursework and internship experience to address these issues explicitly. The intention of this course is to fill a void in the SBI curriculum and ensure that students gain maximum exposure to emerging technological trends in the business sector.

This graduate course was created as a result of the 2002 HBCU Curriculum Development Grant from Procter & Gamble and the project was to commence in the Fall 2002. Such a course provides exposure to applied technologies, which focus on how they are utilized in global corporations. This course displays a commitment to an interdisciplinary approach and will allow each of the three faculty members the opportunity to contribute to and draw from the expertise of his/her colleagues.
THREE-DIMENSIONAL PEDAGOGY

There are examples of many modes of teaching and learning currently occurring at, or from, this university. Many new possibilities are emerging. There is much to learn about such alternatives particularly as students start to demand more flexibility in the learning environment [7].

Conceptual Framework

In this age of emerging technologies, flexible methods are needed for the deliverance of course content.” Many older techniques still pervade the academic arena and many professors remain reticent to adopt new pedagogical models. This does not mean to suggest that pedagogical methods using technology platforms are the panacea. In fact, such reactionary approaches to pedagogy can result in disjointed methods and inefficiencies.

To address this issue, Lofman uses what is called a “complex adaptive pedagogy” in which he extols the merits of “complexity theory.” This theory requires three conditions: (1) the professor must relinquish control (2) students must be adaptive and (3) the instructor-student relationship itself must be transformed for these mutual adaptive capabilities [5].

Cognitive psychology research suggests that learning is a product of the agreement between instructor teaching strategies and the individual differences among students (Corno; Coverdale) [2, 3]. What is becoming apparent is the fact that a multidimensional approach is needed for accommodating a variety of learning styles and delivery systems. The key factor in future pedagogical methods will be the concept of “dynamic learning.”

In more general terms, the dynamic nature of learning, different learner preferences, the customized learning content and the establishment of non-sequential learning scenarios seem to be crucial obstacles for the majority of technology supported learning platforms. From this point of view, we argue that technology supported learning is neither an effective solution nor a motivational driver unless its value dimension is understood and exploited [6].

The Three-Dimensional Pedagogical Model

The given model borrows from the value chain construct [6], which in this case, the student would be the product going through the process of “production.” The deliverables would be analytical and practical knowledge attainment in the three core areas. In this project, the three-dimensional pedagogy was viewed as a way of maximizing the students’ exposure to core technological concepts while creating a dynamic learning environment. This method may differ from traditional methods in that the team-taught approach and 3D model result in a combination of platforms to deliver content. See Figure 1 below:
In the figure above, the course model features three core areas:

1. technical (understanding how technology works)
2. applied (applying technology to real situations)
3. policy (rules which regulate the use of technology)

In addition, there would be three main pedagogical methods for the content:

1. classroom activities (lectures, discussions, assignments, exams)
2. guest speakers (lectures, interaction with speaker)
3. audio/video (videos/overhead slides/web content)

Given this 3X3 model, there are nine possible ways in which material can be digested.

**Findings**

At the end of the grant period, a survey instrument was given to the students to determine the impact of the dynamic learning approach. Due to a small population (18), there was an absence of significant patterns in the data collected and the results are basically used for exploratory purposes. Five questions were given: three were 5-point Likert scale questions (identified as Q1-Q3) and the last two were three-point rank-order questions (identified as RM1-3 and RC1-3):

**Q1:** The course utilized competencies learned in previous courses for business management.
**Q2:** The course provided a dynamic learning environment and instructors displayed interactive techniques.
**Q3:** The course utilized student's analytical abilities in terms of the three content areas.
**RM1-3:** Rank from 1-3 the methods of learning you found most helpful in learning technological concepts in the class: (audio/visual, guest speakers, and class activities)
RC1-3: Rank from 1-3 the content areas that you found most useful in the class: (technical, applied, policy)

Explanation

Because of the small population, distribution assumptions could not be made, thus non-parametric tests were run to check for relationships and significance levels. In the $\chi^2$ tests, the only significance was found in $Q2$ ($p=.026$, $df=2$) with $RM1$ next ($p=.098$, $df=2$). Thus, the data suggest that the students viewed the learning environment as dynamic and interactive. Moreover, they appear to have believed, by a small margin, that the learning of core concepts in the course was best supported by classroom activities.

Classroom activities (RC1) were considered the preferred pedagogical method. After generating non-parametric Kruskal-Wallis test, a significant relationship existed between $Q2$ and $RC1$ ($p=.036$, $df=2$). This may reveal that the dynamic and interactive environment may have had a bearing on their ability to learn how technology applied to business concepts. $Q1$ ($p=.095$, $df=2$) may reveal that the students were able to use earlier concepts to understand additional applied business concepts. When running a cross tab (RM1 by RC1), the data show that engaging in classroom activities may have been the most useful when learning applied technological concepts.

Observations

In this exploratory exercise, it appears that classroom activities remain the preferred method of learning if flexible and dynamic methods are employed. Surprisingly, guest speakers were not the favored medium for learning core concepts. Appearances by guest speakers often assume that the student has a certain level of understanding and that may not be the case. It is also interesting to note that the classroom setting played a big role in the interactivity. These initial observations show that while dynamic learning concepts were prevalent in our course, further research and data analysis will perhaps provide greater certainty that the three-dimensional model is a viable pedagogical platform.

CONCLUSIONS

The course discussed in this paper functions as a capstone course at a vital state of students within the School of Business and Industry at Florida A&M University’s experience. The course couples three integrated teaching methods within three content areas. This is initiated to better prepare students for the business sector with SBI’s goal of creating students capable of high performance in global environments.

A dynamic learning environment coupled with a diverse array of teaching methods from collaborating instructors (tag-team) provides an innovative opportunity for student instruction. Multiple learning styles are introduced in the classroom to assist the student in reaching a higher level of learning and understanding of the material presented. Our course implemented a “three-dimensional” pedagogical method within a similar environment (dynamic learning) to accommodate the various learning styles or cognitive differences of the students.
REFERENCES


