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UNIVERSITY PROFESSORS' ADAPTATION TO TEACHING ON-LINE COURSES UNDER TRYING PERSONAL AND PROFESSIONAL CONDITIONS IN THE AFTERMATH OF HURRICANE KATRINA

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ABSTRACT

This paper examines how professors at universities severely damaged by Hurricane Katrina adjusted to the challenges of teaching on-line courses in the immediate aftermath of the hurricane in the New Orleans area.

What stands out in this experience is the role of technology (Internet, e-mail, etc.) in enabling on-line courses to be taught with faculty and students scattered over a wide geographical area under trying conditions. Both faculty and students had to adapt to chaotic and in some cases primitive situations. Out-of-the box thinking was needed to provide access to Internet facilities and support materials such as textbooks. Both faculty and students had to learn very quickly how to instruct and take on-line courses.

What does the future hold? The faculty remains uncertain about the future outlook. Many felt that on-line courses offered flexibility to the typical student and should remain an option for future students. Students at this metropolitan university have different needs. The typical undergraduate student is in his/her late 20's, has a family and works full or part-time. Many professors still do not enjoy teaching on-line classes, but do feel it is important to students and should remain an option in addition to classroom instruction.

NON-COMPUTER TECHNOLOGY INNOVATIONS FOR EDUCATIONAL MARKETS

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ABSTRACT

Educational leadership has many needs such as campus safety, construction, cost cutting, image building, and education. Such needs constitute market opportunities for inventors, producers, and distributors of technology. However, foreign innovations may not reach U.S. markets for years, because suppliers do not want to deal with multinational marketing problems. Also, suppliers may prefer to focus on high volume business-to-business markets rather than diversify into educational markets. As a result, educational leadership that seeks out technology opportunities can gain competitive advantages in cost cutting image building, revenue generation, and other performance areas.

This article identifies and describes several types of non-computer technologies that can benefit education leadership. It provides useful examples of market applications and advantages of each type. The technologies include: thermosyphoning, photovoltaics, phase-change materials, ergonomics, air knives, polymer resins, fullerens, ambient pollution controls, and several others. The technologies offer many opportunities to educational leaders for cost reduction, revenue generation, favorable publicity, and student education.

A COMPARISON OF SERVICE LEARNING AND EMPLOYEE VOLUNTEERING PROGRAMS

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ABSTRACT

A growing recognition of the social responsibilities of organizations to their communities has resulted in an increase in volunteer activities in the United States. Two types of structured programs that encourage social engagement are service learning programs at universities and employee volunteering programs at business organizations. Such programs are generally considered to be beneficial to the participants (students or employees), the community organization and the sponsoring organization. This paper explores the purposes of such programs and compares their structures and activities. Suggestions for lessons that employee volunteering programs can learn from service learning programs are included.

THE IMPACT OF A PROGRAM FOR THE DISADVANTAGED ON STUDENT RETENTION

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ABSTRACT

This study compares the freshman to sophomore retention rate for all freshmen at a medium-sized college to the retention rate for freshmen who participated in a program for disadvantaged students. The retention rate (over a three-year period) was nearly identical for the two groups. That finding is an indicator of the benefits of the special program, given that the students who participated in the program had lower SAT scores, lower high school grade point averages, and lower family incomes compared to all freshmen at the college. Based on previous research in the area of student retention, one would clearly expect a significantly higher freshman to sophomore retention rate for the larger group.

INTRODUCTION

Many programs aimed at achieving equal opportunity in education had their beginnings in the Higher Education Act of 1965. One program created was Student Support Services (SSS), formerly known as Special Services for Disadvantaged Students. As described by McCants (2002), the program is aimed at helping low-income and first generation college students and individuals with disabilities graduate from college. Services provided include assistance with obtaining financial aid, special instruction, and academic and non-academic counseling.

A medium-sized, private, liberal arts college in the Northeast provided these free services for twenty years to eligible students with the help of funding from the U.S. Department of Education. To participate in the program, a student needed to meet one or more of the following criteria: neither parent graduated from a four-year college; the family's taxable income was below a level mandated by the federal government; the student had a physical or learning disability. Among the specific services provided to students participating in the program were personal, academic, and financial aid counseling, help with study skills, tutoring, career planning, peer mentoring, and exposure to cultural enrichment activities.

In this study, we examine data for a recent three year period. Of specific interest is a comparison of the freshman to sophomore retention rate for the group of students participating in the special program to that for all students enrolled in the college during the same time period. The table below presents some important data characteristics for the two sets of students:

TABLE

Data Characteristics for a three-year period

	All Freshmen	Freshmen Participating in the Program
Total Enrolled	2368	130
Number Retained (%)	1809 (76.4%)	99 (76.2%)
Academic Background		
Average SAT Score		
All in the specific set	996	894
Retained	1001	904
Non-Retained	982	865
Average High School GPA		
All in the specific set	2.69	2.49
Retained	2.75	2.50
Non-Retained	2.50	2.47
Gender and Residency		
Females Enrolled (% Retained)	1173 (78.7%)	68 (77.9%)
Males Enrolled (% Retained)	1195 (74.3%)	62 (74.2%)
Residence Hall Students (% Retained)	1114 (78.2%)	43 (81.4%)
Off-Campus Students (% Retained)	1254 (74.9%)	87 (73.6%)
Income		
$1 - $39,999 low income=high need	24%	52%
$40,000 - $79,999 medium income=moderate need	25%	26%
$80,000 - $119, 999 high income=low need	22%	10%
$120,000+ or no reported income=little or no need	29%	12%
Financial Aid		
% Receiving any kind of aid	98%	99%
% Receiving grants	97%	97%
% Receiving loans	51%	74%
% Receiving work study	23%	28%
% Receiving grant and loan package	30%	45%
% Receiving grant and work study package	2%	1%
% Receiving loan and work study package	0%	0%
% Receiving grant and loan and work study package	21%	27%

From the table, we see that the overall retention rate was nearly identical for the two sets of students, but that outcome speaks very highly for the program for the disadvantaged students for several reasons:

Both the average SAT score and the average high school GPA for students participating in the program were significantly lower than the same measures for the student body as a whole. There is consistent evidence in the literature that student grades, achievement, or academic performance have an overwhelming positive correlation with persistence (St. John, 1989; St. John, 1990; St. John, Kirshstein, & Noel, 1991; Mallette & Cabrera, 1991;

Cabrera, Nora, and Castaneda, 1992; Perna, 1997; Tinto, 1997; Murtaugh, Burns, & Schuster, 1999; St. John, Hu, Simmons & Musoba, 2001).

The overwhelming majority of students participating in the special program were in the two lowest income categories under consideration, whereas there was a fairly even distribution among income categories when looking at all freshmen. It has been often revealed that students from families with larger incomes tend to persist more than students from families with lower incomes (St. John, 1989; Cabrera, Stampen, & Hanson, 1990; St. John, 1990; St. John et al., 1991).

Students participating in the program received loans at a much greater rate than the student body as a whole. Some research, including that done at the institution in question (Braunstein, Lesser, and Pescatrice, 2006) has shown that the receipt of loans (either alone or in a package with grant money) has a negative impact on retention.

Logistic regression techniques were also employed to analyze the data. One of the goals of using logistic regression is to attempt to calculate the change in the probability of retention associated with a change in one of the demographic, academic, or financial factors. For instance, one might try to find out how much an extra $1,000 of grant money increases the probability of a student being retained. Or one might calculate the change in the probability of retention associated with being a commuter as opposed to a resident student (holding the values of all other demographic, academic, and financial variables constant). Previous models estimated for all freshmen at the institution (Braunstein et al., 2006) have found that ethnicity/race, high school grades, family income, and financial aid (for instance, grants have a positive effect; loans have a negative effect) are all statistically significant factors in determining whether or not a freshman student is retained. The race/ethnicity variable has been the most significant by far, in that non-Whites were much less likely to return than were Whites. For the freshmen participating in the special program at the college, race/ethnicity was the only statistically significant variable, but was so at a much lower level of significance than for the college's freshmen as a whole. So the programs and services provided to the disadvantaged students in some sense "leveled the playing field", in that the retention of those students did not seem to be influenced (or, in the case of ethnicity, was influenced to a lesser degree) by some of the factors that seemed to influence the retention of the college's freshmen in general.

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STRATEGIES FOR PROMOTING ACTIVE LEARNING IN A PRINCIPLES OF ACCOUNTING COURSE

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ABSTRACT

This article presents strategies for creating an active learning environment in a principles of accounting course. These strategies, which promote independent and lifelong learning, include the use of interactive lecture materials, collaborative in-class exercises, and self-directed out-of-class assignments. The strategies presented should not only assist instructors in teaching a more active and effective introductory accounting course, but also offer the benefits of stimulating and increasing student interest in accounting as a major.

LEADING BY EXAMPLE: INVESTIGATING THE BEHAVIORS AND MOTIVATIONS OF FUTURE EDUCATION LEADERS

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ABSTRACT

Cheating has permeated many facets of American life. Reports on cheating are found in business, the media and on college campuses. Perhaps one of the more disturbing trends is reports on increasing cheating among grade and high school teachers and administrators. This makes the behavior, motivation and training of education students relevant for scrutiny. The paper examines academic dishonesty among college students in the education department training to be future teachers. The study uncovers through factor analysis four salient dimensions of cheating, namely Flagrant Cheating, Insidious Cheating, Collusion and Illicit Collaboration. It also uncovers the key motivators of cheating, identifies relevant individual characteristics and demonstrates their relation to the salient dimensions of cheating Policy implications are also discussed to improve ethics education.

BUSINESS FACULTY TIME MANAGEMENT: ADAPTATIONS FROM BUSINESS

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ABSTRACT

Teaching, research, and service expectations of the academic profession may sometimes seem overwhelming, but we often hear that it is all very doable if we can just learn to take control of our time. Most business professors are very self-motivated and understand the value of time. However, with so many activities, requirements, and demands from administrators, colleagues and students we may at times feel that we control none of our time.

Much of the interest in time management focuses on the association between inputs and outputs, or productivity on the job. Some ways to become more productive are to use our input time wisely and minimize the amount of input time that is wasted. We also hear that productivity leads to job satisfaction. If we have control of our time, and we believe that we are getting everything that we want done, we should be very happy.

Much writing exists about time management in business settings; however, there has not been much written about time management in the academic professions and even less written about time management for academics in the business disciplines. Therefore, this paper provides a review of the literature about time management in business and adapts it to the particular needs of faculty. We discuss methods of drafting time management plans, which includes assessing our situations and determining how to best arrange our time. We also provide methods of assessing the outcomes of our plans. We discuss some of the suggestions given for saving time, and finally, we use our in-house survey data to discuss and give suggestions on how to avoid the "top ten" time wasters for faculty. This paper should be of interest to faculty members that are interested in learning and reinforcing the beliefs about ways to get more day-to-day output from inputs of time.

DEMOGRAPHIC FACTORS AND STUDENT PREFERENCES ON THE SYLLABUS IN THE PRINCIPLES OF ACCOUNTING COURSE

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ABSTRACT

At one time, the course syllabus was a one-page document. Today's typical college syllabus is a multiple-page document that addresses a number of issues and contingencies. This paper presents the results of a survey of 1,726 students from 31 universities in 19 states regarding the course syllabus. The survey instrument was administered during the spring 2002 term and contained 28 items that previous research indicates are likely to appear on a course syllabus. The primary purpose of this study is to assess the relative importance students in the Principles of Accounting course place on different items that frequently appear on a course syllabus. The results are analyzed by the following demographic characteristics: gender, age, years of college experience, and grade point average. The findings of the study indicate that students do not attach the same amount of importance to all syllabus components and that the level of perceived importance varies by the demographic factors. Faculty members may use the findings of this study to adjust their syllabi to improve communication to different types of students.

THE ISSUE OF GRADE DIVERGENCE IN HIGHER EDUCATION BETWEEN BUSINESS AND OTHER FIELDS OF STUDY: AN ANALYSIS OF GRADE INFLATION

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ABSTRACT

This study examined the level of grade inflation experienced by college graduate cohorts between two time periods: 1993 and 2000. Research emphasis was centered upon grade inflation of graduates in business and compared to eleven other academic fields of study. The data for this study originated from the Baccalaureate and Beyond Longitudinal Study (B&B) series conducted by the National Center for Educational Statistics. Through independent sample t-tests, the results showed significant grade inflation in the GPA of college graduates had occurred in the interim between these two time periods. Specifically, it was found that cumulative and within major GPAs had increased across all twelve fields of study at means of 0.23 and 0.21 grade points, respectively. One-way analysis of variance (ANOVA) procedures also indicated that while grade inflation did occur within each of the twelve academic fields of study chosen for this study, some fields experienced a disproportionate rate of grade inflation in relation to the other fields. Post-hoc tests revealed that graduates from the business field experienced grade inflation that was significantly different than several other fields of study. Notably, the grade inflation level within major GPA from business graduates was higher than graduates in engineering, life sciences, mathematics, and physical sciences but less than education and professional fields. The level of grade inflation within cumulative GPA of business graduates was found to be less than graduates in health, life sciences, mathematics, and physical sciences but greater than graduates in professional fields of study.

INTRODUCTION

Academic achievement as a research topic is prevalent within the existing literature on higher education in the United States. The most common measurement of academic achievement is provided through the assignment of some form of grading or marking system (Basinger, 1997; Betts, 1995). Colleges and universities almost universally assess student academic achievement through an administrative policy whereby faculty members assign a letter or numerical grade for individual courses to students (Grove & Wasserman, 2004; Iyasere, 1984). Administrators in turn utilize the grades assigned by faculty members and convert them to a scale commonly referred to as a quality point or grade point average (GPA) to create a measure of academic success (Murray & Wren, 2003; Riley, Checca, Singer, & Worthington, 1994). The trend whereby the overall grades of college graduates has continued to increase at a swift rate is often referred to as grade inflation.

One of the aspects of grade inflation that has received less attention and dedicated research is that grade inflation has not occurred unilaterally across various academic disciplines and individual colleges within postsecondary institutions (Becker, 1997; Shea, 1994). This difference in overall student GPAs has shown grades to increase at an uneven rate across various academic disciplines, an occurrence that has been referred to by Freeman (1999) as grade divergence.

Specifically, grades in business and natural sciences tend to be lower and less affected by grade inflation than grades in other fields such as education, humanities, and the pre-professional fields such as law or medicine (Becker, 1997; Shea, 1994). It is from the divergence point-of-view proposed by Freeman (1999) concerning the differences between fields of study in grade inflation this study is focused. Specifically, the area of business is highlighted and its interrelationship to the eleven other fields chosen for this study.

METHODOLOGY

The data utilized for this study was obtained from the Baccalaureate and Beyond Longitudinal Study (B&B) series conducted by the National Center for Educational Statistics (NCES), a department of the U.S. Department of Education. The B&B series was a nationally representative sample consisting of more than 10,000 college graduates from approximately 648 institutions of higher education. Specifically, two time periods (1993 and 2000/01) were selected to serve as the populations for this study, representing two unique cohorts of college graduates. This data originated from two restricted data sets that contained the individual survey data.

Variable selection from the B&B data sets was performed using software and a related tool provided by the NCES. This software, an electronic codebook (ECB), allowed the researchers to choose the necessary variables and related data and use Statistical Package for Social Sciences (SPSS) coding to conduct the appropriate statistical analyses. Variables chosen from each B&B data set included cumulative GPA and within major GPA for each college graduate participating in the survey. Also, two new variables were created by this study's authors to measure the level of grade inflation for cumulative and within major GPA using these existing variables from B&B.

RESEARCH FINDINGS AND ANALYSES

The results of this study are presented in three parts. First, a set of chi-square analyses were conducted to control for any significant differences in the demographic characteristics and distribution of the twelve major fields of study between the two B&B time periods. Second, two separate independent samples *t*-tests were conducted for cumulative and major GPA scores to confirm the existence of grade inflation between the two B&B time periods. Finally, one way analysis of variance (ANOVA) procedures were conducted among the twelve fields of study to display any significant differences in grade inflation that occurred from 1993 to 2000.

Differences in Samples

Changing demographic characteristics of college graduates have been cited as a contributing factor for an increase in GPA over time. For this reason, the following four variables were tested for significant variations across the two time periods chosen for this study: gender, age, race, and the highest educational level of the graduate's parents. A chi square analysis revealed none of the four student characteristic variables experienced significant changes between the B&B:93 and B&B:2000/01 studies. Therefore, a change in graduate's demographic characteristics between time periods can be excluded as an explanatory variable for the level of grade inflation.

Following the definition of grade inflation offered by Hadley and Vitale (1985), along with Grove and Wasserman (2004), it was necessary to test for increasing academic achievement between 1993 and 2000. A significant increase would suggest that an increase in college graduate's academic ability could be used to explain the increase in student GPA while a nonsignificant test would rule out increased academic ability as an explanatory variable for grade inflation. A variable from B&B for standardized college entrance examination scores was used as a proxy for academic ability. This variable was a combined variable generated from the college entrance scores from

American College Testing (ACT) and the Scholastic Aptitude Test (SAT). Testing with chi square revealed that no significant changes occurred in academic achievement that might explain grade inflation between periods.

Finally, a chi-square analysis was used to determine if the proportion of fields of study of graduates from the B&B:2000/01 cohort differed from B&B:93 graduates. No significant difference was found which would indicate that the twelve fields of study are evenly distributed by year of graduation. This even distribution effectively eliminated the changing of the percentage of majors in any specific field as a valid explanatory variable for grade inflation.

Testing of Grade Inflation Between B&B Time Periods

To assess the grade inflation that occurred between study periods, two separate independent samples *t*-test procedures were conducted, one that tested cumulative GPA and one that tested the major GPA earned by college graduates participating in the study. Conducting separate tests for cumulative and major GPA was necessary to display any trends within GPA that might occur between a graduate's overall coursework and only coursework within his or her academic field of study.

Testing of Grade Inflation – Cumulative GPA

An independent-samples *t*-test was conducted to compare the mean cumulative GPAs earned from college graduates sampled by the 1993 B&B study and college graduates sampled by the 2000/01 B&B study. The *t*-test was found to be significant, $t\ (20{,}042) = 37.36$, $p < .01$. College graduates from the 2000/01 B&B study ($M = 3.20$, $SD = 0.47$) on the average achieved a higher cumulative GPA than those college graduates surveyed for the 1993 B&B study ($M = 2.97$, $SD = 0.40$). The 95% confidence intervals were 3.19 and 3.21 for the 2000 college graduates; intervals for 1993 college graduates were 2.97 and 2.99.

The level of grade inflation that occurred in the approximately seven-year elapsed time period between the administration of the B&B:93 and the B&B:2000/01 was measured as the difference between cumulative GPA scores earned by college graduates of each respective time period. The difference of 0.23 grade points within cumulative GPA was found to represent significant grade inflation.

Testing of Grade Inflation – Major GPA

An independent-samples *t*-test was conducted to compare the mean, major GPAs earned from college graduates sampled by the 1993 and 2000/01 B&B Studies. The test was significant, $t\ (20{,}042) = 32.68$, $p < .01$. College graduates from the 2000/01 B&B study ($M = 3.33$, $SD = 0.47$) on the average achieved a higher within-major GPA than those college graduates surveyed for the 1993 B&B study ($M = 3.12$, $SD = 0.42$). The 95% confidence intervals were 3.32 and 3.34 for the 2000 college graduates; the intervals for 1993 graduates were 3.11 and 3.13.

The level of grade inflation that occurred in the approximately seven-year elapsed time period between the administration of the B&B:93 and the B&B:2000/01 was measured as the difference between major GPA scores earned by college graduates of each respective time period. The difference of 0.21 grade points within major GPA was found to represent significant grade inflation.

Testing of Grade Divergence Among Fields of Study

To adequately assess the level grade inflation that occurred among fields of study, two separate ANOVA procedures were conducted, one that tested cumulative GPA and one that tested the major GPA earned by college graduates participating in the study. As indicated earlier, conducting separate tests for cumulative and major GPA was necessary to display any trends within GPA that might occur between a graduate's overall coursework and only coursework within his or her academic field of study.

Analysis of Grade Divergence – Cumulative GPA

A one-way analysis of variance (ANOVA) was conducted to compare the mean levels of grade inflation within the cumulative GPA among the twelve academic major fields collected for this study. The ANOVA showed that there is a significant difference of grade inflation within cumulative GPA across twelve academic majors $F(11, 10010) = 25.263$, $p < .01$.

Within the twelve fields of study selected for this analysis, mathematics ($M = 0.31$) and physical sciences ($M = 0.30$) experienced the greatest level of grade inflation within the cumulative GPA of college graduates. Following, in order of descending order of grade inflation experienced, were health ($M = 0.26$), engineering ($M = 0.25$), humanities ($M = 0.23$), business ($M = 0.22$), computer/information systems ($M = 0.22$), education ($M = 0.22$), and social sciences ($M = 0.21$). The lowest level of grade inflation was experienced by graduates in professional ($M = 0.20$) and technological ($M = 0.19$) fields of study.

Analysis of Grade Divergence – Major GPA

A one-way analysis of variance (ANOVA) was conducted to compare the mean levels of grade inflation among the twelve academic major fields of study collected for this study. The ANOVA showed that there is a significant difference among the level of grade inflation within major GPA across twelve academic fields of study $F(11,10010) = 20.929$, $p < .01$.

Within the twelve fields of study selected for this analysis, technology ($M = 0.25$), education ($M = 0.23$), and professional ($M = 0.23$) experienced the greatest level of grade inflation within the major GPA of college graduates. Following, in order of descending order of grade inflation experienced, were social sciences ($M = 0.22$), computer/information systems ($M = 0.21$), humanities ($M = 0.21$), business ($M = 0.20$), health ($M = 0.19$), and life sciences ($M = 0.15$). The lowest level of grade inflation was experienced by graduates in physical sciences ($M = 0.14$) and mathematics ($M = 0.13$) fields of study.

CONCLUSION

Based on our study, we concluded that the GPA of college graduates increased significantly from the college graduate cohort participating in the B&B:93 Longitudinal Study to the B&B:2000/01 cohort. More specifically, cumulative and major GPA increased 0.23 and 0.21 grade points, respectively, over the interim between these two data collection periods. Controlling for changing demographic characteristics of these graduates and the distribution of field of study, these increases can be viewed as grade inflation.

The findings of this study lend validity to the theory of grade compression offered by Kamber and Biggs (2004). Under the grade compression assumption, grades can only rise to a certain level and cannot inflate perpetually because the highest GPA remains a 4.0. This is in contrast to currency inflation, which theoretically contains no ceiling and can rise infinitely.

Summerville, Ridley, and Maris (1990) state that fields of study such as business, mathematics, and physical sciences are considered "low grading" departments and experience little or no grade inflation while fields of study such as education or humanities are considered "high grading" fields of study. While the time period of this current research study (1993-2000) are different from the one by Summerville, Ridley, and Maris (1990), the field of business and mathematics experienced higher levels of grade inflation than other traditional "high grading" fields. It is quite possible that grade inflation in fields such as education are leveling off while fields such as business are playing "catch-up."

While this examination of grade inflation and its subset of grade divergence does not offer a panacea, the trends that emerged were intriguing. This study will hopefully serve as a guide to stimulate future interest and further research in the increase of college graduate's educational achievement, specifically within the business disciplines.

REFERENCES

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EXCEL BASED CLASSROOM TEACHING TOOLS

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ABSTRACT

This paper presents some useful Excel tools for classroom teaching and management. The paper is constructed based on the years of experience of classroom teaching of subjects like business statistics, information systems, operations management, etc. Theses tools are designed to teach Excel as well as the business concepts in statistics or other related area. It coaches using business examples, formulae writing and problem simulation. The tools are designed without sophisticated macro or other computer programming intensive techniques. These are largely designed for business students who may not have strong computer science background. The main focus of these tools is that a student with some working experience of Excel could easily replicate this knowledge in other problem solving.

The Microsoft Office tools are most commonly used office productivity software in the business. In this presentation, main focus is on Excel. This is based on a constant feed back from alumni and others that Excel is one of the most important computer-based tools used by the business professionals, especially the students working as business analyst, financial analyst, or other jobs where numerical manipulations are important. Over the years, I realized that students often had trouble writing the formulae in Excel to solve the problems. Therefore any large real problem with several calculations or manipulations seemed to be a daunting task to them. In real business situations there might not help available if they must use Excel based analysis. This tool could work as a reference tool when help is not available. Furthermore, this tool helps them understand the mechanism of how calculations are performed in Excel so they can perform these tasks without my help with some practice.

The main objective of these tools is to develop and to enhance problem solving skills of the students using Excel. The specific emphasis is to use Excel as the tool to solve business problems.

ACCOUNTING PROGRAMS AT HISTORICALLY BLACK COLLEGES AND UNIVERSITIES THEN AND NOW: AN ANALYSIS OF CHANGES SINCE 1994

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ABSTRACT

For decades, historically black colleges and universities (HBCUs) have played a primary role in the educational, economic and professional development of African Americans. Many African American graduates from these institutions continue to make significant contributions to the accounting profession. This article describes changes in HBCU accounting programs and faculties from 1994 to 2006. We find that since 1994, doctoral programs in business have been established at two HBCUs; the number of AACSB accredited business programs has considerably increased; and, there has been a substantial increase in the number and percentage of HCBU accounting faculty with doctoral degrees. This information documents the progress of accounting programs at HBCUs and provides a base-line for measuring future changes.

GLOBAL OUTSOURCING: A STUDY OF STUDENT ATTITUDES AND IMPLICATIONS FOR TEACHING INTERNATIONAL BUSINESS

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ABSTRACT

This paper presents the results of a survey of 284 students designed to assess attitudes toward global outsourcing. During the last few years the issue of global outsourcing has become a very much debated economic topic. Since AACSB requires that an international perspective be included in the core curriculum of a business administration degree, we were interested in learning how business school students view global outsourcing. Essentially what we learned is that overall, business majors are more positive toward global outsourcing than are non-business majors. However, we also learned that older students (>25) and MBA students are more pessimistic toward global outsourcing. Those "older" and MBA's we mostly concerned with the impact of outsourcing on jobs. Implications for teaching international business are discussed.

PROBLEM BASED LEARNING: CROSS-DISCIPLINARY LESSONS AND INSIGHTS

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ABSTRACT

This paper makes the case for creating problem-based learning opportunities for students in abroad array of settings. Medical educators pioneered the problem-based teaching methodology, but it has wide application across a variety of disciplines. Since the problem-based approach to instruction is unfamiliar to many novice and seasoned teachers alike, this paper provides a rationale for its use and provides specific advice for designing the problems, making assignments, evaluating the work and providing feedback to students. The examples used reflect the backgrounds of the authors: one is a professor of business and the other is a professor art. When instructors incorporate problem-based learning in their classroom, they will find that their students work harder and master the course work more completely.

INTRODUCTION

Problem-based learning provides teachers with an opportunity to engage students more directly in the learning process. Problem solving produces knowledge, understanding, skills and insights that cannot be gained in the more traditional classroom methods of lectures, discussions and pencil-and-paper tests. Business case studies, student-led consulting projects, art projects and other problem-based projects allow the teacher and students to deal with more complex, detailed and subtle issues than is possible in simpler, more objective assignments such as multiple-choice tests. Critical thinking, logical reasoning, innovative analysis, persuasive use of evidence and creativity are among the capabilities more appropriately assessed by problem-based assignments. Cases require students to engage in divergent thinking, conduct research, marshal evidence and make persuasive arguments. Artistic works and creative performances by their very nature elicit more open-ended, subjective assessments by the teacher.

How to Make Problem-Based Assignments

Teachers must make assignments as specifically and in as much detail as possible, clearly defining the parameters and problem solving tactics. Vague assignments confuse and de-motivate students. Whenever possible, the teacher should demonstrate what an outstanding piece of work looks like. No matter whether the assignment is a case, a term paper, short story or piece of art, show the class exemplary samples from previous classes and from established professionals in the field. Students must develop their skill level and understanding from previous classes' works while also developing aspirations derived from established professional examples.

Spend time identifying elements of the examples that embody the qualities of excellence. It also helps students to see samples of work that clearly has not adequately solved the assignment parameters. Whenever showing student example work, teachers should explain why it received the grade that it did so students clearly understand the assignment parameters and level of expected mastery. It is critical, however, to protect the identity of the creator of the example student work for obvious reasons.

The more detailed and specific the explanation, fewer complaints and misunderstandings will arise post-project. Grading criteria should be outlined specifically indicating how much weight will be given to each criterion, and how the scores will be combined into a project grade. By discussing the criteria, the weighting and the grading process up front, student anxiety is reduced and clarity is increased as they plan and execute their assignments. When students see that their grades reflect previously announced policies and procedures, they are less likely to think that their grades were arbitrary, subjective or biased and are more willing to strive for a higher level of excellence.

Communicating Feedback to Students

Well-structured feedback provides both evaluation and instruction. The evaluative component of feedback lets student know how well they are doing both in terms of teacher expectation and relative performance compared to other students. The overall grade should tell the student whether the work completed was superior, adequate or poor. The grade distribution, which should be shared with the students, communicates how well the student performed compared to other students in the class. If the instructor effectively communicates the project parameters, grading criteria and measurement scale, students will already have an idea of their level of performance. Therefore teacher feedback more often than not validates student opinions on their own level of performance – a bonus to learning in any classroom.

The most useful type of feedback teaches student to perform better in the future. A grade tells a student something useful about his or her past performance. Comments about the strengths and weaknesses of student solutions help a student's future performance. The instructor should provide feedback quickly. If possible, projects need to be graded and feedback provided by the next class session. In all cases, feedback should be provided within a week for optimum learning and retention.

A successful teacher must focus feedback on the work, not the character of the student. If a student feels under attack personally, the response will be defensive and little will be absorbed let alone learned by the student. It is understood that all teachers are responsible, even required, to evaluate and critique the work of students. It is also the responsibility of the teacher to ensure that feedback does not make students feel rejected as persons. When providing instructive criticism, find aspects of the assignment solution that deserve praise. Every attempt has at least one successful aspect. Offering initial praise increases the student's receptiveness to more critical comments made later in the process. Next, identify flaws, errors or problems, offering possible alternate solutions to the problem area. This approach greatly enhances the learning potential of any subjective assignment.

An Example of Problem-based Learning in Action

All course curriculums are divided into learning blocks consisting of skill building components, a widely practiced concept. Among those building blocks are retention building assignments. Although the following modality is a studio art based assignment, the methodology is easily adapted into other disciplines. The teaching of art is largely based upon instilling a process for identifying creativity and manifesting a physical end product. One solution for developing relevancy and meaning among art students is through parameter based problem solving of experiential learning assignments. This includes establishing criteria which must be incorporated into a final product and allowing the student to arrive at a solution based on their own research, interest and experience. Aspects include focusing on the following areas:

The Creative Process – It is necessary to clearly establish a methodology for creativity and teach students how to employ that process. The process includes but is not limited to:

1) Preparation – forming the question, gathering information
2) Incubation – set information aside, relax and let intuition provide insight

3) Illumination – experience leading to valued result, can also be a hunch
4) Verification/revision – test the solution and other's responses through critical evaluation and redo if necessary

Parameter Based Problem Solving – The method includes six components briefly described in the following list. A specific experiential learning assignment - Clay Spirit Rattle - is explained in detail below including student solution examples on the next page.

1) **Concepts of Subject** – Identify core learning blocks.
2) **Technical Skills Involved in Execution** – Identify core technical blocks.
3) **Content or Meaning** – Establish conceptual parameters soliciting student bias.
4) **Interpretation, and Output** – Students organize above components (building block, mastery of technical ability and content) into a cohesive, communicative solution.
5) **Rework and Solution** – Faculty provide venues for critical evaluation, rework of mistakes, and successful completion of project parameters in appropriate time frames.
6) **Evaluation** – Assessments involve students and their peers through critiques, reflective discussions and student surveys.

THE SPIRIT RATTLE: CLAY MUSICAL INSTRUMENTS

Example modality in action: The ultimate responsibility as a studio arts educator is to ensure student's conceptual and mechanical abilities for identifying the metaphorical and realizing a physical end product.

1) **Ceramic Building Block (Pinch Pot Techniques)** – Identify and define core components to learning blocks specific to subject matter. **Project Introduction**: Students will investigate primitive firing (pre-industrial) techniques by studying the pueblo potter's tradition. In many pre-industrial societies the techniques developed for forming and firing have remained unchanged over time. Concepts of symbolism, primitivism and its historical aspects pertaining to clay, spirituality and sound are addressed through the works of Artist such as Maria Martinez.
2) **Technical Skills Involved in Execution** – Each problem needs to involve a technical skill building block current with the chosen field. **Technical Skills Addressed**: Students learn clay hand-building techniques including pinch pot form, building mass with convex/concave shape, carving/burnishing skills and establishing sound dynamics from ceramic form.
3) **Content or Meaning** – Conceptual building blocks need to solicit personal experience and independent thought which establish relevance and meaning for students. **Project Parameters suitable for Adaptive Solutions**: Students fashion clay instruments using pinch techniques. An enclosed space measuring at least six inches will be created by joining a minimum of four pinch forms together. Final form should address symbolic content based on student research and personal motivation. The instruments will be burnished to a high gloss and clay beads inserted for sound.

As long as students address the five parameters: (1) pinch technique, (2) four part final form, (3) symbolic content, (4) carved imagery, (5) burnished surface – an unlimited number of solutions are possible, adaptive to student interest and experience. Figure 1 shows a variety of possible sculptural solutions and Figure 2 shows symbolic carving details. Although works have similar characteristics because of building and firing techniques, each solution is distinctly individual:

Figure 1 – Student Solutions to Sprit Rattle Assignment

Figure 2 – Detail of Sprit Rattle Carving Solution

4) **Interpretation, and Eventual Output** – Student solutions are addressed in formal critique settings. In this case, student designs are tested in a group setting by learning basic drum rhythms, separating tonal differences among clay instruments and playing collective rhythms. Students must evaluate the functionality and quality of the rattles as well as content symbolism and form.
5) **Rework and Solution** – Students have the opportunity to make adjustments and re-fabricate instruments to solve problems.

6) Project Time Table:

Day 1 – Teacher introduces project assignment clearly establishing five project parameters, technical skills involved and expected level of mastery. Student examples are shown as well as slides from similar work in the professional field. Students begin creative process by sketching design ideas.

Day 2 – Students present sketches informally in a class critique setting. Students must comment on peer idea sketches while teacher provides project input and adjustment ideas to student initial sketches. Students rework if necessary project designs. Teacher introduces hands-on demonstrations of the technical execution for pinch pots.

Day 3 – Students engage in building pinch pots with teacher guidance where necessary and learn how to "join" pinch pot forms into final composition.

Day 4 – Students complete initial forming of projects. Teacher demonstrates how to carve and burnish the rattles. Student homework is to carve rattles and let them dry.

Day 5 – Students present their carvings informally in a class critique setting (same tactics as day 2). Students then burnish their rattles.

Day 6 – Students learn how to fire their musical instruments in a kiln.

Day 7 – Students present their work in a formal class critique receiving a grade and constructive criticism on their performance.

CONCLUSIONS

Criteria based problem solving is not limited to students of the arts. It can be adapted to any discipline or age group. Students, however, benefit most from the empowerment of taking responsibility for locating their own strength under guidance of their discipline educators.

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THE EXPERIENCE OF EXPERIENTIAL EXERCISES IN MANAGEMENT CLASSES: A PROFESSOR'S VIEW

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ABSTRACT

Research documents the benefits of experiential exercises in business courses. The experiential exercise is a teaching method that allows students to be engaged in the learning process. Experiential learning is widely recognized as an effective way for students to learn about essential business management topics. Just to name a few, experiential exercises are employed in understanding such topics as social responsibility and ethics, team effectiveness, decision making, organizational and international culture, emotional intelligence, and conflict management. The key to experiential exercises is that if provides an opportunity to understand management in a manner that shifts the student from a passive to an active participant in the learning process. However, the experiential exercise can be both fulfilling and terrifying for the professor. This paper offers practical guidelines to assist professors in the implementation of experiential exercises in management classes.

A NONPARAMETRIC ANALYSIS OF FACTORS AFFECTING PRE-TRAINING MOTIVATION

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ABSTRACT

Motivation to learn, or pre-training motivation, has been found to be related to actual learning. This paper presents research that explores certain personality and demographic characteristics that are proposed to affect pre-training motivation. A conceptual foundation is developed for the relationship between pre-training motivation and the following personality and demographic characteristics: training reputation, intrinsic incentives, compliance (required or elective course), age, birth order, parents' education, classification (sophomore, junior, senior), student's major, scholarship status, current GPA, anticipated grade, and student's employment status.

Utilizing business students attending a sophomore level business course taught at a university located in the southern United States and established scales, nonparametric analysis was conducted. In assessing the relationship between pre-training motivation and the other variables, it was evident that the demographic variables, if they were not categorical, could easily be converted to a categorical variety. As a result, crosstabulation was used to examine the existence of a relationship between the pre-training motivation variable and the other variables. Chi-square was calculated for each pair and, if found significant, Kendall's Tau-c was used to determine the strength of the relationship. A total of 114 students completed the questionnaires with 14 eliminated due to incomplete or improper responses. Due to a lack of responses, relationships between pre-training motivation and birth order, and scholarship status could not be determined.

It was found that, as expected, pre-training motivation improves with an increase in a course's reputation. Intrinsic incentives refer to the satisfaction of internal needs or opportunities for growth. It was found that as the measure for intrinsic incentives increases, pre-training motivation increases. Surprisingly, compliance, or whether the course was required in the student's plan of study, was not found to be related to pre-training motivation. A moderately strong correlation was found to exist between age and pre-training motivation with an increase in age accompanied by an increase in motivation.

The level of the parents' education did not influence students' pre-training motivation, nor did the classification of the student (sophomore, junior, senior). Similarly, students' declared majors and grade point averages were independent of pre-training motivation, and the hypothesis that working students would have higher levels of pre-training motivation than non-working students was rejected. Anticipated grades, however, were found to be positively related to pre-training motivation.

MEASUREMENT INVARIANCE OF TEN CONSTRUCTS OF PRE-MATRICULATION FRESHMAN ATTITUDES TO COLLEGE STUDENT ATTRITION: TOWARDS AN EARLY WARNING SYSTEM

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ABSTRACT

This study evaluated the measurement equivalence/invariance (ME/I) of a ten-construct factorial measurement model of antecedents to college student attrition based on self-reported attitudes of entering college freshmen. Establishing metric invariance is the first step towards validation of constructs relevant for an early warning system to prevent college student attrition. The study uses a survey administered annually from 1995 to 1999. It discusses ten constructs that resemble the Cabrera, Nora, and Castañeda (1993) model of first-second year college student persistence. The Cabrera et al. (1993) model claims that college persistence is affected by external factors or student background variables, and endogenous factors such as academic integration, social integration, institutional commitment, goal commitment, academic performance, and intent to persist. In addition to the variables related to the Cabrera model, we added background measures of high-school attitudes towards academics. As measures of external factors we included "financial attitudes" and three of constructs that measure high school attitudes towards study: bad academic attitudes, good study habits, and teacher relationships. We measured "academic integration," "social integration," "institutional commitment," "goal UN-commitment," and "(UN)-intent to persist." We included two constructs related to social integration, "concern for the disadvantaged" and "political interest". We did not include "academic performance" measured as GPA as in Cabrera et al (1993) because it had only one measurement variable (GPA). Single-item constructs introduce instability in the estimation of Amos 6.0. We did not include the construct "persistence," for similar reasons. Results of the measurement invariance tests revealed full metric invariance and validity for seven of the ten constructs of our model. We found that a distinction should be made between reflective and formative latent variables before these constructs could be consistently applied to an early warning system. We found that seven of these constructs could be modeled as reflective constructs, that is, they have items that are similar and correlated manifestations of the underlying latent variable. On the other hand, three constructs are suitable to be modeled as formative latent variables, that is, items loading on these construct represent distinct and different aspects forming or "causing" the latent variable. Future research needs to address other measurement issues such as scalar invariance and to test for this and metric invariance in the context of a full structural equation model that includes both exogenous and endogenous constructs based on theory such as that proposed by Cabrera et al. (1993). In extending this work, the first three constructs should be reconfigured as formative rather than reflective

indicators with a technique such as partial least squares (PLS) applied to estimate the parameters of the resultant mixed formative-reflective model. Such work should lead to a highly valid and reliable test of all structural relationships between latent constructs in the context of attrition theory, thereby establishing true differences in latent constructs as well as the nomological validity of the attrition model.

LEARNING GAMES FROM THE GROUND UP

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ABSTRACT

Having grown up in a fast-paced environment with educational, yet entertaining TV programs, in addition to game shows, video games and the internet, Net Generation students have developed an "entertain me" attitude. Preferring hands-on, experiential activities instead of lectures, they are bored by what is usually offered to them as education and simply tune out. Learning games provide an effective way to better reach the Net Generation as games create an interactive learning experience in which students are active players receiving immediate feedback. Such activities may also help those students whose learning styles are not well served by the traditional lecture format. This study reports the findings of a survey in which Net Generation university students were asked about the ideal characteristics of classroom games. These findings should assist instructors as they attempt to engage their students and create learning environments that better suit the learners' needs.

INTRODUCTION

Learning games, which do not need to be high-tech, are a viable method to reach the Net Generation, also called Millennials. Instructors can design their own or use activities developed by others. Because poorly designed games can lead to more confusion than to active learning, this study seeks to improve the design of learning games by going to the end consumer, the students. The goal of this paper is to help instructors better design new games and activities and improve old favorites. In the following section, some aspects of good games and examples of games commonly used are presented. The results of this study, which asked students about their preference in learning games, are then presented.

LEARNING GAMES

Learning games based on TV game shows are especially popular because of the ease of explaining the game since many students already know the rules from watching the TV show. In some situations, there are even presentation slides and programs available that allow instructors to provide a more "realistic" game show experience. However, low-tech versions of games also work well and may be preferable in a given situation.

One common game that has been used in a variety of courses from biology to business is Jeopardy, based on the TV game show (e.g. Azriel, Erthal, & Starr, 2005; Benek-Rivera & Mathews, 2004; Gast & Leatham, 2005; Grabowski & Price, 2003; Massey, Brown & Johnston, 2005; Revere, 2004, Ritzko & Robinson, 2006). In a study examining the effectiveness of Jeopardy for helping students learn and review material, Ritzko and Robinson (p. 46) found that only 2.6% of surveyed students found the game "somewhat useful" (the lowest rating) while almost 80% gave it the highest rating.

Another TV show that has often been made into a classroom game is Who Wants to Be a Millionaire? (e.g. Sarason & Banbery, 2004). Individuals or teams are asked multiple choice questions and given limited opportunities to use a "life line" to obtain help. The individual or team continues to play until eliminated by a wrong answer. Likewise, Wheel of Fortune (modified to Wheel of Finance, Marketing, etc.) can also be useful to provide more interactivity.

Salopek (1999) provides an extensive list of games that can be used for training or in a classroom.

Despite the abundance of models upon which to base games, instructors often must modify games to suit the situation. For example, the Jeopardy! TV game show involves only three individual players at a time, while a classroom may contain 10 or even 100 times as many potential players. Team play is therefore very common. It is important to match game design with the people playing the game because poorly-designed games can result in failure and frustration for both the instructor and the students (Cruickshank & Telfer, 1980). The following section presents the results of a survey asking students their preferences regarding games, especially in a difficult situation such as a large class. These results provide instructors a better understanding of the elements of games that are important to students so that games can be designed and run to the best satisfaction of the instructor and the players.

METHODOLOGY, RESULTS, AND ANALYSIS

Students at a small campus of a large public university were surveyed in 2006 regarding their preferences of learning games used in class. All students had played at least one classroom learning game, while many had played games dozens of times. Of the 131 respondents, approximately 63% were men with 37% women. Team organization and competitiveness were two design elements given special attention.

Games can often be played with teams or individual participants. Approximately 65% of respondents stated that they prefer to play in teams, while an additional 20% had no preference. Therefore, a minority of 15% prefer to play as individuals. This may indicate that students enjoy the social interaction of playing on team. On the other hand, team play would also have the advantage of reducing both the pressure and possible embarrassment that could occur if an individual student does not know an answer (which could be made known during the play of the game). While the instructor may have a purpose in assigning teams, 70% of the students preferred to select their own teams, probably to increase the chances of being with their friends, thus enhancing the social aspect of the game. Students may suspect that instructors will group them with people they dislike as random assignment (19%) was viewed as preferable to the instructor assigning teams (8%).

The most popular size for teams was 3 or 4 participants (70% combined), which is sufficient for interaction and pooling of resources (e.g. knowledge) without becoming so unwieldy that some students do not actively participate. The optimal number of teams in a game was four (34%) or five (38%), with 20% preferring six or more, and only 7% choosing three or fewer teams. This finding was surprising in that it was expected that students would prefer head-to-head competition with a single opponent (two teams), thus increasing the chances of any given team winning. Students may have considered class sizes when answering, estimating that fewer teams would lead to larger teams.

However, both large teams (24%) and numerous teams (56%) were deemed to be better than meeting again outside of class or preventing some classmates from playing. Being able to participate all the time (answer each question) was viewed as moderately important, with only 21% giving it low ratings, and 51% rating it higher than 3 on a 5 point scale. These are especially important findings because some games, such as Who Wants to Be a Millionaire, were originally designed for single players, with everyone else simply watching. This format lends itself well to TV, but if the purpose of a classroom learning game is to create interactivity, a characteristic apparently desired by students, such a game would need to be modified.

The fact that a higher number of teams would statistically lead to lower chances of winning may not be very important to most students. Slightly higher proportions of students stated that they would prefer to cooperate (38%) than compete (36%), with 26% stating no

opinion. This was consistent with the 37% that gave high importance to competition (there should be a clear winner) and 18% that stated competition is not important (do not keep score or everyone can win), with the remainder stating that multiple winners would be the best option. Similarly, only 24% felt that games rules should be strictly followed, while the majority stated that allowances should be made.

Perhaps this desire to receive a prize is one reason very few participants wanted more than a 50-50 mix of chance and skill. On the other hand, only 18.% wanted a game to be based solely on skill without an element of chance. Almost half (47%) of the students preferred a mixture consisting primarily of skill with some chance, such that even a team that knew the answers to all the questions could still end up not winning the game. Indeed, it is likely to be this element of chance that sets a game apart from a graded assignment such as a quiz or test. However, beyond the 50-50 mix, the point of the game seems to be lost as skill is not as important.

Similarly, the fun and chance elements of a game can be complimented by a moderate level of noise, as 80% preferred some or considerable noise, as opposed to pandemonium or complete silence. This may, in fact, present a challenge for the instructor. As students become more involved in and excited by the game, they are likely to make more noise. However, participation by all students is likely to decrease "down time" which will reduce side conversations (and noise) not related to the game (Ritzko & Robinson, 2006).

DISCUSSION AND CONCLUSION

Rotter (2004) suggests using a game format to reinforce critical information while avoiding rote practice. While other teaching methods may also provide this benefit, the advantage of learning games is that they allow students to become actively involved with the content, often with the added benefit of social interaction. Students profess that games help them in their preparation for class and exams (Ritzko & Robinson, 2006).

To better help students learn, instructors can create or modify games for classroom use. Two related facets of game design are chance and social interaction. Although the participants in this study did not want games solely based on skill, they did not want more than a 50-50 mix of skill and chance. Instructors are likely to concur because the primary focus of a classroom game is information and skills related to the course. It is not necessary, however, to make games skill-based to the extent that they are essentially oral tests. For example, the use of dice or student choice (such as with Jeopardy) to select questions would provide an element of chance. The results of this study suggest that students would rather assume the risk of losing than sacrifice the game aspect that accompanies the element of chance.

Another aspect of the fun provided by a learning game is the social interaction. The vast majority of participants in this study did not want to play as a sole individual. A team size of three to four students, and at least four teams competing, were deemed to be optimal. Teams are very important to the interactive aspect of games because they not only create a social environment, but they also allow more people to play at one time. When at all possible, all students should be allowed play all the time (Ritzko & Robinson, 2006). An extra benefit of "all students all the time" is the reduction in down time, which likewise reduces noise and confusion as the students concentrate on the game rather than becoming bored while waiting their turns. A moderate level of noise should, however, be allowed as it contributes to the fun and social aspects of the game, especially as students becoming increasing involved in playing the game.

Students today are a new generation with different ideas and expectations. While they find it difficult to pay attention when playing the role of passive receiver in communication, they willingly engage in active learning, especially when it involves a social environment. Learning

games, especially well-designed ones, can help provide appropriate activities that fulfill the goals of the instructor as well as the needs and desires of students.

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CRITICAL THINKING: DO THEY REALLY HAVE "IT" IF THEY DON'T KNOW WHAT "IT" IS?

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ABSTRACT

Business disciplines, educational leaders, employers and students themselves view critical thinking as a fundamental requirement for competing in the global environment. Accrediting bodies have responded by requiring business schools to integrate critical thinking in curriculum and assure the students acquisition of the skill. However, many accept secondary sources of assessment as validation of this skill. These sources tend to rely on student opinion of their engagement in and acquisition of critical thinking skills. To be a reliable measure, students must understand the concepts if they are to give accurate responses and validate their learning experience. The results of this study suggest that students are not familiar with the total concept of critical thinking. They appear to understand that applying, analyzing, synthesizing and communicating information are elements of critical thinking but do not reflect the more critical aspects of reflective thinking, evaluation and basic conceptual understanding. The basic question then becomes, can we trust the secondary assessment measures soliciting information on the amount and type of engagement in critical thinking if the students themselves do not understand the concept of critical thinking?

INTRODUCTION

The intellectual roots of critical thinking are traceable to the teaching practice and vision of Socrates 2,500 years ago and it continues to invite debate as to its acquisition, development, and measurement. Researchers, psychologists and educators have toted the value of teaching and testing critical thinking skills (e.g. Ennis, 1987; College Board, 1983). Educational philosophers viewed critical thinking as the central theme in education (Siegel, 1980) with many viewing the promotion of critical thinking as one of the priorities of a college education (Halpren, 1988). And students, themselves, often cite "critical thinking" as one of the fundamental skills they received from their college education (Seidman & Brown, 2006).

Employers, too, are purporting the importance of this ability as the ramifications of poor critical thinking can be seen in business headlines. Critical thinking skills were reported to be a fundamental requirement for competing in the contemporary global environment in the 1991 U.S. Departments of Labor's report "What work requires of schools". Pascarella, (1997) cites the lack of critical thinking skills in the workplace as a major concern. Information to be used for daily decision making is ever increasing and volumes of information must be reviewed.

Within business disciplines, scholars and administrators are being asked to focus on this very basic and essential element of higher education through the realignment of University and accreditation goals. Business educators are being charged with both improving critical thinking in business school graduates and assuring that the graduates have acquired this skill. But do business students really know what the concept of critical thinking entails? And can they really say they have developed this skill if they are unable to define critical thinking?

This paper looks at a quantitative analysis of how business students define the concept of critical thinking. This analysis is compared to accepted definitions of critical thinking. Recommendations for improving the recognition of critical thinking within business disciplines are given.

BODY OF THE MANUSCRIPT

While the momentum continues to build as educators and policy makers endorse the concept of critical thinking as an essential educational priority, questions regarding the concept continue to vex educators. Hundreds of thinkers have contributed to the development of critical thinking. Each major discipline has made some contribution to critical thought. Yet for definitional purposes, it is the summing up of base-line common denominators for critical thinking that is most important.

Socrates established the importance of asking questions that probe profoundly into thinking before we accept ideas as worthy of belief. He established the importance of "seeking evidence, closely examining reasoning and assumptions, analyzing basic concepts, and tracing out implications not only of what is said but of what is done" (Paul, Elder & Bartell, 1997). This method of "Socratic questioning" is one of the best known critical thinking teaching strategies and highlights the need in thinking for clarity and logical consistency. It also elaborates by discussing critical thinking as reflectively questioning common beliefs and explanations, carefully distinguishing those beliefs that are reasonable and logical from those which lack adequate evidence.

In the Italian Renaissance, Machiavelli's The Prince critically assessed the politics of the day, and laid the foundation for modern critical political thought. Hobbes and Locke (in 16th and 17th Century England) displayed the same confidence in the critical mind of the thinker that we find in Machiavelli. Neither accepted as necessarily rational that which was considered "normal" in their culture and both looked to the critical mind to open up new ways of learning. Eighteenth Century thinkers extended the idea of critical thought even further, developing the sense of the power of critical thought and its potential impact. This understanding of the power and nature of critical thinking has continued in increasingly more explicit formulations and in 1940, William Graham Sumner published a land-breaking study of the foundations of sociology and anthropology, Folkways, in which he documented the tendency of the human mind to think sociocentrically and expressed recognition for need for critical thinking in life and in education. Others such as Dewey, Wittgenstein, and Piaget agreed. Their work increased the awareness of the need to analyze concepts and assess their power and limitations. Specifically, of the special need to develop critical thought which is able to reason within multiple standpoints.

The "hard" sciences, have contributed to this study with its emphasis on the importance of gathering information with precision and sensitivity to its potential inaccuracy, distortion, or misuse. Psychology has helped construct how easily the human mind constructs illusions and delusions, and how easily it rationalizes and stereotypes.

Since some have proposed the idea that "since critical thinking can be defined in a number of different ways consistent with each other, we should not put a lot of weight on any one definition. Definitions are at best scaffolding for the mind" (Paul, 1992), a definition will be offered which attempts to identify the skills that comprise the core group of critical thinking skills. In 2007, the Foundation for Critical Thinking published a Miniature Guide to Critical Thinking: Concepts and Tools, and offered the following definition: "Critical thinking is the art of analyzing and evaluating thinking with a view to improving it". Facione (2006) identified the cognitive skills at the core of critical thinking as interpretation, analysis, evaluation, inference, explanation, and self-regulation. Similar skills were also identified by the Foundation for Critical Thinking (2006), specifically interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based.

Some have expanded the definition to include the individual's disposition toward critical thinking and characterize an ideal critical thinker not only by their cognitive skills but also by how they approach life in general. This disposition has been defined as inquisitive, judicious, truth-seeking, confident in reasoning, open-minded, analytical, and systematic (Facione, 2006).

Based on the above historical perspectives, eight critical thinking elements and definitions were formulated. These are itemized in Table 1

Students enrolled in business courses from a midsize public southeastern college were asked to define critical thinking in a free form written format. These responses were solicited through a WebCT internet assignment or an in-class exercise. The eight elements of understanding, interpreting, applying, analyzing, synthesizing, reflective thinking, communication, and evaluation, were used to develop a definitional schema of critical thinking. This schema included various examples of wording similar to the defined concept. Supplying one of these specific examples or a similar concept indicated the inclusion of this element into the definition. The 110 written responses were qualitatively analyzed by a faculty member familiar with the eight element critical thinking coding schema described.

Over half, (55%) of the respondents included the element of communication in their definition of critical thinking. More than 40 percent felt that applying, analyzing, and synthesizing (41%, 43%, 46% respectively) were elements of critical thinking. Interpreting information, making inferences and translations were included in 39% of the respondents written definitions. But, only 26% used terms relating to making judgments about the value of material, concepts, evidence, theories, arguments, communications, actions, and plans and only 19% felt that comprehending the content and intent of the concept, understanding, was part of critical thinking. There was no mention in any of the students written definitional responses of reflective thinking, or reviewing and determining one's reasons and reasoning processes in coming to a given conclusion.

Table 1: Qualitative Analysis Summative Results

Elements of Critical Thinking Skills	Number of students indicating concept in their written definition	Percentage of students indicating concept in their written definition
1. Understanding: Comprehending the content and intent of the concepts	21	19%
2. Interpreting: Mentally putting things in different terms translating reorganizing making inferences or extensions of thinking based on principles and procedures given	43	39%
3. Applying: Drawing upon a variety of concepts and applying them to an understanding of "real world" events	45	41%
4 Analyzing: Examining material and detecting relationships among parts and ways they are organized	47	43%
5. Synthesizing: Organizing ideas or parts deriving principles from data and experiences; interpreting information and experiences from diverse sources	51	46%

Table 1: Qualitative Analysis Summative Results		
Elements of Critical Thinking Skills	Number of students indicating concept in their written definition	Percentage of students indicating concept in their written definition
6. Reflective thinking: To review and determine one's reasons and reasoning processes in coming to a given conclusion.	0	0%
7. Communication: The ability to communicate different viewpoints	60	55%
8. Evaluation: Making judgments about the value of material concepts, evidence, theories, arguments, communications, actions and plans	29	26%
Source of Data: Students were requested to "Define critical thinking in your own words."		

Based on these results, it appears that students may have an unclear perception of the concept of critical thinking. While they seemed to recognize the elements of applying, analyzing, synthesizing and communicating information the more critical aspects of reflective thinking and judging the value of information do not seem to be reflected in their written definitions.

Areas for future research should validate these findings with additional student respondents to confirm these results. The small student sample and the singular location could be expanded. Studies could consider demographical variables such as age, gender, traditional vs. non-traditional student, and race. Additional individual differences such as learning styles, personality profiles, and communication styles could also be explored

. The main limitation is the assumption that students who do not know what critical thinking is do not engage in that form of analysis. This needs to be tested with an accepted measure of critical thinking skill matched to student definitions.

Many educational leaders accept secondary sources of assessment as validation of critical thinking skills. These sources tend to rely on student opinion of their engagement in and acquisition of critical thinking skills. Students must understand the concepts that they are measuring if we are to be able to rely on this form of assessment. Understanding is crucial if they are to give accurate responses and validate their learning experience.

The results of this study suggest that students are not familiar with the total concept of critical thinking. They appear to understand that applying, analyzing, synthesizing and communicating information are elements of critical thinking but do not reflect the more critical aspects of reflective thinking, evaluation and basic conceptual understanding. The basic question remains, can we trust the secondary assessment measures soliciting information on the amount and type of engagement in critical thinking if the students themselves do not understand the concept of critical thinking? And can we pride ourselves on large proportions of students who cite "critical thinking" as one of the fundamental skills they received from their college education if their definition of critical thinking differs from accepted views? Perhaps educational institutions need to teach not only how to engage in critical thinking, but how to define critical thinking.

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TURBOCHARGE YOUR UNDERGRADUATE BUSINESS CURRICULUM USING ENTERPRISE SYSTEMS AND ACTION/PROBLEM-BASED LEARNING

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ABSTRACT

Today's businesses are facing a new type of hiring crisis – a crisis of hiring people with more pattern recognition and problem-solving skills, i.e. highly integrated skills to survive in the flat world (Freidman, 2005). An overlapping problem is that most organizations can no longer afford the time and costs of training new hires. This problem is further exacerbated by the fact that behemoth national retailers, globalization, the Internet, and technology enabling business tools have created competitive pressures that have flattened organizations. Due to this flattening of organizations, companies have dramatically reduced the amount of middle management positions—these are the position where most companies traditionally hired entry level college business graduates. Additionally, these flat organizations are demanding graduates be more outcomes focused with an understanding of how business works. Today's higher education has a critical responsibility to help solve these issues. It must build a more employable product. The purpose of this article is to signal the importance implementing problem-based learning in the business curriculum. Several programs at major universities are examined along with ours at a small private college.

INTRODUCTION

Today's businesses are facing a new type of hiring crisis – a crisis of hiring people with more pattern recognition and problem-solving skills, i.e. highly integrated skills to survive in the flat world (Freidman, 2005). An overlapping problem is that most organizations can no longer afford the time and costs of training new hires. Most large to middle-sized organizations have cut back on-the-job training and have eliminated the middle managers who were previously responsible for coaching new hires. Due to downsizing and cost cutting, today's new hires are expected to have an integrated skill-set and to hit the ground running from the first day of employment.

This problem is further exacerbated by the fact that behemoth national retailers, globalization, the Internet, and technology enabling business tools have created competitive pressures that have flattened organizations. Due to this flattening of organizations, companies have dramatically reduced the amount of middle management positions—these are the position where most companies traditionally hired entry level college business graduates. Additionally, these flat organizations are demanding graduates be more outcomes focused with an understanding of how business works. To really understand how business works, we must change our focus to problem-based learning. This is the framework by which we can create these new highly prized skills that are necessary to survive in the flat world (Freidman, 2005).

When it comes to building muscles of employability, higher education has the critical role to play. (This statement is not meant to discount the importance the government funding can play in revolutionizing our higher education system.) Each decade, as we push out the frontiers of human knowledge, work at every level becomes more complex, requiring more pattern recognition and

problem-solving. Yet our approach to higher education in business isn't evolving as rapidly as the flat world requires. We seem to be trapped in traditional paradigms of liberal arts, non-integrated curricula and non-constructivist approaches. For example, when Thomas Friedman was preparing to write the *World is Flat*, he asked a well-respected professor what we needed to get our edge back and close the ambition gap. The professor said, "Of the students I taught over [the last] six semesters, I'd only consider hiring two of them. The rest lacked the creativity, problem-solving abilities and passion for learning" (Friedman, 2005; pg 261). Similarly, Bill Gates recently said that, "When I compare our high schools to what I see when I'm traveling abroad, I am terrified for our work force of tomorrow." The problem is that our current students don't have a stake in learning, because they don't see the relevance. His pitch was to make secondary and higher education more relevant to today's needs through the use of action learning to develop creativity and problem-solving skills (Mundy, 2005). Further, Donald Trump's hit television program, *The Apprentice*, seems to validate the need for project management skills, such as creativity and problem-solving in order to succeed. It's clear, we need to create "brains on fire" to close the ambition gap. Marquardt (2004) suggests this fire can be created through action learning where students are asked to address real and challenging business issues as consultants to real companies. Also, an action learning approach is an ideal venue to satisfy accrediting organizations' (e.g., AACSB) requirement to demonstrate evidence of learning. In short, it appears there is a strong need for a higher education business curriculum that uses an integrative, project based/action learning approach with the latest in information technologies.

DISCUSSION

Given these issues, we set out to create a truly integrated business program using action learning steroids to develop employability muscle. First we performed an extensive literature review of project based curricula. We focused on MBA programs, because those are often the most sensitive to the customers' needs. Our findings indicated several exciting, action-based innovations across the country. For example: several of the professors at Stanford University had the following things to say about their recent change to project-based learning. Dr. Saloner, stated, "These new ideas do not tweak at the margins; they aim to create a new, more global, and more engaging experience for students." Similarly, Pfeffer commented, "This [curriculum change] makes students more responsible for their education and potentially engages them more profoundly and more deeply."

Likewise, University of Michigan has begun to use real projects in an effort they call Multidisciplinary Action Projects (MAP). Each MAP assignment is done in cross-functional teams and involves working with a cross-disciplinary team of faculty, who review students' work and provide guidance at crucial points during the project. Teams also work closely with a consultant on team effectiveness and project management, as well as host-company executives. At the conclusion of MAP, student teams present findings and recommendations for action to both faculty and their sponsoring companies. University of Michigan's Dr. Ross says, "There is a dramatic need for advanced skills to operationalize knowledge and lead in a more competitive, results-oriented business environment. Organizational and individual successes depend on it now more than ever.

Several schools like the University of Arkansas addressing these needs even at the undergraduate level. For example, the University of Arkansas' Walton College has created a completely new curriculum based on a business process approach, as opposed to the traditional independent stove pipe approach. They have dedicated an entire website to describing the need driving their change along with descriptions of how they are making these changes. They have rewritten their curriculum to replace "traditional core courses in accounting, finance, marketing, management, and information systems with integrated courses based on business processes that must be in place for any organization to be successful. The head of their undergraduate business program

commented that, "Business executives often tell collegiate business schools that business problems are interdisciplinary and students need to be better able to integrate business disciplines. Our faculty responded to this environment by developing an innovative business core curriculum. This curriculum pushes the frontier of business education beyond efforts currently in existence at any major U.S. research university."

While the major research universities are racing to make the changeover to an integrated, problem based approach, we think the smaller schools can get there quicker—thereby, creating an important competitive advantage. For example, Erskine College's business program has created a curriculum based on teaching students "how business works" by using integrated classes (horizontal and vertical) and real projects. At the heart of many of the projects is also the use of integrated technology tools in our small business support center or incubator. We believe in the "classroom without walls" approach and the businesses in the support center and incubator all agree to let our students perform "real projects" using today's latest technology.

The first stage of this effort began with integrating classes with real projects at a small scope in an arena that was familiar to students. The first project was to plan and execute a real weekend promotion for two competing coffee shops. Each team was made up of students from an advertising class and also from a sales class. Each team was given a month to plan. Students quickly learned that just writing essays with a lot of terms was not a substitute for making decisions (e.g., defining targets), making projections, brainstorming ideas, and then predicting which idea would be the best use of resources. Students in the advertising class quickly realized that advertising is not just art, it is an "art with a purpose." Textbook knowledge is a good resource on how to be best at do doing art with a business purpose. The sales class began asking themselves questions such as "how do I as a sales person get ready for the promotion weekend?" "How can I and my team be best prepared to execute the campaign?" And they too began to see knowledge as a resource to be applied, as opposed to a list of terms to be memorized.

The next step was to elevate these classes to work together in order to help a local business to business company. Their assignment was to use the lectures and their new gained knowledge to create an advertising and sales plan. This was a purposeful use of the constructionist approach to first challenge them in a familiar environment, and then challenge them to use their new knowledge, and their new skills of applying knowledge to an area that is much more unfamiliar. This also helped of course with lecture because professors could now challenge students to think about how they could use the knowledge, not in a couple years, but now. That sense of urgency created a very strong sense of readiness to learn. It is what we call the "tilling of the soil." We ask the question before lectures such as, "When we're discussing the terms and concepts, how can you use these ideas?"

Now, in this following semester we are raising the level of the effort to help start two small companies in our Small Business Support Center incubator. Marketing and Marketing research classes are working together for their assigned company in order to create a marketing strategy and plan, as well as execute certain aspects of those plans. The Human Resource Management class is assessing HRM needs for each company to include performing a job analysis, recruitment plans, and appraisal and compensation systems. Part of the project effort is for those classes to work with the MIS class to set up tools to enable their plans. MIS is also charged with scoping out the back office needs (financial and operations) of those companies directly with the client and delivering those tools and automated processes as well.

Two new technology elements have made this sophisticated approach possible. It is the confluence of "On Demand" and enterprise software. Enterprise software enables front office (CRM) and back office business functions to be automated in an integrated solution. The "On Demand" aspect means that a company (or in our case a company and the MIS class) just needs to identify configure their company's solution based on needs, but do not have to set up the system itself. With "On Demand" a technology company hosts and manages the solution including the

creating and running the databases and software code (instructions). They also handle issues such as maintenance/development, performance, connectivity, and security. This leaves the company (and in our case the students/faculty) to focus on identifying the needs with requirements documents and setting up ("configuring") the system to meet the company's needs.

Obviously a major learning objective is for the students to learn how these functional areas work and how do they need to work together. (Much like their courses need to work together.) Students focus on outcomes and quickly realize that planning and scoping of projects is very uniquely more difficult than just doing a pre-defined project. With the technique of using problem-based learning, the students in essence scope out their own project with the help from faculty in the form of coaching and business personnel from the companies. Faculty members determine the outcomes and then let the students figure out how they can add value. Students find these projects very difficult, for the same reasons companies do. How do I add value as opposed to wait to be told what to do? How do I work with other groups with very different priorities and perspectives to create value that lends to the desired outcomes, as opposed to can't I just do my thing and through it over the fence to the other areas. Students deeply realize the challenge of today's organizations is not within their stove pipe functional area. It is to determine how the enterprise can work together to get the best outcomes while maximizing the company, departmental, and personal resources.

To help students along, we grade at project milestones so they can reflect on what they have done so far and benchmark off other student projects. Further, we don't allow students to leave a project until it's the best it can be. We want to instill in them that "mediocrity is not ok." Additionally, we use a common set of rubrics to define our expectations on projects across the business curriculum. We also look to use rubrics for peer and client evaluations. Since the implementation of the rubrics, we've noticed an increase in student pride of workmanship and an understanding of what "excellence" looks like; particularly, in the eyes of a business client.

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USING THE LEAN PHILOSOPHY AS AN OVERARCHING THEME IN TEACHING OPERATIONS MANAGEMENT

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ABSTRACT

The lean philosophy of manufacturing has recently emerged as a powerful force in manufacturing practice. However, there is a profound mismatch between the manner in which this philosophy is applied by industry and the way it is presented to students in introductory operations management (OM) textbooks. These texts almost always consign Lean to a single chapter, often closely connecting it with inventory management, as if Lean were no more than a narrow "toolbox" of inventory- and cost-reduction techniques. But the lean philosophy is an all-encompassing set of concepts that deeply impacts every single sub-area of OM. This paper discusses lean concepts and their applications in quality management, process management, capacity management, product/process design, scheduling and supplier management. By doing so, the paper indicates how the lean philosophy can be integrated into every facet of OM in an introductory-level undergraduate or MBA class.

INTRODUCTION

Over the last decade, the philosophy of lean manufacturing has emerged as a powerful influence in operations management practice. The lean philosophy is a loosely connected group of concepts and principles that owe their beginnings to Toyota Motor Company in the 1950's. Since the early 1990's, U.S. firms have mounted large-scale lean initiatives across a wide variety of manufacturing industries.

Yet, there is a glaring disconnect between the practice and teaching of lean manufacturing (henceforth, Lean). Introductory operations management (OM) textbooks invariably consign Lean to a single chapter or part thereof (Ritzman & Krajewski, 2003; Russell & Taylor, 2006). Often, it is lumped in with just-in-time (JIT) systems. But Lean is not a narrow, focused technique for reducing inventories, since but instead an all-encompassing "way of doing business" which transcends any single functional area, and in fact, the firm itself, to span the entire supply chain.

Since Lean has implications for effective business practice in all sub-areas of operations management, this paper points out the (quite unspoken) place and prevalence of lean ideas all across the OM field, demonstrating how it can make for a powerful way to integrate the various sub-areas of OM.

ORIGINS OF LEAN

Before examining the application of lean ideas to the individual sub areas of OM, I find it useful in my introductory OM courses to present the origins of lean production and the historical context surrounding it. An excellent point of entry into Lean is having students read *The Machine That Changed The World* (Womack, Jones & Roos, 1990) which traces the evolution of production systems in the auto industry from craft production through mass production to lean production. There is a narrative momentum to the book which students find absorbing, and it is strewn with scores of real-life examples. It allows an accessible and multi-faceted view of the basic principles

of Lean for the student. I have employed this book successfully at both the undergraduate and graduate levels for this purpose for over ten years.

The basic elements of Lean include: (1) strong customer-driven focus; (2) minimizing waste in all its forms; and (3) continuous improvement of processes. Relentlessly identifying and rooting out waste is a particularly critical component of lean practice. Waste here is defined broadly, as illustrations from various sub-areas of OM will reveal below.

PROCESS MANAGEMENT

One key focus of the lean philosophy is to reduce the amount of time taken for a product to go from raw material to finished good. This period of time, known as the throughput time, is comprised of four components: (1) operation time; (2) changeover (or setup) time; (3) queue time; and (4) move time. Lean targets each of these components. Operation time is reduced through the use of cross-functional and skilled workers exploiting the learning curve; changeover time is cut by using flexible machines and product similarities; move time decreases because of streamlined flow and reduced move distances; and queue time declines because of reduced changeover and operation times.

Reducing throughput time is important because it cuts production costs, improves productivity, and also quickens response to customer demand. Among these four components, reducing changeover time is especially crucial because it leads to the ability to produce smaller lots. As Lean at Toyota has demonstrated so powerfully, this in turn results in numerous advantages: reduced rework and scrap costs because quality mistakes affect a smaller number of units, lot sizes being small; more manual handling of product which results in better "quality at source"; the ability to achieve economies of scope by making a variety of products in an agile and customer-responsive manner; producing for only immediate needs rather than for both immediate and future needs; paving the way for fluid scheduling abilities; and, critically, reducing inventory holding costs.

Furthermore, the increased production flexibility resulting from Lean opens up the possibility of mass customization, in which products are made in a standardized manner for most of the process and then customized at the very end. This postponement of the point of differentiation allows the firm to wait till nearly the end before committing to specific product variations, thus also making for tight coupling between supply and demand. In addition, standard intermediate parts can be produced and stored, allowing customization to take place quickly, soon after customer orders are received. This allows the firm to respond to customer demand with great speed.

Reduction of changeover times also allows for *patterns* of supply to match *patterns* of demand, rather than simply matching aggregate levels of supply with aggregate levels of demand. When processes can be changed over quickly, mixed-model production can take place, the operation producing a wide variety of products in small quantities every day. This pattern of supply closely mirrors patterns of demand the marketplace wherein a firm sells a wide variety of products in small quantities on any given day. Thus, the lean elements of customer orientation and waste reduction are both targeted by the practice of mixed-model production.

QUALITY MANAGEMENT

Lean manufacturing is aligned with total quality management (TQM) because of the customer driven focus in designing and running the operation. The central lean concept applied to quality control is building quality into the process, stage by stage, rather than relying on final inspection. Inspecting quality at the end leads to several forms of waste including scrap costs, rework costs, lost production time, and most importantly, the difficulty in pinpointing the root causes of quality problems. By focusing on acceptance sampling of finished products, firms opt for a reactive approach to quality management which favors collecting exhaustive data on the numbers

of good and bad parts made, without proactively focusing on improvement of future quality. In contrast, statistical process control (SPC) focuses on each stage of the process, looking for assignable variation in the process.

Furthermore, Lean attempts to reduce the waste resulting from excessive specialization. For example, in traditional quality control, responsibility for quality lies with a specialized unit, the quality control (QC) department rather than being everybody's responsibility. By authorizing employees to perform their own quality checks at each stage of the process, causes of poor quality are arrested soon after they surface, forestalling wasteful costs such as scrap, rework, etc.. Moreover, this increased worker flexibility also obviates the need for large numbers of QC specialists. Finally, back-to-basics methods such as visual mechanisms (andons, display boards, colored lights, production signals) and poka-yoke (mistake-proofing) exploit the potential of low-cost, speedy solutions to problems which were formerly addressed through computerized approaches.

WORKFLOW & FACILITIES LAYOUT

In lean practice, group technology (GT) has been used to create product families manufacturing cells. Exploiting similarities among parts within a family (and thus within a cell dedicated to the production of a family) results in a significant reduction in changeover times. This makes the operation more flexible, cuts down on response time to customers, and allows those products to be made in small, frequent lots, thus reducing waste on several fronts. Furthermore, cells are managed differently from traditional functional layouts. A cell is run by a self-managing cross-functional team which shepherds a product through from raw material to finished good, increasing worker pride and commitment and thus quality. Worker flexibility also allows for quality checks at each stage within the cell reducing waste that would arise from a sole reliance upon final inspections for quality.

CAPACITY MANAGEMENT

Lean practice, because of its customer-driven orientation, favors the use of performance measures that are both internally and externally focused. Traditionally, performance measures in OM been efficiency-based, giving importance to internal metrics such as productivity, cost per unit and machine utilization levels. Lean approaches advocate a balance between efficiency-based and effectiveness-based performance measures. Traditionally, firms have been reluctant to lower capacity utilization levels for fear of negatively affecting efficiency-based performance. But Lean's customer focus provides a firm rationale for companies to tie production to demand on a daily basis. This often results in periods during the day or week when certain equipment may not be utilized. Lean, by advocating preference for idle equipment over excessive production and inventory buildup, moves the firm away from a sole reliance upon efficiency-based performance measures.

Lean manufacturing addresses the drawback of occasional under-utilization through flexible workers. When the demand for a particular item drops, workers and machines, rather than being forced into idleness, can be swiftly reassigned to other products whose demand is high.

INVENTORY MANAGEMENT

Of all areas within OM, inventory management is the one most closely connected, in a typical OM text, with the lean philosophy. It is very common for lean principles to be covered side by side with JIT principles. The famous Lean analogy of the water level in a river as representing inventory level in a firm is often invoked when describing the sea change that occurred in inventory management under the influence of lean concepts. A high water level, which corresponds to a high

inventory level, represents just-in-case stock to protect the firm against various potential sources of uncertainty like late deliveries, poor quality raw materials, unstable in house processes, and inaccurate forecasts. JIT systems, through a conscious and deliberate lowering of the water level (inventories), both reduce waste and expose the rocks (underlying causes of waste) at the bottom of the river-bed.

Lean ideas in inventory management are also applied by instituting cycle counting systems. Rather than doing an annual physical count of inventories, cycle counts spread physical counting throughout the year and, more importantly, attempt to ferret out underlying causes of discrepancies between inventory records and actual stock. Cycle counting can be viewed as being analogous to checking quality at each stage of a process rather than relying on final inspection of the finished item (annual physical counts). There is thus the same lean principle at work in both inventory management and quality management.

Finally, reducing the recording of transactions by delivering raw materials directly to the point of use on a production line can also be seen as a form of waste reduction for two reasons: (1) it reduces inventory holding cost because stock is not held for very long; and (2) the labor of transaction reporting is reduced.

PRODUCT AND PROCESS DESIGN

Concurrent engineering is the use of cross-functional teams to design both product and process simultaneously rather than sequentially, which has been the traditional practice. The waste reduction potential of this new approach lies in quicker product development, and the gathering and processing of input from various functional areas in one forum, the team. Another important Lean idea in design is the reduction of parts counts and the use of techniques like Designed For Manufacturing And Assembly (DFMA) in order to create products that are easy to manufacture. There are two key Lean benefits to this approach: (1) products are simpler to assemble, thus cutting production cost; and (2) the potential for quality errors during production is less because there are fewer parts, and thus there are fewer opportunities for mistakes to occur.

SCHEDULING

Because of Lean's emphasis on both customer orientation and the elimination of waste, production scheduling is tightly linked to customer demand in such a system. Management of day-to-day production is control-oriented rather than planning-oriented (Meredith & Shafer, 2007). Demand at downstream work centers triggers production at upstream work centers; this is the essence of the "pull" system used in a JIT environment. A "pull" system also uses simple, common-sense mechanisms like visual signals to authorize production and storage. The use of flexible workers in the "pull" system allows the facility to switch quickly between products in order to respond to real-time demand, producing in small lots for immediate needs.

SUPPLIER MANAGEMENT

The use of single sourcing in a lean system in combination with a tiered supply chain also reduces waste in numerous ways. Long-term relationships build trust, reliability, and consistency of quality. They also make for the likelihood of design collaborations, exchange of expertise and personnel, and a greater willingness on the part of the supplier to respond to special requests from the customer firm. It is easy to implement blanket orders, and schedule small, frequent deliveries in such an arrangement. Savings occur because of quicker product development, lower failure costs of quality, lower appraisal costs of quality, and reduced effort in continually identifying new suppliers as short-term contracts run out.

CONCLUSION

Lean manufacturing is fast achieving a powerful prominence in industry but introductory operations management textbooks seem to be addressing this emergence in a misguided manner. They lump Lean together with inventory management and confine it to a chapter as if it were a mere technique. Instead, teaching OM must stress the importance of Lean as a philosophy that is all-encompassing and applied in all areas of OM practice. It is time integrate the lean philosophy with all of operations management rather than locking it away in a narrow sub-area with a limited purview. This paper indicates how we can identify the elements of Lean and apply them to all key OM topics along with the rationale for doing so in each case.

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APPLYING LESSONS FROM JAZZ IMPROVISATION IN THE MANAGEMENT CLASSROOM

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ABSTRACT

We apply the metaphor of jazz improvisation to the management classroom. We describe several characteristics of effective jazz improvisation, and illustrate them with improvisational teaching analogues. The underlying structure of improvisational teaching, the role of accompaniment and swing, the importance of "improvisational memory," and the notion of improvisational teaching as "performance'" are all discussed. We also outline the risks of using improvisation in the classroom.

INTRODUCTION

Teachers in higher education are increasingly expected to engage students in active learning. Those teachers who are able to improvise – and respond to the emergent dynamics of the classroom – are better able to foster such student engagement. Jazz performers engage audiences by improvising spontaneous, unrehearsed, not-written-down performances. There are, we believe, compelling parallels between the foundations and practices of jazz improvisation and the effective facilitation of the learning of an ensemble of students.

In this paper, we explore the metaphor of a management instructor as jazz ensemble leader and improviser.

A STRUCTURE

There is a common misconception that jazz is a free-form music without structure, relying upon "on-the-spot" improvisation. It is sometimes thought by those not intimately familiar with jazz improvisation that the musicians "make it up as they go along," using little more than casual imagination and invention, eschewing any kind of advance pre-meditation or preparation.

Nothing could be further from the truth. When we witness a jazz performance, what may appear to be nothing more than spontaneous invention is instead the fruit of long years of preparation. What's more, jazz is a highly structured music. The performance of a jazz tune is typically based on the following three-stage structural formula, the stages following each other in sequence: (1) statement of the melody of the tune (the "head"); (2) melodic improvisations conducted as the original chord changes of the tune play below; (3) a re-statement of the "head" in closing.

While improvisation is occurring, the underlying accompaniment, or "chord changes," remain the same as that of the original tune. Atop this familiar bed of chords, the soloist improvises new melodies.

So, employing improvisational practices in the classroom does not mean abandoning all structure and surrendering to the chaos and flux of the moment, going blindly where it might lead. Instead, improvisation in the classroom is about firmly establishing a structure for each class session and for each topic—just as a jazz group would agree to perform a certain tune whose chord changes (its underlying structure) would be familiar to all group members.

It is the teacher's responsibility to establish and clearly communicate the "chord changes," or underlying structure, of each class session. Often, the "changes" will be based upon pre-assigned readings (e.g., from the text, instructor-prepared notes, articles, etc) that students will be expected to be familiar with, going into the class session. It has been our experience that the degree of preparedness of our students with these pre-assigned readings is a major factor in the success or failure of improvisation-based teaching approaches in the classroom. Study questions for students to consider while the complete assigned reading may help to introduce students to the changes. Sometimes at the beginning of a session we will introduce an outline of our treatment of a topic to communicate, at least in part, the changes. Often quite spontaneously, we will, at the end of a class session, leave students with a question to consider or a kind of personal experience to bring to class to discuss in the next session.

REMEMBERING THE CHORD CHANGES

It is important for an improviser keep the "head" in mind at all times (Hatch, 1999). This means knowing her place in the tune even when the melody of tune has been temporarily abandoned, and improvisation is taking place. When class discussion ventures into unanticipated territory, it is important for the teacher to keep in mind the foundational structure for the class session. It may often be necessary to allude to that structure, directly or indirectly, when discussion moves further afield than is deemed appropriate for that session. This process can be aided by opening each class session with a statement of the topics or subtopics planned for that session. This helps to establish, in the class' mind, a class session "map" within which discussion can freely travel about. With experience, the teacher will develop a better sense of what avenues to encourage and pursue, and when to terminate a discussion (sensing either a "cul-de-sac" or a potentially "distant" territory not immediately pertinent to the immediate exploration), always providing a gentle but firm rationale for doing so.

SWING

In jazz, the all-important feeling of "swing" is characterized by a steady tempo, a sense of group cohesion, and an energy and spirit. Swing provides a momentum to the performance, giving it a rhythmic tug that carries the ensemble forward. Syncopation, which means accenting "weak" beats rather than "strong" ones thus subverting expectation and playing slightly behind the beat, also contributes to the sense of swing. Gridley (1994) notes that a key element of the impact of syncopation is 'upset' or tension it creates when we expect to hear one rhythmic pattern and instead experience the syncopation. That violation of our expectation can be stimulating.

A classroom session swings by the presence of momentum and energy, which help foster a sense of engagement. Syncopation has its analogue in consciously employing an element of "surprise" in the classroom. This might be achieved by varying the mode of presentation, for example, by choosing and alternating between using the blackboard, slides, and throwing questions out directly to students. We often create impromptu in-class group assignments, which inject an element of *unpredictability* into the classroom. This element of chance, integral to improvisation, prevents the ensemble from settling comfortably into pre-determined patterns and roles, thus fostering an active and alert spirit in the classroom.

One technique that has proven useful in our courses is "think-pair-share." We may suddenly interrupt a lecture to give an impromptu open-ended question to the class. The students have about a minute to reflect upon this question, after which they are paired to discuss their answers in collaborative fashion. Finally, students share their answers with the rest of the class. Such a change of pace, accompanied by an unexpected demand of investment on the students' part, helps energize the class and give it momentum, thus making it "swing."

Another method for introducing an element of swing and engagement in the operations management classroom might be to apply the Toyota approach of the "five why's." In this problem-solving process, each response is countered with the question "why?" until we are able to drill down to the root cause(s) of the problem. This method discourages lingering solely on the effects or symptoms of a problem, instead merely using them as a pretext to uncover hidden causes that lie at the root of the problem.

IMPROVISATIONAL MEMORY

Jazz saxophonist Gary Bartz has noted (Berliner, 1994) that his improvement as a musician over the years is closely related to his learning how to edit his ideas, thus making him better able to follow ideas through to a logical conclusion. Our classroom experience has similarly taught us to understand the value of editing our statements for clarity. One of us uses overheads as a teaching tool; over the years, his overheads have become much less wordy and now emphasize only the essential points. We have had similar lessons with regard to class handouts.

We have also discovered that keeping a teaching journal allows us to record our observations about successful and unsuccessful improvisatory forays in the classroom. This helps us edit our future solos and also factors into redesigning both content and process of topic areas in the course. The pianist-band leader Horace silver was well known for taking his band on the road for several months and trying out variations of his arrangements night after night, until they have been refined, at which point he was ready to

The recording studio and immortalized the arrangements on wax. Similarly, creating course handouts can be a continual evolve in process that is immensely enriched by the fruit of classroom improvisations of semesters past. Solos played in-class can be unpredictable, exciting, and insightful. But it is our experience that unless insights from these solos is captured in some manner for future use, they tend to vanish quickly from our memory. It is thus necessary to create a mechanism to preserve and grow improvisational memory, thus contributing to the richness of future class experiences.

THINKING AHEAD

Often, good jazz improvisers play solos which are composed of phrases and lines that seem carefully thought through in advance. It is often said that a good improvised solo tells a story, taking us from point A to point B in a journey that seems logical, interesting and yet surprising. This means that the improviser is both attentive to the present (as she plays his solo, moving from one note to the next) but also thinking ahead to how each new phrase fits into the overall context of the "story" the solo is telling. Often, she may even have a certain destination that she will eventually wind her solo toward as she begins to conclude her performance.

And so it is in the classroom. For example, beginning a discussion of changeover time reduction, we try to get the class to reflect upon the impact on batch size. Once the class realizes that shorter changeover times can mean smaller, more frequent batches, I can help steer the discussion so that by the end of the class session, I have addressed at least three important points that I have thought ahead to: the quickness of response to customers; reduced inventory carrying costs; and reduced rework costs.

THE TEACHER AS ACCOMPANIST

As the leader of the ensemble—the class—the teacher is actively involved in "soloing" when she presents material. But the teacher must also learn how to be a skillful accompanist when time comes for students to solo. Effective accompaniment can have multiple aims. First, using

questions, the teacher can prod students into reflecting upon the material in a deeper and more critical fashion. In this case, accompaniment serves as a catalyst, stimulating student soloing. By discreetly employing certain key words or phrases, the teacher can also suggest possibilities for student soloing by unobtrusively planting the seeds of ideas. This can also serve to embolden students, and help them to solo.

A key function of accompaniment is to provide support and remind students gently of the foundational structure within which they are operating at any time during the class session. "Structure supports but does not specify," says Hatch (1999). By alluding to the topic material that is grounding the discussion at hand, students can be helped to bring their responses into focus. Good accompaniment by using the right of the vocabulary can also provide a model for emulation.

JAZZ IS PERFORMANCE

According to Berliner (1994), "[I]mprovisation involves reworking precomposed material and designs in relation to unanticipated ideas conceived, shaped, and transformed under the special conditions of performance, thereby adding unique features to have recreation." While a great deal can be done to prepare for improvisation in the classroom by pre-establishing structure for the topic, assigning readings, etc., one can never get away from the fact that improvisation ultimately is born in the moment during the class session. Like a jazz musician, a teacher who employs improvisational practices is essentially a "practitioner" (Weick, 1998) or a "practicer" (Berliner, 1994). Staying alert to the moment and reacting both judiciously and quickly to the events of the moment is a crucial component of this practice. Hatch (1999) reminds us that jazz is a set of performance practices or processes rather than a predetermined state or outcome. Improvisation is an activity rather than a destination.

Weick (1998) has compared the practice of jazz improvisation to bricolage, an artistic activity of collaging which makes use of whatever materials are at hand and available. Often, improvising in the classroom means building upon ideas and examples that emerge during the classroom session. Sometimes, this material may prove difficult to work with or build upon. The teacher will have to make quick decisions about which emergent material to use and how. Bricolage may use art materials that are both traditionally held in high regard (for example, paint) or are considered "low" and humble (for example, junk, found objects, detritus). Similarly crude, simple-formed ideas or sometimes even flawed thinking or outright mistakes can be pressed into use to illustrate a point in the classroom.

THE RISKS OF IMPROVISATIONAL TEACHING

Improvisational teaching involves giving up some things that teachers sometimes hold dear. By its very nature, such teaching means that one should not expect uniformity of either the processes or the outcomes of class sessions. Therefore, testing and other evaluation processes must be sensitive to the specific experiences of an ensemble. This may mean that a teacher's favorite questions or assignments are not appropriate to a given group's experiences. (Unless, of course, as is common in our teaching, one builds his sessions and soloing on a structure which assumes those favorite questions.)

Improvisational teaching is also not for those who are not willing and eager to embrace a certain level of ambiguity in the classroom. We are not always able to predict where our students' solos will take us or that we will be able to answer their questions satisfactorily. Our students do not always remember the chord changes, leaving us with the burden of working to understand their ideas and questions and, when possible, to respond to them in ways that help them learn those changes. Needless to say, the improvisational teacher can not always predict and control the music made in his or her classroom.

It is also necessary to tolerate a certain level of inefficiency in the classroom. Going from a lecture format to a more improvisational structure, the teacher may often require a greater amount of time to devote to each topic. Arguably this time may result in deeper exploration of certain ideas that deviate from the script that a lecture might insist upon. The price we pay for the energy, excitement, surprise, and fruitful discoveries we make thanks to improvisation, is occasional time inefficiencies.

A CODA

Improvisational teaching is fraught with risks, uncertainties, and the unexpected. And yet these challenges can result in a teaching experience that is exciting, surprising, and more rewarding than the assured comforts of a comprehensively pre-arranged teaching plan.

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A MARGINAL COST OF CAPITAL REALITY CHECK: LENDER RATE SPECIFICATIONS

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ABSTRACT

Traditional treatment of the marginal cost of capital comes under question when lenders are able to negotiate various features of debt contracts. The specified rate of interest is only one among many features determining the borrower's cost of funding. In addition, lenders usually require financial projections for a firm's expansion plans, because they want to assess exacting degrees of risk associated with those expansions.

The traditional textbook model of marginal cost of capital makes the grand assumption that the projects under consideration are of average risk for the firm (they would not appreciably change the firm's overall risk complexion), and that increases in the weighted average cost of capital (WACC) are due to scale increases only. Firms are assumed to utilize cheaper sources of component funding first, accepting higher cost alternative financing only after the cheaper sources are exhausted. The real world, however, effectively refutes these assumptions when a firm's projects would change its risk complexion. This paper presents a method of exposition of the risk assessment process from the lender's point of view. The lender's behavior may directly affect a corporate borrower's determination of their own marginal cost of capital in the case of expansion projects that will change the firm's overall risk complexion.

USING RUBRICS TO ACHIEVE THE DUAL GOALS OF WRITING IMPROVEMENT AND ASSURANCE OF LEARNING

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ABSTRACT

Business schools are receiving increasing pressure from employers to graduate students that communicate effectively and from government agencies and accrediting bodies to demonstrate assurance of learning. While these two goals have usually been addressed separately, with the former dealt with at the assignment or course level and the latter at the program level, two recent trends have made it possible to gain leverage in achieving these two critical goals. Specifically, course-embedded assessment, one trend, is a way for programs to use course assessments as a way to also measure program outcomes. The second trend is the increasing use of the grading rubric as a tool for giving student feedback. The focus of this paper is on the grading rubric; first, developing a conceptual model of how it might be used for course embedded assessment to achieve both skill development and assessment. Additionally, this paper will share a case study, including some tentative conclusions, of adopting a common rubric and its use in a particular course.

STUDENT ATTITUDES TOWARD INTERNATIONAL BUSINESS AND THE INTERNET: AN EXPLORATORY STUDY

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ABSTRACT

The Internet as a learning tool in the International Business (IB) curriculum is becoming more widespread because of its informational and multimedia benefits. This research explores the relationship between student attitude toward the Internet and toward IB with four performance measures (i.e., objective, expected, behavioral, and attitudinal) and affect toward international learning to determine the effectiveness of Internet-based assignments. The results indicate that Internet attitude did not have a significant impact on any of the performance measures and had a negative significant relationship with international learning affect. However IB attitude had a significant positive relationship with expected IB grade, assignment enjoyment, and international learning affect as well as a significant negative relationship with assignment finishing time. The interaction effect of the two attitude measures was only positively related to assignment enjoyment. This study shows that student IB attitude is more pertinent than their Internet attitude when applied to student performance and international learning affect. At best, a positive Internet attitude can amplify an existing positive IB attitude, and at worst, it may dampen international learning affect.

AN INTRODUCTORY COURSE IN INTERNATIONAL BUSINESS AS PART OF UNIVERSITY GENERAL EDUCATION REQUIREMENTS: THE RESULT OF A PRE- AND POST-TEST AMONG UNDERGRADUATES

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ABSTRACT

The study of international business has both required and provided additional and complementary cross-disciplinary learning. The variety of academic fields applicable to international business research has reflected this cross-disciplinary need. Regarding pedagogy, the growing perception of the need for international business teaching in American universities has fostered discussion of the elements of international business courses, raising the issue of humanities and other disciplines relevant to the distinct needs of international business teaching.

This study represents initial empirical findings from a sophomore-level course in a state university. This course, called Global Environment for Business, is delivered to medium to large sized classes of students who have not as yet declared majors. The majority are sophomores, but a large contingent is made up of freshmen. The course was fundamentally redesigned from a previous incarnation in order to fulfill a portion of general education requirements for Bachelor's degrees. The sample, representing a number of these courses, took an anonymous survey of their knowledge and skill base at the beginning of the course. The survey instrument contained items reflecting attainments beyond or outside of narrowly business-related skills. At the end of the classes, students filled out the same instrument again, and results were compared. Items were worded so as to cause students to limit assignation of knowledge or skill gains only to those from the course (i.e., not to report learning of general education skills from other courses during the same semester).

It was found that, beyond the learning of specifically international business knowledge during the semester, students gained knowledge in a number of other areas, such as humanities and technology. The results appear to justify the use of international business pedagogy as a vehicle for imparting skills and knowledge in basic contemporary general education areas, as well as in the narrowly defined domain of academic international business. Extensions of this research might encompass both a refining of the course content, depending on the ends to which the course is designed, and a reassessment of the place of international business pedagogy in graduate level coursework.