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Subscription Price: US$ 320/yr

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Teaching Management Students How to Decide
Syeda Noorein Inamdar, Asbjorn Osland

We present an experiential learning method to improve the core decision making skills of management students. First, we provide a framework that instructors can utilize to take a more systematic approach to teaching decision making skills. Second, we demonstrate how to apply our framework to teach case studies with decision making dilemmas. Third, we present an exploratory research study measuring decision making effectiveness before and after a teaching intervention using our framework. The subjects for the research study were MBA and Masters of Bio-technology (MBT) students. The intervention demonstrates the effectiveness of the framework for teaching decision making to management students.

Qualitative Determinants of Undergraduate Academic Performance: A Case Study
Hamid Tabesh, Dawn Hukai

Many studies have evaluated the impact of the quantity of hours college students work on academic performance. In addition, studies suggest that people who focus on improving their weaknesses over time can achieve expertise (Ross, 2006). However, there have been relatively few studies that examine the relationship between different qualitative aspects of study and academic performance. Using cross sectional data from Spring 2010 for a sample of undergraduate accounting, business, and economics students, this paper attempts to rectify this deficiency in the literature by examining the effects of deliberate study on the academic performance.

The Expected Value of Cheating
Craig H. Wisen

Cheating in a traditional test setting is estimated to be of a magnitude similar to the proportion of firms that backdate employee stock options. This paper describes a methodology for the detection of cheating. The simple method for detecting cheating is presented in this study and applied to a large undergraduate class. The tool is easy to implement and provides valuable lessons in estimating the expected value of cheating, statistical size, type II errors, type I errors, and hypothesis testing.

Curriculum Integration: Does the Degree of Operating Leverage Defy Optimal Input Combinations?
Samuel E. Enajero

Fixed and variable inputs are analyzed in economic theories as well as management accounting. In economic courses, optimal input combinations require that the ratios of marginal product to input price be equal for all inputs. The degree of operating leverage (DOL) is a measure of the extent to which a business firm substitutes fixed inputs for variable inputs to boost the contribution margin. It is shown that the practice where a firm invests more in fixed inputs with no regards to relative input prices is a violation of optimal input combinations. This is obvious if input substitution topics in economics and business are integrated.
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Peter Hudson

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Min Xu, Junhua Jia, Suk Hi Kim

The case study approach in finance is often regarded as one of the best ways to bridge the gap between theory and practice. While much has been said about the relationship between case courses and graduate programs, little research has been performed on sources of cases in use, coverage and organization of courses, and the grading of oral and written reports. U.S. finance professors who have taught the MBA-level core finance courses (the 2nd MBA-level finance course), were surveyed to determine which sources of cases have been used, the organization of classroom discussions, number of oral and written assignments, and grading procedures.

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Robert S. Curtis, Wenxia Wu

The higher education community constantly seeks effective methods to evaluate student academic achievement and program learning outcomes. Many institutions in the new millennium have been embracing ePortfolios in various areas of higher education with multiple purposes of accountability, assessment, and support for learning. This paper examines the application of ePortfolios at Franklin University in enhancing transparency in learning and assessment in healthcare education. At Franklin University, four aspects of transparency in learning and assessment are identified for adult learners: relevance, visibility, accessibility, and scalability.

The Case for Change in Business Education: How Liberal Arts Principles and Practices Can Foster Needed Change 75
Tim Ewest, Julie Kliegl

A liberal arts education is touted as a tradition that produces graduates who are humane, interdisciplinary, and have the ability to think critically. While many liberal arts colleges offer business in their degree offerings, it can be seen as antagonistic to a liberal arts education. Can the liberal arts and business education find mutuality? This paper argues that the consideration of this issue is timely due to the recent decline of liberal arts education in favor of technical degrees and the recent criticisms of business education as lagging behind other majors in learning outcomes. An integration framework is offered for business education within liberal arts.
Use of Social Media in Graduate Education: An Exploratory Review for Breaking New Ground

Jay Johnson, Jim Maddox

The evolution of social media has been rapid and is expanding at a dizzying pace. This paper examines the use of social media in graduate education and is an exploratory review of how it is and can be used within the field. Social media are beginning to be used in various educational settings; however, the literature is lacking in terms of rigorous research conducted. An overview is provided of social media “tools” and identifies potential applications in graduate education. A framework is proposed for conducting qualitative research to further explore the potential uses/applications of the variety of social media tools.
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The Journal of Higher Education Theory and Practice (JHETP) is dedicated to the advancement and dissemination of academic and intellectual knowledge by publishing, through a blind, refereed process, ongoing results of research in accordance with international scientific or scholarly standards. Articles should combine disciplinary methods with key insight to contemporary issues central to faculty, administrators, and industry specialists. Articles of regional interest are welcome, especially those dealing with lessons that may be applied in other regions around the world. Accepted manuscripts should make strong empirical and/or theoretical contributions and highlight the significance of those contributions to the higher education field.

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3. Provide an additional outlet for scholars and experts to contribute their research findings in the area of higher education

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Include a title page with manuscript which includes the full names, affiliations, address, phone, fax, and e-mail addresses of all authors and identifies one person as the Primary Contact. Put the submission date on the bottom of the title page. On a separate sheet, include the title and an abstract of 150 words or less. Do not include authors’ names on this sheet. A final page, “About the authors,” should include a brief biographical sketch of 100 words or less on each author. Include current place of employment and degrees held.

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301 Clematis Street, #3000
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Teaching Management Students How to Decide

Syeda Noorein Inamdar  
San Jose State University

Asbjorn Osland  
San Jose State University

We present an experiential learning method to improve the core decision making skills of management students. First, we provide a framework that instructors can utilize to take a more systematic approach to teaching decision making skills. Second, we demonstrate how to apply our framework to teach case studies with decision making dilemmas. Third, we present an exploratory research study measuring decision making effectiveness before and after a teaching intervention using our framework. The subjects for the research study were MBA and Masters of Bio-technology (MBT) students. The intervention demonstrates the effectiveness of the framework for teaching decision making to management students.

INTRODUCTION

In light of the economic crisis of 2008, the value of management education has come under scrutiny (Wallace, 2010; HBR Debate, 2010). In particular, Podolny (2009) argues that business schools are not teaching students critical thinking skills and this contributed to shortsighted decisions that led to the financial crisis. Kachra and Schnietz (2008) further add that students are not aware of how internal biases and the process of strategic decision making can result in suboptimal decisions. They state that management students are not learning effective decision making because it is an experiential skill that is difficult to teach using the traditional lecture approach.

As a result, new experiential methods are being developed to teach students effective decision making. For example, the Backwoods Brewing Company is an experiential exercise to teach students how to make decisions in the face of ambiguity (Cooper, McCrea & Backhaus, 2005). In this exercise, students are exposed to an ambiguous business situation that requires creativity to solve. TradeSmith is another experiential exercise used to demonstrate cognitive biases in a resource allocation decision application (Martz, Neil & Biscaccianti, 2003). A more novel tool is the use of interactive drama to teach the complexities of decision making (Holtom, Mickel & Boggs, 2003). In this case, instructors work with actors to create interactive scenes based on a decision making dilemma. Then, students work with the actors to enact recommendations to the dilemma.

In this paper, we present another experiential learning method to improve core decision making skills of management students. Our approach contributes to teaching current experiential methods in three ways. First, we provide a framework that instructors can use to take a more systematic approach to teaching decision making. The framework illustrates the different components that contribute to effective decision making including opportunity costs, the social construction of reality, cognitive heuristics or
biases, stakeholder participation, time constraints, generating alternatives, predicting consequences and reflective thinking. The framework can be applied to case studies in any area or discipline where there is a decision making dilemma. Second, we demonstrate how to apply our framework to teach a case study. Our application demonstrates how instructors can systematically work through a case to teach the different components of effective decision making. Third, we designed and conducted an exploratory research study measuring decision making effectiveness before and after a teaching intervention. The intervention consisted of providing in-class instruction on cognitive biases and systematically processing through the decision making framework using the San Jose State University (SJSU) blood drive ban case study. The subjects for the study were SJSU MBA students and Masters of Bio-technology (MBT) students.

Our paper is comprised of the following five sections. First, we present our decision making framework and its various components. Second, we outline the two research methods we used to test our framework through empirical inquiry. Third, we apply the framework to the SJSU blood ban case study. Fourth, we present and evaluate the results from the research study. Finally, fifth, we discuss the implications of our study to management education.

DECISION MAKING FRAMEWORK

Figure 1 provides the decision making framework developed from various literature streams on decision making and our own experience teaching decision making skills to graduate level students. The framework illustrates the major components of decision making and the sequence they can be considered when making important decisions. The first component addresses whether the decision really needs to be made in light of opportunity costs and the decision maker’s area of responsibility. Because of resource constraints there are opportunity costs to every decision. The importance of opportunity costs is that it forces decision maker to consider a more expanded set of alternatives and prioritize based on the availability of limited resources (Keasey & Moon, 1994). However, prior research has found that the “pervasive nature of opportunity costs causes us to ignore, or at least underplay, its role” (Levinthal & Wu, 2010 – pg. 794). Northcraft & Neale (1986) also observed that opportunity costs are often ignored in
decision making, and found that “decision aids which encourage or remind decision makers to consider
opportunity costs in an explicit manner…produce higher quality decisions” (pg. 354). Therefore, we teach
students to carefully prioritize and choose what issues they must focus on with regard to the extent of
their responsibility and opportunity costs.

The second component is known in the literature as the social construction of reality (Berger &
Luckmann, 1966; Searle, 1995; Weick; 1995; Hacking, 1999; Lynch, 2001). Its disciplinary roots are in
the fields of social psychology and sociology. As a social theory, it asserts reality in organizational,
political and social life is constructed by participants in their personal and institutional contexts. Weick
(1995) views it as a process of sense-making in which people interpret and frame the subjective into
something tangible. In particular, the concept of framing is seen as critical to the process of constructing
meaning (Gameson, Croteau, Hoynes & Sasson, 1992). Gameson et al. (1992) define frame as “a central
organizing principle that hold together and gives coherence and meaning to a diverse array of symbols”
(pg. 384). With regard to decision making, we argue that construction of reality depends on three major
inputs: cognitive biases, stakeholders and timing/ time constraints to make the decision. The combination
of these inputs determines how the decision is framed, positioned, processed and eventually made.

The third component arises from the disciplines of cognitive psychology and behavioral decision
theory. Researchers (Tversky & Kahneman, 1974) have identified specific cognitive heuristics or
information simplification processes that influence how a decision is perceived and subsequently framed.
The underlying reason for cognitive heuristics is the limitation of the human mind to absorb and process
large amounts of information in complex, uncertain and highly charged situations. Therefore, the human
mind resorts to using a variety of heuristics (rules of thumb) that simplify the information. It is this
simplification process that can introduce systematic errors or cognitive biases in the decision making
process that lead to poor decisions. Researchers identified the following six major types of cognitive
biases which were found to affect adversely strategic decision making (Schwenk, 1984):
1. Reasoning by analogy (Steinbruner, 1974) – simple analogies that are not applicable are used to
make sense out of complex problems.
2. Prior hypothesis bias (Levine, 1971) – decisions are based on strong prior beliefs about the
relationship between two variables. Information that is consistent with the prior beliefs is used
while disregarding information that contradicts these beliefs.
3. Escalating commitment (Staw, 1981) – prior decision to commit resources to a project is
reinforced with even more resources even after observing the project is failing.
4. Representativeness (Tversky & Kahneman, 1974) – tendency to generalize from a small sample
or a single anecdote to the entire population.
5. Illusion of control (Langer, 1975) – tendency to overestimate one’s ability to control events and
one’s ability to address problems if they arise.
6. Availability error (Tversky & Kahneman, 1974) – estimate the probability of an outcome based
on how easy the outcome is to imagine.

These cognitive biases determine how the decision is perceived and framed among the stakeholders in the
decision making group.

The fourth component is the collective input of stakeholders which is integral to how a decision is
positioned. Freeman (1984), a stakeholder theorist, defines stakeholders as “any group or individual who
can affect or is affected by the achievement of the organization’s objectives” (pg. 46) such as employees,
managers, suppliers, owners and customers. Stakeholders of public organizations include citizens,
taxpayers, service users, government, unions, interest groups, political parties (Bryson, 1995). Who is and
who is not included among the stakeholders as participants in the decision making can influence the final
resolution (Gomes, Liddle & Gomes). A key responsibility of the decision maker is to ensure that the
appropriate stakeholders with relevant expertise or experience necessary to analyze important facets of
the decision and its ultimate consequences are adequately represented in the decision making group.
Furthermore, the group context within which the decision is made determines whether cognitive biases
will lead to groupthink (Schwenk, 1984). Groupthink occurs when there is consensus in the decision
making group without questioning the underlying assumptions (Janis, 1972). Prior research has found a link between poor decision procedures and groupthink (Esser, 1998).

The fifth component, the timing of the decision and time constraints influences the extent of information acquisition and support to make the decision (Souren, Saunders & Haseman, 2005). Prior research has found that time pressures limit search for alternative solutions, and typically only a single option arises (Mintzberg, Raisinghani & Theoret, 1976). Therefore, timing is important to ensure relevant stakeholders are included in the appropriate stage of the decision making process and a sufficient number of alternatives or options are considered before making the final decision.

The sixth component is considering different alternatives to a decision. Normative decision theory suggests generating a number of alternative courses of action will lead to a better decision (Schwenk, 1984). However, in addition to time pressure, Alexander (1979) found that cognitive biases tended to reduce the number alternatives considered, and often the more creative alternatives were dropped first. To mitigate this tendency, various analytical tools for generating alternatives are useful such as scenario analysis, cost/benefit analysis, payback analysis and feasibility studies. The practitioner and academic sources recommend using scenario analysis for complex decision making (Russo & Schoemaker, 1989; Hill & Jones, 2010). Schoemaker (1991) defines scenario “as a script-like characterization of a possible future presented in considerable detail, with special emphasis on causal connections, internal consistency and concreteness” (pg. 549-550). The value of scenario analysis is that various scenarios are generated that “are based on the possible consequences intended or unintended of events that might occur” (Wilburn & Wilburn, 2011, pg. 164).

The seventh component is the prediction of consequences of different alternatives. Interestingly, prior research has found that decision makers tend to choose alternatives with more certain consequences rather than alternatives with more uncertain consequences (Yates, Jagacinski & Faber, 1978). The remedy for this tendency again is in the application of tools such as scenario analysis because the future is inherently unpredictable in terms of probable consequences. Scenario analysis allows stakeholder participants to anticipate different future situations and to generate a range of options to accommodate these differing views of the future (Courtney, Kirkland, & Viguerie, 1997). Another aspect of consequences is differentiating between intended and unintended consequences of the final decision. Follow-up of the chosen alternative is necessary to determine if unintended consequences have occurred and what impact these are having on all affected groups.

Reflective thinking, the eighth component, enhances decision skills by allowing for deeper learning and insights from the decision making process and the subsequent consequences (Bowers, Byron-Chew & Bowers, 2010). Reflective thinking is defined as developing the ability of the students to “integrate new information, to contemplate its meaning and relevance in terms of past knowledge, and culminating in the decision of whether to modify existing beliefs and assumptions based on what was learned” (Peltier, Hay & Drago, 2005). Students learn reflective skills when they are taught to think more deeply about what they have learned, learn more about themselves, and engage in critical inquiry that can change their current beliefs and assumptions (Hedberg, 2009).

We attest that systematic consideration of the components in our decision making framework will lead to better decisions. We test our assertion in two ways. First, we apply the framework to the SJSU Blood Drive suspension incident to evaluate the decision making process and outcome. Then we conduct a research study to determine if systematically considering the various framework components can improve decision making. The next section on research methods discusses the design of both empirical applications.

**RESEARCH METHODS**

Two different types of research methods were used to test the framework through empirical inquiry: case study method and experiential study. In the case study method, we purposefully selected the SJSU Blood Drive case (Osland & Inamdar, 2009) where a sub-optimal decision was made in order to determine if the framework would be useful in identifying what components led to the erroneous decision.
In effect, we systematically applied the framework components to analyzing the case with regard to the content and process used to make the decision.

Our second method was a before-intervention-after experiential study to determine if students improved their decision making skills. The subjects for our study were San Jose State University MBA and MBT students. Therefore, the unit of analysis is the student. Our sample size consisted of 24 MBA students and 25 MBT students. The study utilized the SJSU Blood Drive case (Osland & Inamdar, 2009) and two questionnaires, along with an in-class intervention. Appendix A has our first questionnaire that consists of questions covering the effectiveness of the decision, stakeholder inclusion, construction of reality, decision timing and decision consequences. Students filled this out as they read the case at home. Appendix B provides the second questionnaire that has questions similar to the first one, but now has a rating scale that students completed in class before and after the intervention.

The intervention consisted of a reading on cognitive biases and then systematically processing through the blood ban case using the framework. The reading provided an overview of the major cognitive biases with a short explanation of each type (Hill & Jones, 2009). It consisted of three pages and could be read easily in twenty minutes. After students read the case, the Harvard case study teaching method was used to process through the blood ban case in a highly interactive manner. Students shared their answers to the questions with other students and discussed additional issues that came up. After the discussion, students again completed the same questionnaire and this time answered some reflective questions asking if anything assisted them in improving their decision making skills and what they learned about their own decision making ability. The entire time for the in-class intervention was two and half hours, and it consisted of the following activities:

- twenty minutes to answer and rate the questionnaire,
- twenty minutes to read the material on cognitive biases,
- one hour to systematically process through the case using the framework components,
- half an hour to answer and rate the questionnaire including the reflective questions that were not on the first questionnaire, and
- twenty minutes to discuss what they learned about their own decision making ability and how they can improve this skill.

We analyzed the data from both questionnaires to determine the difference between the before and after responses. We developed a large customized database summarizing the questionnaire responses and ratings before and after the intervention. The database format allowed for comparison among the before and after responses for each student, while also enabling systematic comparisons of each type of response among students. We analyzed the two groups of students separately and compared them in our results section. Since our sample size is small (i.e., n=24 for each group) we used the dependent t-test for paired samples to obtain p-values to determine if the differences in responses are statistically significant.

DECISION MAKING FRAMEWORK APPLICATION TO A CASE STUDY

San Jose State University President Don Kassing sent a campus wide e-mail January 29, 2008 to inform students, staff and faculty that he has suspended all university blood drives. He wrote that the suspension was ordered on the grounds that the U.S. Federal Drug Administration’s lifetime blood donor deferral affecting gay men violates our non-discrimination policy (Tsao, February 4, 2008, Spartan Daily, January 30, 2008).

President Kassing’s decision sparked controversy among students apparent in the following exchange of opinions:

I can only wonder as to how many people are going to die as a result of Kassing’s foolish crusade (Spartan Daily Blog, January 31, 2008, 4:31 p.m.).
This is not “Kassing’s foolish crusade,” as you would think it is, this is a stand against the FDA’s discriminatory stance against the gay community! (Spartan Daily Blog, January 31, 2008, 5:51 p.m.).

The FDA policy banning gays from donating blood does not constitute a discriminatory action against the gay community; discrimination entails a positive loss on the part of those that are being discriminated against. The gay community is not losing anything tangible by being barred from donating blood. The FDA has a rational basis to bar gays from donating blood (patient safety). One thing that surprises me is that no one has thought that Kassing might be overstepping his jurisdiction. If this blood drive applied to student groups that wish to hold blood drives on campus, then he certainly is overstepping his jurisdiction. He is preventing students from organizing (Spartan Daily Blog, February 1, 2008, 11:55 a.m.).

The subsequent systematic application of the framework to the SJSU blood ban case study demonstrates how President Kassing and his leadership team reached the decision to ban blood drives from campus, which was later supported by the Academic Senate and many members of the community.

**Does a Decision Need to be Made?**

When considering the FDA ban on MSM blood donations, Kassing and his leadership team did not question whether the decision to ban blood drives was under their jurisdiction. Instead, we found that a gay employee of San José State University told the administration that he believed that the university was discriminating against gay men by allowing blood drives onto campus that would not take their blood. This was because of the federal government’s Food and Drug Administration’s (FDA) lifetime ban on receiving blood donations from MSM. So the gay employee filed the complaint that brought the issue to Kassing’s attention. The president’s office studied the matter and concluded that the gay employee was right – the FDA policy discriminated against MSM. Discrimination was defined broadly and not legally because there haven’t been any court cases alleging legal discrimination because giving blood is a privilege and not a right. Therefore, Kassing’s questionable jurisdiction suggests this decision did not need to be made.

**Construction of Reality**

Reality was constructed by Kassing, supporters on his staff, and the members of the Academic Senate from a civil rights sociological perspective, not a legal one since we found no court cases pending on this issue or decisions that support Kassing’s view. Clues to socially constructed reality include the emphasis on diversity and the advocacy on behalf of gay men. However, the issue according to the FDA is focused on risk analysis and protecting patients’ safety during any type of treatment that requires blood transfusion. Based on prior research studies, patient safety was the primary concern of the FDA – not active discrimination against MSM. The stringent policy was adopted in 1985 because some of the blood supply had been contaminated with HIV. The civil rights view shaped thinking to focus on perceived inequity rather than the real patient safety risk that exists from accepting blood donations from MSM. The difference between the FDA’s and SJSU’s construction of reality can be attributed to cognitive biases and stakeholders that were excluded from the decision making.

**Cognitive Biases**

The main cognitive biases that were present include reasoning by analogy and illusion of control. The reasoning by analogy bias motivated the leadership to support the ban on blood drives because they equated the FDA policy against MSM with the discrimination endured by other groups such as blacks. Though one can include gays in civil rights discussions because they too have suffered and continue to suffer discrimination, rejecting them as blood donors is because of the high incidence of STDs in the
MSM population. The illusion of control bias compelled Kassing to believe that the SJSU blood drive suspension would encourage the FDA revisit the ban. To date, the FDA has not changed its policy on banning MSM donations based on the SJSU ban.

**Stakeholders**

Another key contributor to the civil rights view can be attributed to the stakeholders that were excluded from the decision making. Key stakeholders that were left out are the patients receiving blood transfusions, potential donors of blood and physicians and health care professionals who work in the blood industry. Also, Kassing and supporters did not refer to expert opinion cited in refereed blood industry publications. A review of the blood industry expert commentary revealed that no credible blood industry expert suggested that MSM be free to give blood. It is also important to note that the group context within which the decision was made led to groupthink. Kassing and his leadership team appeared to be locked into a “discriminatory” mind-set when making the decision to ban blood drives. Therefore, the selection of decision makers and groupthink affected the construction of reality on which the decision was based.

**Time Constraints and Options**

Kassing and his leadership team took nine months to make the decision from the time the complaint was filed. So, there appears to have been enough time to research and debate the issue. However, it is unclear if the time was used to gather the appropriate information to make the decision since there were no references made to the blood industry literature or to the legal literature regarding discrimination. Kassing didn’t suggest less extreme options such as banning the drive from campus property, but allowing SJSU students to organize and hold the blood drive in another location, although this is what students did initially.

**Consequences**

It is not clear to what extent Kassing and his leadership team considered the short and long-term consequences of their decision. In the short-term, President Kassing received kudos from gay civil rights groups and local community groups that equated the FDA ban on donations from MSM as discriminatory. In the long-term SJSU blocked the potential donation of blood by students, staff and faculty who would have donated, but did not have the opportunity. Michele Hyndman, the Public Relations Director at the Stanford Blood Center, commented on the reduction of blood donations (September 3, 2008):

> Stanford Blood Center typically collected 300 donations each year at SJSU. The American Red Cross collected 500 each year. Currently, 20% of our blood collection comes from students in high school and college. Particularly with students, if donating is not convenient, most won’t seek it out on their own. If we’re on campus and it’s convenient, they donate. The ban has kept students from donating.

People who would have donated were not able to, which in turn reduces the supply in blood banks available for patients requiring blood transfusions. In effect, there was the unintended consequence of reducing the amount of blood available for patients.

**Reflection**

To mitigate the effects of unintended consequences, reflection is important for questioning underlying assumptions and values when making the decision. The case suggests there was limited reflection based on the following actions that did not occur but often do in decision making processes in public institutions:

- Neither faculty nor administrators mentioned students in the decision making process.
- There were no public hearings where all faculty, employees and students were invited to opine about the proposed suspension.
• There were no white papers that cited established expert opinion from the blood industry.

External observers wondered how a university could take a decision based on advocacy as opposed to including a careful risk assessment. In sum, the systematic application of the framework to the blood ban case demonstrates that if the various components of the framework are not considered in the decision making process suboptimal decision will be made, even by seasoned senior level administrators.

RESULTS OF THE RESEARCH STUDY ON DECISION MAKING

The teaching intervention in our research study included an in-class reading on cognitive biases and the systematic application of the framework to the blood ban case as discussed in the previous section. Table 1 provides a descriptive summary of the two student groups. The first group consisted of MBA students with an equal number of males and females. The most prevalent age was 26-30 and the average number of years of work experience was 6.8 years. The second group consisted of MBT students. Again there were an equal number of males and females. The most prevalent age was 20-25 with an average of 3.2 years of work experience.

| TABLE 1
DESCRIPTIVE SUMMARY OF STUDENT GROUPS |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Group</td>
<td>Gender Distribution</td>
<td>Age Ranges</td>
</tr>
<tr>
<td>MBA Capstone Course Students (n = 24)</td>
<td>Males (n = 12) Females (n = 12)</td>
<td>20-25 (n = 3) 26-30 (n = 15) 31-35 (n = 3) 36-40 (n = 2) 45+ (n = 1)</td>
</tr>
<tr>
<td>MBT Management Course Students (n = 24)</td>
<td>Males (n = 12) Females (n = 12)</td>
<td>20-25 (n = 18) 26-30 (n = 3) 31-35 (n = 1) 36-40 (n = 0) 45+ (n = 2)</td>
</tr>
</tbody>
</table>

Table 2 provides descriptive statistics for the ratings of the questions before and after the intervention by both the MBA and MBT student groups. The p-value indicates if the difference between the before and after rating was significant for each question.
TABLE 2
DESCRIPTIVE STATISTICS OF QUESTION RATINGS BY GROUP

<table>
<thead>
<tr>
<th>Student Group</th>
<th>Descriptive Statistics</th>
<th>Question 2</th>
<th>Question 3</th>
<th>Question 4</th>
<th>Question 5</th>
<th>Question 6</th>
<th>Question 7</th>
<th>Question 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBA (n=24)</td>
<td><strong>Average</strong></td>
<td>2.7</td>
<td>1.9</td>
<td>2.4</td>
<td>1.9</td>
<td>3.6</td>
<td>3.5</td>
<td>2.3</td>
</tr>
<tr>
<td></td>
<td><strong>Std Dev</strong></td>
<td>1.2</td>
<td>1.1</td>
<td>1.0</td>
<td>0.9</td>
<td>1.1</td>
<td>1.1</td>
<td>1.2</td>
</tr>
<tr>
<td></td>
<td><strong>T-test (p-value)</strong></td>
<td>0.02</td>
<td>0.02</td>
<td>0.07</td>
<td>0.09</td>
<td>0.39</td>
<td>0.42</td>
<td>0.06</td>
</tr>
<tr>
<td>MBT (n=24)</td>
<td><strong>Average</strong></td>
<td>2.4</td>
<td>2.4</td>
<td>1.7</td>
<td>1.9</td>
<td>3.3</td>
<td>3.6</td>
<td>2.4</td>
</tr>
<tr>
<td></td>
<td><strong>Std Dev</strong></td>
<td>0.8</td>
<td>0.8</td>
<td>1.0</td>
<td>1.1</td>
<td>1.1</td>
<td>0.8</td>
<td>0.9</td>
</tr>
<tr>
<td></td>
<td><strong>T-test (p-value)</strong></td>
<td>1.00</td>
<td>0.004</td>
<td>0.05</td>
<td>0.22</td>
<td>0.19</td>
<td>0.21</td>
<td>0.05</td>
</tr>
</tbody>
</table>

(See Appendix B for the questionnaire)

Question 2 asks if the decision was effective. The MBA group significantly (p<0.02) changed their ratings from being acceptable to disagreeing with the decision. Students attributed the change in their ratings to learning about and understanding the cognitive biases that were present in the decision making process:

“After the discussion I realized that there were cognitive biases on the part of the President and his staff during their decision-making process.”

“Facts and cognitive biases such as groupthink, illusion of control, reasoning by analogy, prior hypothesis and representativeness show that it was a weak decision and many stakeholders were not considered.”

Interestingly, the MBT group did not change their ratings of disagreeing with the effectiveness of the decision. As biological science majors, they noted that the decision did not take into account scientific data; perhaps they were more conscious of the risks than sensitive to perceived discrimination as stated in the comments listed below under question 4.

Question 3 asks if the right people were included in the decision making process. Both groups of students significantly (p<0.02 and P<0.004) changed their ratings towards disagreeing that the right people were included in the decision making. During the class discussion of the case, as students listed the individuals affected by the decision, they realized some key stakeholders were not included in the decision making process. Students also realized the inclusion of stakeholders such as blood science industry experts may have changed how the underlying reality was constructed during the decision making.

Question 4 asks if the civil rights perspective is an effective basis for this decision. In this case, although both groups changed their rating towards disagreeing with the perspective, the MBT level of significance (p<0.05) was higher than the MBA group (p<0.07). Some reasons for the change are the following:

“The public health perspective should have been included as well.”

“Civil rights is an effective perspective, it is not the only one. The patient safety perspective outweighs the civil rights.”

Interestingly, although the public health studies on MSM blood were provided in the case reading, students only acknowledged the importance of patient safety after understanding the cognitive biases and limited stakeholder involvement that went into positioning this decision from a civil rights view.
Question 5 asks if there was enough time to make the decision, the before and after ratings did not change significantly for both groups. Based on the case reading, students estimated there was about 6 to 9 months to make the decision. Most felt there was enough time. However some questioned whether the time was used wisely.

Questions 6 and 7 ask about short and long-term consequences, again the before and after ratings did not change significantly. During the class discussion, both groups felt the short-term and the long-term consequences may not have been adequately considered by the president and his leadership committee or the Academic Senate.

Question 8 asks if a better decision could have been made. Both groups significantly changed their ratings towards agreeing a better decision could have been made. Some reasons given by students for the change are the following:

“After considering the biases and groupthink, a better decision could have been made.”
“Now knowing the decision making process, I think if they consulted more people and went through the steps with more perspectives, they may have reached a better decision”.
“They should have considered medical safety of people to be of a higher precedence than civil rights privileges.”
“The entire point of the blood drive suspension was to change the FDA policies. Since, the desired result was not obtained, this decision was not effective.”
“Without a broader perspective and scenario planning they did not make the best decision.”

Towards the end of the case discussion, students realized the leadership could have explored several “alternatives” or scenarios when making the decision. For example, they felt SJSU could have sponsored a debate with the FDA, rather than banning the blood drive altogether.

**Improving the Decision Making Process**
After the intervention, the follow-up questionnaire asked students to rank four items that assisted with improving their decision making from 1 being most important to 4 being least important. Table 3 provides the results. Students in both classes ranked the four items in the same order. Understanding cognitive biases was given the highest ranking, primarily because students were not even aware they had these biases prior to the class. Similarly, construction of reality received the next highest ranking because students had not considered that reality is constructed and it can impact decision making. Students also found it helpful to process through the case using the different components of the framework. Students found the interaction helpful in learning about how others made decisions even though they gave listening and learning from peers the lowest rank.

<table>
<thead>
<tr>
<th>Student Group</th>
<th>Understanding Cognitive Biases</th>
<th>Understanding Construction of Reality</th>
<th>Processing through the case (framework)</th>
<th>Listening and Learning from Peers</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBA (n=24)</td>
<td>1 (average = 1.9)</td>
<td>2 (average = 2.1)</td>
<td>3 (average = 2.8)</td>
<td>4 (average = 3.3)</td>
</tr>
<tr>
<td>MBT (n=24)</td>
<td>1 (average = 1.7)</td>
<td>2 (average = 2.5)</td>
<td>3 (average = 2.8)</td>
<td>4 (average = 3.0)</td>
</tr>
</tbody>
</table>
Question 10 on the follow-up questionnaire asked students to comment on what they learned from the intervention with regard to their own decision making skills. The objective of the question was to encourage reflective thinking in the decision making process. The following are some of the responses:

“I’ve learned that I need to be more aware of these proven cognitive biases that all people have to a certain extent.”

“My decision making is easily influenced by others’ points of view.”

“It is important to avoid biases, collect data and comprehensively analyze the situation from both a short and long term perspective.”

“I have many biases and it’s easy to lean towards previous judgments to make hasty decisions but not necessarily the best.”

“Realizing different views of reality holds the most impact in decision making. Your reality may be different than the next person.”

“I learned I need to think about the consequences and consider several different alternatives before choosing one.”

“I jumped to conclusions without going through the steps discussed in class (framework). Although my peers agreed with me in some areas there were areas where my peers added good points I had not considered.”

“If I follow this decision making procedure (case discussion using the framework), I will make different and better decisions.”

In sum, our intervention using the decision making framework significantly changed student responses before and after the intervention. The ranking and reflective comments of the students suggest the concepts of cognitive biases and constructions of reality were relatively more important than the other components of the framework.

DISCUSSION

The results of our research study suggest that the application of our decision making framework to the SJSU blood drive suspension case provides a systematic way to teach students how to make better decisions. Russo and Schoemaker (1989) in their book, Decision Traps stress the importance of examining the process of decision making systematically in order to understand how each part of the process can result in decision errors. In the blood ban case, students learned that decision makers can make errors by choosing to make a decision not within their area of responsibility/authority, by constructing reality that is filled with cognitive biases, by only selecting like minded participants and excluding important stakeholders and finally by not realizing positive short-term consequences can come at the detriment of negative long-term consequences. In effect, the systematic approach allowed students to consider many aspects of decision-making that can “often lead to better decisions than hours of unorganized thinking or relying on intuitive judgment alone.” (Russo & Schoemaker, 1989, pg. 3).

Our teaching intervention also required students to reflect and discuss how they can improve their decision making skills. Interestingly, during the reflection process, two additional reasons for the blood drive suspension were proposed. First, students made the following remarks on President Kassing receiving kudos and praise from civil right groups.

“The decision was effective for President Kassing, he received much honor for his decision.”

“Kassing wanted to be viewed in a positive light and win support, not to make the best decision.”

“Kassing did not look deeply into the situation and study the ill effects of his decision. I think he did it to receive accolades from his fellows and the Senate for being ethical.”
These comments suggest another reason affecting decision making could be the leader’s desire to feel heroic and be remembered. Becker (1997), in his Pulitzer prize winning book The denial of death, discussed the importance of heroism in terms of immortality. Campbell (1949) also wrote about this in the popular The hero with a thousand faces. People are seldom faced with opportunities to do heroic things. They can be prudent and escape the limelight or they can be bold and enjoy the fifteen minutes of fame Andy Warhol said we’d all have in the future (Fifteen minutes of fame, n.d.). This could have been President Don Kassing’s moment for 15 minutes of fame and he seized it. We aren’t questioning his sincerity or implying that he sought media fame but that he chose to be bold in his leadership to make a difference.

Another reason affecting decision making was the role culture played in the decision making process. Though the local milieu is not discussed in the case, many students and most adults are aware of the liberal orientation of the Bay Area. San José is part of the Bay Area which is known for acceptance of diversity including gays. The Castro District of San Francisco has been a gay enclave for decades but gays live throughout the area without suffering overt discrimination in housing or employment. Interestingly, diversity trumped concern regarding tainted blood.

Schein (1985) speaks of organizational culture in terms of what an outside observer can see, the culture’s professed values, and the basic assumptions that are implicit in the culture. Schein would likely use the implicit assumptions to explain the decision that the university adopted as opposed to a critical thinking approach that valued the risk analysis performed by experts in the blood industry. Using Schein’s view of culture, understanding paradoxical organizational behaviors becomes more apparent. SJSU teaches critical thinking and emphasizes valuing diversity yet the president and those advising him seemed to overlook some critical risk factors in favor of diversity, adopting what appeared to be an advocacy model.

Another point that came up during class discussion was the role of intuition in decision making. Students wondered how their “gut feeling” contributed to effective decision making. Interestingly, Behling and Eckel (1991) find that: “intuition is gaining a new respectability in the corporate world…it is back in style and top managers take it quite seriously” (pg. 47). Myceck (2000) also finds “many companies including Dell, Motorola, Intel, DuPont and General Electric have launched training programs to develop intuitive abilities of their employees” (pg. 2) primarily to improve decision making. And a survey of Fortune 500 executives found that eleven percent said they “always” use their intuition in decision making; 53 percent they “often” use their intuition” (Myceck, 2000, pg. 4). Russo and Schoemaker (1989) state the reason intuition plays an important role in decision making is that it takes into account knowledge that cannot be put into words or processing of information by the mind that cannot be formalized as a decision rule.

The actual role of intuition in decision making appears to depend on how it is conceptualized (Behling & Eckel, 1991). Behling and Eckel (1991) find that intuition is conceptualized in six separate ways in the literature, and each has different implications for its study, development and use in decision making. Therefore, they advise future research on intuition must be consistent in its conceptualization to be of value in understanding how it affects decision making. Naturalistic decision making (Klein, 2007) embraces the importance of intuition based on expert knowledge and experience, not amateurish gut feel sometimes associated with the term.

To conclude, we view the decision framework as a work in process with opportunity for future research to focus on further refinements and testing of robustness. One suggestion, from our class discussion, is to refine the framework to include the effects of heroism, culture and intuition in decision making. In order to test the robustness of the framework, it can be applied to teach cases from different areas and disciplines. Encouragingly, the systematic application of the framework, as it is now, appears to be a useful aid in teaching management students how to decide.
REFERENCES


**APPENDIX A**

**Case Questions Completed at Home by Students**

**Campus Blood Drive Suspension Case Questions for Case Discussion**

Name: _________________________________________________________________

Class: ______________________________________ Date: ___________________

Read the case entitled, “Campus Blood Drive Suspension: Effective or Ineffective Organizational Decision Making?” Answer the following questions from the SJSU perspective.

1. What was the decision?
2. Was the decision effective? Explain why or why not.
3. Were the right people included in the decision making process?
4. Shared reality among decision makers was constructed from a civil rights perspective – is this an effective basis for the decision?
5. Was there enough time to make the decision?
6. Do the short-term consequences of leadership receiving kudos from gay civil rights groups and general population in support of human rights indicate effective decision making on the part of SJSU leadership?
7. What is one long-term consequence of this decision? Does this indicate effective decision making on the part of SJSU leadership?
8. Could a better decision have been made? Explain why or why not.
APPENDIX B

Case Questions Completed Before and After the Intervention
Campus Blood Drive Suspension Case Questionnaire for Case Discussion

Name: _________________________________________________________________
Class: ______________________________________ Date: ___________________
Gender: 
Male _________  Female _________
Age Range: 
20 to 25 years _________
26 to 30 years _________
31 to 35 years _________
36 to 40 years _________
41 to 45 years _________
45 years + _________
Class level: 
Graduate ________  Undergraduate _________
Years of work experience: _________________

Instructions:
• Prepare the case entitled, “Campus Blood Drive Suspension: Effective or Ineffective Organizational Decision Making?”
• The questionnaire asks you to answer the questions two times on a scale 1 to 5.
  1. First, rate your answers in the first box before we go through the case discussion. Answer the questions only for SJSU – not for CSU North Bay.
  2. Hand in your answers to the Professor and obtain the two page strategic decision making reading on cognitive biases and read before the case discussion.
  3. Second, rate your answers in the second box after you have read the brief reading on strategic decision making and we go through the case discussion.
  4. If your rating has changed, please explain why.
  5. Answer the last two questions only after the case discussion.
  6. Hand-in your questionnaire to the Professor.

Campus Blood Drive Suspension Case Questionnaire for Case Discussion – Cont.

1. What was the decision?

<table>
<thead>
<tr>
<th></th>
<th>Before the Case</th>
<th>After the Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Disagree</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Acceptable</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Agree</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

2. Was the decision effective? Explain change.

<table>
<thead>
<tr>
<th></th>
<th>Before the Case</th>
<th>After the Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Disagree</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Acceptable</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Agree</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

3. Were the right people included in the decision making process? Explain change.

<table>
<thead>
<tr>
<th></th>
<th>Before the Case</th>
<th>After the Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Disagree</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Acceptable</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Agree</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

4. Shared reality among decision makers was constructed from a civil rights perspective – is this an effective basis for the decision? Explain change.

Before the Case:
Campus Blood Drive Suspension Case Questionnaire for Case Discussion – Cont.

5. Was there enough time to make the decision? Explain change.
Before the Case:

After the Case:

6. Do the short-term consequences of leadership receiving kudos from gay civil rights groups and general population in support of human rights indicate effective decision making on the part of leadership? Explain change.
Before the Case:

After the Case:

7. What is one long-term consequence of this decision?
Does this consequence indicate effective decision making on the part of leadership? Explain change.
Before the Case:

After the Case:

8. Could a better decision have been made? Explain change.
Before the Case:

After the Case:

9. After working through the case in class, rank the following in terms of assisting you with improved decision making and list any additional items that were helpful. Rank by using 1,2,3…
Understanding cognitive biases and how these impact decision making
Listening to your peers and their responses to the case questions
Systematically processing through the case in class
Learning and Understanding how different constructions of reality or point of view impact decision making (i.e. civil rights vs. something else)
Other
Other

10. What did you learn about your own decision making skills?
Qualitative Determinants of Undergraduate Academic Performance: 
A Case Study

Hamid Tabesh
University of Wisconsin-River Falls

Dawn Hukai
University of Wisconsin-River Falls

Many studies have evaluated the impact of the quantity of hours college students work on academic performance. In addition, studies suggest that people who focus on improving their weaknesses over time can achieve expertise (Ross, 2006). However, there have been relatively few studies that examine the relationship between different qualitative aspects of study and academic performance. Using cross sectional data from Spring 2010 for a sample of undergraduate accounting, business, and economics students, this paper attempts to rectify this deficiency in the literature by examining the effects of deliberate study on the academic performance.

INTRODUCTION

Many Americans believe that effort and ability are independent of one another, or even negatively related (Nelson-Le Gall and Resnick, 1998). Parents often encourage their children to 'stick to the things you are good at' rather than spend time trying to improve areas of weakness: 'You're just not good at math.' However, deliberate practice studies have shown that spending time on activities designed to improve upon existing deficiencies does lead to improvement, especially when the activities are supported by parents and teachers (Ericsson, 2006). This paper investigates the effect of deliberate study on undergraduate student academic performance.

ACADEMIC PERFORMANCE LITERATURE REVIEW

Investigations of undergraduate student academic performance have tended to focus on hours of work and financial difficulties as factors that potentially lower grade point average (GPA) (Salamonson and Andrew, 2006; Hawkins, Smith, Hawkins, and Grant, 2005; Callendar, 2008; Baffoe-Bonnie and Golden, 2007). However, some studies have found benefits to working between 10-19 hours (Dundes and Marx, 2006-2007) and differences in how hours of work affect upperclassmen versus freshmen (Arano and Parker, 2008). The magnitude of actual debt does not directly impact student GPA, although the ability to pay bills on time does significantly increase GPA (Xiao, Tang, and Shim, 2009).

Evidence of the impact of hours of study on academic performance has been mixed. Stinebrickner and Stinebrickner (2008) found a non-linear and significant relationship between study time and cumulative GPA. However, other studies have found the amount of hours studied to be significant only
when the quality of study is also considered. Systematic and disciplined study improves academic performance (Rau and Durand, 2000). Students expecting relatively complex test questions use a deeper approach to study and receive higher grades (Ross, et al., 2003). In fact, one study found that students who studied in a quiet, focused environment actually studied for less time than those in other environments (Plant, Ericsson, Hill, and Asberg, 2005).

Deliberate study is differentiated by the amount of concentration that is focused on conscious improvement. Given the intensity of the effort, it has been found that no more than 4-5 hours per day of deliberate practice may be undertaken without the risk of burnout (Ericsson, 2006). Rest and sufficient sleep are important for recovery, which may drive the mixed evidence on hours worked and academic performance if work interferes with sleep despite concentrated study. In this study, we used the likelihood of assigned textbook utilization and the likelihood of focusing on improving weakest areas when studying as proxy variables for deliberate study.

**METHODOLOGY**

**GPA Model**

Deliberate study and individual student characteristics have an impact on academic performance. Based on a utility maximization model, the following production function explains a student's academic performance.

\[ CGPA_i = f(S_i, D_i, FB_i) \]

CGPA\(_i\) is the cumulative grade-point average; S\(_i\) is the use of deliberate study; D\(_i\) is a vector of student demographic variables; and FB\(_i\) is a vector of family education variables. Unlike many previous studies, the model is not based on time utilization, because deliberate study focuses on the quality, not quantity, of study.

The primary interest of the paper is whether deliberate study leads to higher or lower student academic performance. Deliberate study was measured by whether the student was highly likely to use the assigned textbook and whether the student was highly likely to focus on improving weakest areas when studying. A number of variables are included to control for differences among students that have been shown to impact GPA in earlier studies. Gender, childless status, and tutoring variables are in this group and are expected to be negatively related to academic performance. Concern with male academic performance is well-established even in the mainstream media. Students with children are generally more focused and motivated than childless students, although childcare responsibilities could also lead to greater distraction during study sessions. Students who self-select into tutoring services generally only do so after their academic performance has suffered, and there is a time lag before grades improve. A maternal education variable is included because family support has been anecdotally related to deliberate study, and the expected sign is positive. However, the opposite sign could occur if over-parenting prevented the students from developing their own coping mechanisms. Finally, whether the student's total loans and grants surpass $10,000 was included because of the relative stress and distraction that financial need may produce. A negative sign is expected on the loan and grant variable.

The empirical model for academic performance is specified as:

\[ CGPA_i = \beta_0 + \beta_1 \text{MALE}_i + \beta_2 \text{NOKIDS}_i + \beta_3 \text{MGRAD}_i + \beta_4 \text{OVER10}_i + \beta_5 \text{HIGHTEXT}_i + \beta_6 \text{TUTOR}_i + \epsilon_i \quad (1) \]

All of the variables in (1) are defined in Table 1.

**DATA**

The data that are the basis for the study were collected with an in-class survey at a state university in the Midwest. The survey was administered to 239 students at the end of the spring 2010 semester. The questions inquired about student and family demographic information, student finances, and student employment. Ten students chose not to respond to the survey. Of the remaining 229 surveys, 15 were
incomplete because the entire back page was missing. Finally, 5 students did not report grade-point average information and 1 student did not respond to the gender question. The final sample was therefore 208 student survey responses.

Table 1 reports detailed variable descriptions and summary descriptive statistics for the final sample. Slightly more males (54%) than females took the survey. Approximately 10% of the students had at least one child. Slightly more than 10% of students' parents have a graduate degree. Almost a third (32%) of students had more than $10,000 in loans and grants. It was clear that not all students used a deliberate study approach, as only 36% were very likely to use the assigned text. Tutoring services were requested by 18% of the students.

Table 2 reports univariate correlations for the variables of interest. As expected, there are significant negative correlations between academic performance and male gender, childlessness, and tutoring usage. There is a significant positive correlation between GPA and textbook usage. In addition, childlessness is significantly negatively correlated with high amounts of student loans and grants and textbook usage, indicating traditional students may have less financial concerns, but also less motivation to undertake deliberate study. There is also a significantly negative correlation between maternal graduate education and high levels of loans and grants, demonstrating a lower level of financial need for students with highly educated parents.

RESULTS

Multivariate regression results for (1) are reported in Table 3. As expected, there is a significantly positive impact of deliberate study, represented by HIGHTEXT, on academic performance. The effect is still significant after controlling for gender, parental status, tutoring usage, and the amount of student loans and grants, which all are significantly negatively related to cumulative GPA as expected. The likelihood of focusing on improving areas of weakness when studying was not significant and was dropped from further analysis. Maternal education has an unexpected and significant negative correlation, which may be a sign that helicopter parenting has prevented the development of some important life skills. Furthermore, we did control for the effects of age of students and number of their children, but they were not significant due to minimal variations in them and thus are not reported here.

As a sensitivity test, weekly hours of work was also included as a regression variable. The coefficient on work hours was extremely insignificant, and the other coefficients were nearly identical to the original model. Similarly, the coefficient on weekly hours of study was also insignificant when it was included in the model. Given these results and the mixed results of other studies focusing on time utilization models, the amount of time spent on various activities does not seem to have a direct impact on academic performance. The quality of study is the crucial factor.

CONCLUSION

This paper documents the positive effect of deliberate study on the grade point averages of economics and accounting students. While many students eschew textbook use evidence continues to establish that academic performance can be improved through deliberate study as measured by the likelihood of textbook use when studying. Future research on this subject needs to address several limitations of our study. One of these limitations is that our cross-sectional data do not permit investigation of how deliberate study evolves and develops over time. Furthermore, our sample focused on students with majors in accounting, business and economics and did not consider students with majors in other areas such as humanities, fine arts, sciences and education, as such, it has a limited scope and one should not infer too much from our results that apply to population of undergraduate students in all majors. In addition, students’ belief of whether or not they have an aptitude for the subject may influence the quality of their study and future studies in this area has to control for its effect.
### TABLE 1

**VARIABLE DEFINITIONS AND DESCRIPTIVE STATISTICS**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CGPA</td>
<td>Cumulative grade-point average up to Spring 2010</td>
<td>208</td>
<td>2.000</td>
<td>4.000</td>
<td>3.193</td>
<td>.445</td>
</tr>
<tr>
<td>MGPA</td>
<td>Major grade-point average up to Spring 2010</td>
<td>208</td>
<td>2.000</td>
<td>4.000</td>
<td>3.211</td>
<td>.485</td>
</tr>
<tr>
<td>MALE</td>
<td>1 if respondent is male</td>
<td>208</td>
<td>0</td>
<td>1</td>
<td>.54</td>
<td>.500</td>
</tr>
<tr>
<td>NOKIDS</td>
<td>1 if respondent is childless</td>
<td>208</td>
<td>0</td>
<td>1</td>
<td>.90</td>
<td>.296</td>
</tr>
<tr>
<td>MGRAD</td>
<td>1 if student's mother's education is a graduate degree</td>
<td>208</td>
<td>0</td>
<td>1</td>
<td>.12</td>
<td>.320</td>
</tr>
<tr>
<td>OVER10K</td>
<td>1 if the student's loans and grants are over $10,000</td>
<td>208</td>
<td>0</td>
<td>1</td>
<td>.32</td>
<td>.467</td>
</tr>
<tr>
<td>HIGHTEXT</td>
<td>1 if the student was very likely to study the text</td>
<td>208</td>
<td>0</td>
<td>1</td>
<td>.36</td>
<td>.480</td>
</tr>
<tr>
<td>TUTOR</td>
<td>1 if the student ever requested a tutor</td>
<td>208</td>
<td>0</td>
<td>1</td>
<td>.18</td>
<td>.383</td>
</tr>
</tbody>
</table>

### TABLE 2

**CORRELATION MATRIX**

<table>
<thead>
<tr>
<th></th>
<th>CGPA</th>
<th>MALE</th>
<th>NOKIDS</th>
<th>MGRAD</th>
<th>OVER10K</th>
<th>HIGH TEXT</th>
<th>TUTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>CGPA</td>
<td></td>
<td>-.12* (.09)</td>
<td>-.17** (.01)</td>
<td>-.09 (.18)</td>
<td>-.11 (.12)</td>
<td>.15** (.03)</td>
<td>-.21*** (.00)</td>
</tr>
<tr>
<td>MALE</td>
<td>-.13* (.07)</td>
<td></td>
<td>.09 (.19)</td>
<td>.03 (.64)</td>
<td>-.14* (.05)</td>
<td>-.10 (.16)</td>
<td>-.02 (.74)</td>
</tr>
<tr>
<td>NOKIDS</td>
<td>-.17** (.01)</td>
<td>.09 (.19)</td>
<td></td>
<td>.07 (.34)</td>
<td>-.16** (.02)</td>
<td>-.20*** (.00)</td>
<td>.02 (.73)</td>
</tr>
<tr>
<td>MGRAD</td>
<td>-.10 (.16)</td>
<td>.03 (.64)</td>
<td>.07 (.34)</td>
<td></td>
<td>-.15** (.03)</td>
<td>.05 (.51)</td>
<td>-.01 (.88)</td>
</tr>
<tr>
<td>OVER10K</td>
<td>-.11 (.10)</td>
<td>-.14* (.05)</td>
<td>-.16** (.02)</td>
<td>-.15** (.03)</td>
<td></td>
<td>.01 (.87)</td>
<td>-.04 (.50)</td>
</tr>
<tr>
<td>HIGH TEXT</td>
<td>.15** (.04)</td>
<td>-.10 (.16)</td>
<td>-.20*** (.00)</td>
<td>.05 (.51)</td>
<td>.01 (.87)</td>
<td></td>
<td>.05 (.49)</td>
</tr>
<tr>
<td>TUTOR</td>
<td>-.22*** (.00)</td>
<td>-.02 (.74)</td>
<td>.02 (.73)</td>
<td>-.01 (.88)</td>
<td>-.05 (.50)</td>
<td>.05 (.49)</td>
<td></td>
</tr>
</tbody>
</table>

Pearson Correlations are reported above the diagonal. Spearman Correlations are reported below the diagonal.

* Correlation is significant at the .10 level (2-tailed)
** Correlation is significant at the .05 level (2-tailed)
*** Correlation is significant at the .01 level (2-tailed)
TABLE 3
PARAMETER ESTIMATES OF CUMULATIVE GPA MODEL

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>Coefficient</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONSTANT</td>
<td>3.535***</td>
<td>.000</td>
</tr>
<tr>
<td>MALE</td>
<td>-.104*</td>
<td>.081</td>
</tr>
<tr>
<td>NOKIDS</td>
<td>-.230**</td>
<td>.025</td>
</tr>
<tr>
<td>MGRAD</td>
<td>-.158*</td>
<td>.088</td>
</tr>
<tr>
<td>OVER10K</td>
<td>-.170***</td>
<td>.009</td>
</tr>
<tr>
<td>HIGHTEXT</td>
<td>.117*</td>
<td>.063</td>
</tr>
<tr>
<td>TUTOR</td>
<td>-.265***</td>
<td>.001</td>
</tr>
</tbody>
</table>

n=208
Adj. R²=.12

* Significant at the .10 level
** Significant at the .05 level
*** Significant at the .01 level

REFERENCES


The Expected Value of Cheating

Craig H. Wisen
University of Alaska Fairbanks

Cheating in a traditional test setting is estimated to be of a magnitude similar to the proportion of firms that backdate employee stock options. This paper describes a methodology for the detection of cheating. The simple method for detecting cheating is presented in this study and applied to a large undergraduate class. The tool is easy to implement and provides valuable lessons in estimating the expected value of cheating, statistical size, type II errors, type I errors, and hypothesis testing.

INTRODUCTION

Cheating in academia occurs in a wide variety of contexts. The purpose of this study originated as an exam for an undergraduate finance class composed of 178 students. The study is subject to several constraints and limitations, because the test was not explicitly designed to detect cheating, and the test setting was not structured to be an experimental design on human subjects. Nevertheless, the results are instructive on several dimensions.

Faculty, staff, and students were genuinely surprised more by the ease at which cheating could be detected than by the extent to which cheating occurred. Approximately 25% of students cheated on the exam based on the cheater detection algorithm, which utilized a telltale pattern of improbable responses. Approximately 87% of the cheaters were male. By comparison, male students represented approximately 70% of the sample in which no indications of cheating were detected. The 25% rate of cheating is biased downward for two reasons. First, the algorithm was limited to the detection of a single cheating strategy. Second, the criteria for identifying cheating used a conservative estimate of observing the improbable responses.

Developing methodologies to detect cheating date back over a thousand years. For example, the practice of biting a gold coin was a test of softness, since counterfeit coins were debased with metals that were more resistant to deformation. Stock option backdating is a relatively recent discovery of cheating (Lie, 2005) that is based on a detection method similar to the current study, specifically a telltale pattern of improbable exercise prices. Cheating at the firm level is also similar in magnitude to student cheating in the current study. Heron and Lie (2009) estimate that 29.2% of firms manipulated grants to top executives at some point between 1996 and 2005. Of the 2,000 companies alleged to have manipulated stock option grants there were 12 criminal convictions. Roughly 150 companies were required to restate their financials (Lattman, 2010). It should be no surprise that the moral compass of counterfeiters and corporate executives is not dramatically different from that of students or teachers.

Teachers in the U.S. are often rewarded monetarily and through promotions for improving classroom performance. The common means of assessing improvement is through standardized tests. This creates an incentive to “teach to the test” and to correct wrong answers after the fact. Jacob and Levitt (2003)
developed a method for detecting retroactive cheating by teachers and administrators on standardized tests. One mechanism was a pattern of suspicious answer strings.

Certain methods for detecting and/or preventing student cheating rely on elaborate technology (Bedford, Gregg, and Clinton, 2011). While formulae that detect student cheating after the fact have been developed, they tend to lack general applicability. For example, one formula has been worked out that can prove cheating within fractions of one percent, but it involves comparing strings of identical answers from pairs of random students (Mogull, 2004).

The purpose of the test in the current study was to assess student comprehension of course material rather than to detect, or punish, cheating. The pervasiveness of cheating that occurred in the present study did not trigger a formal investigation or punishment of any student. There were two primary reasons that factored into the decision to forgo a formal investigation of cheating. The first reason was similar to the amount and severity of sanctions for option backdating. It was expected that the investigation of a large group of students accused of cheating would consume an inordinate amount of time and be unlikely to result in meaningful penalties. The second reason was that students who cheated received no competitive advantage or reward. In fact, students who copied answers from a different version of the exam would have fared better by guessing.

Students could determine whether they appeared to have cheated by calculating the probability of observing multiple correct responses to the alternate version of the exam. As a case study, the structure of the test renders it very informative on several levels, and the results create a catalyst for class discussion in the following areas:

- Pervasiveness of cheating in business and in academia
- Expected value of cheating
- Methodologies of cheating and detection
- Statistical size and power of hypothesis testing

*The measure of a man's real character is what he would do if he knew he would never be found out.* Thomas Babington Macaulay

The power of any test to detect cheating is difficult to estimate, since one cannot easily estimate the probability that the test will reject a false null hypothesis, i.e. the false negative rate. Estimating the probability that a test for cheating will not make a Type II error requires knowledge of how frequently cheaters are not detected.

Power is usually dependent on three factors: Sample size, magnitude of effect, and statistical significance. All else being equal, increasing the sample size is one of the easiest ways to increase the statistical power of a test, because sampling errors decrease as the sample size increases. The magnitude of effect in the current setting is difficult to measure. Cheating occurs through several strategies, and copying the answers of a peer or competitor is only one tactic. When a student apparently looks at another student’s exam, it is extremely difficult to determine whether cheating has occurred. In the extreme case, should a student briefly glance at another student’s answers, the magnitude of effect would be quite subtle and nearly impossible to penalize. One can easily increase the power of a test by using a larger significance criterion. Doing so would unfortunately mean that a greater proportion of innocent students would be falsely flagged as having cheated.

**TESTING STRUCTURE**

The test consisted of 31 multiple-choice and two short-answer questions. There were two versions of the exam, referred to as A and B, which differed from one another in subtle ways on 18 questions. Both versions were identical in all respects on the remaining questions. The set of 18 questions can be thought of as cheater-detection questions in addition to simultaneously testing comprehension of course material.
The two exam versions were collated into an alternating sequence within a commingled stack. A smaller stack of commingled exams was then distributed to each row of students. The first page of each version of the exam consisted of an identical sheet of formulas. Students were instructed to wait until all exams were distributed prior to turning the page and starting the test. Students were probably unaware that different versions of the exam were present, because they looked nearly identical. Those who thought there was only one version of the exam would also be unaware that the stacks of exams were collated into an alternating sequence of the two versions.

An example of the first cheater-detection question from the midterm exam is shown below:

**Version A Exam, Question 1:**

Assume your score without cheating would be fifty-eight percent. If you cheat and are not detected your score would increase to seventy-two percent; however, the probability of getting caught is thirty-eight percent. Individuals who are caught cheating receive a score of zero. Calculate the expected value of cheating.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>30.64%</td>
<td>f</td>
</tr>
<tr>
<td>b</td>
<td>23.44%</td>
<td>g</td>
</tr>
<tr>
<td>c</td>
<td>22.60%</td>
<td>h</td>
</tr>
<tr>
<td>d</td>
<td>20.56%</td>
<td>i</td>
</tr>
<tr>
<td>e</td>
<td>17.81%</td>
<td>j</td>
</tr>
<tr>
<td>k</td>
<td>-17.81%</td>
<td>l</td>
</tr>
<tr>
<td>m</td>
<td>-22.60%</td>
<td>n</td>
</tr>
<tr>
<td>o</td>
<td>-30.64%</td>
<td></td>
</tr>
</tbody>
</table>

**Version B Exam, Question 1:**

Assume your score without cheating would be fifty-eight percent. If you cheat and are not detected your score would increase to seventy-two percent; however, the probability of getting caught is forty-eight percent. Individuals who are caught cheating receive a score of zero. Calculate the expected value of cheating.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>30.64%</td>
<td>f</td>
</tr>
<tr>
<td>b</td>
<td>23.44%</td>
<td>g</td>
</tr>
<tr>
<td>c</td>
<td>22.60%</td>
<td>h</td>
</tr>
<tr>
<td>d</td>
<td>20.56%</td>
<td>i</td>
</tr>
<tr>
<td>e</td>
<td>17.81%</td>
<td>j</td>
</tr>
<tr>
<td>k</td>
<td>-17.81%</td>
<td>l</td>
</tr>
<tr>
<td>m</td>
<td>-22.60%</td>
<td>n</td>
</tr>
<tr>
<td>o</td>
<td>-30.64%</td>
<td></td>
</tr>
</tbody>
</table>

The question, with different inputs, and its solution method were presented in lecture in the weeks prior to the exam. The question, again with a different set of inputs, and its solution method were also presented in the review session prior to the exam. Students were told during lecture that this particular question was highly likely to appear on the midterm. Students were not told prior to taking the exam that this question could simultaneously be used as a tool to detect cheating.

The irony that a question tasking 178 students to calculate the expected value of cheating was also detecting cheating during the test itself was not warmly received in the days following the exam. Although the correct answers to the expected value of cheating were negative, many students must have believed that the expected value of their own cheating attempt on this question was positive.

In the weeks prior to the exam, lecture topics included the option backdating scandal, corruption, and rogue trading. The discussion included how business, society, and complex natural systems enforce penalties for misrepresentation and included a variety of views on the morality of theft. The pedagogical style emphasized conceptual understanding and did not require the memorization of formulas. The question shown above required using a formula from the exam cover sheet:
$E[\text{Value} | \text{cheat}] = p(\text{penalty}) + (1 - p)(\text{loot})$

Where $p$ is the probability of detection, $\text{penalty}$ is the punishment for cheating, and $\text{loot}$ is the increment that the test score would increase if cheating were not detected. The inputs for Version A are $p=38\%$, $\text{penalty}=58\%$, and $\text{loot}=14\%$, and for Version B, $p=48\%$, $\text{penalty}=58\%$, and $\text{loot}=14\%$. The correct response for Version A is -13.36\% (j.) and the correct response for Version B is -20.56\% (l.). Incorrect responses are not equally likely in a random setting, but empirically the most frequent incorrect response from Version A exams was -20.56\% (l.), and the most frequent incorrect response from Version B exams was -13.36\% (j.)

Each version of this question had the same set of 15 responses denoted “a.” through “o.” The probability of guessing the correct response needed to be the same for each version, which is equivalent to specifying that the probability of guessing the incorrect response is the same for each version of the question. The most likely incorrect ways of solving the problem were used to determine the incorrect responses. This is a good quality for most types of multiple-choice questions. Equal proportions of incorrect and correct responses were combined to form the common set of responses that were identical for each version of the question.

The probability of selecting the incorrect response, assuming no cheating and a purely random response strategy, would be 14 out 15. The probability of selecting the correct response to the alternate version of the exam, again assuming no cheating and a purely random response strategy, is 1 out of 14. The estimate of the proportion of the class that appeared to have cheated on the exam was defined by observing 3 or more responses on cheater-detection questions that were the correct response to the alternate version of the question. Assuming a random selection strategy, the probability of observing 3 or more incorrect responses that were also the correct answers to the alternate version of the exam would be less than $(1/14)^3$, or approximately 0.04\%. This assumes that each of the 18 cheater-detection questions had 14 incorrect responses.

Issues that were addressed in post-exam discussions included the following:
A) Should different exam versions be clearly demarcated?
B) The expected value of cheating is inversely related to mastery of course material, severity of the penalty, and probability cheating will be detected.
C) Cheating may have increased over the last few decades because sanctions for cheating have decreased, there exists a greater amount of activities that distract students from studying, and improved technologies may increase the loot more than it increases the probability of detecting cheating.

RESULTS

Results were evaluated based upon the number of incorrect responses that would have been considered correct had they been entered on the alternate version of the exam. Students who had three or more correct responses from the alternate version of the exam were classified as “Definitely Cheated” (i.e. 0.04\% probability of chance occurrence). Students who had two correct responses from the alternate version of the exam were classified as “Probably Cheated” (i.e. 0.50\% probability of chance occurrence) and students with one or fewer correct responses from the alternate version of the exam were classified as “Did Not Cheat.” In the tables below, the “Random Response Probability” is the percent of exams one would expect to observe in each of the three categories, assuming all students used a test-taking strategy of selecting responses randomly, as opposed to copying “correct” incorrect answers.
TABLE 1
PROBABILITY OF STUDENT CHEATING

<table>
<thead>
<tr>
<th>Random Response Probability</th>
<th>Did Not Cheat</th>
<th>Probably Cheated</th>
<th>Definitely Cheated</th>
<th>Class Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% to 93%</td>
<td>0.5%</td>
<td>0.04% or less</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exam Score</td>
<td>51.2</td>
<td>41.6</td>
<td>36.2</td>
<td>46.6</td>
</tr>
<tr>
<td>Student Count</td>
<td>118</td>
<td>14</td>
<td>45</td>
<td>177</td>
</tr>
<tr>
<td>Proportion of Class</td>
<td>66.7%</td>
<td>7.9%</td>
<td>25.4%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Males were more likely to have been categorized as “Definitely Cheated” than females. Gender assignment was based upon the first name of the student and could be subject to error in cases where the first name was ambiguous and the student did not attend class aside from the midterm, thus remaining unidentified. There was only one such case, which was eliminated from the study, resulting in a class total of 177.

TABLE 2
PROBABILITY OF STUDENT CHEATING BY GENDER

<table>
<thead>
<tr>
<th></th>
<th>Did Not Cheat</th>
<th>Probably Cheated</th>
<th>Definitely Cheated</th>
<th>Class Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Random Response Probability</td>
<td>100% to 93%</td>
<td>0.5%</td>
<td>0.04% or less</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>82</td>
<td>12</td>
<td>39</td>
<td>133</td>
</tr>
<tr>
<td>Female</td>
<td>36</td>
<td>2</td>
<td>6</td>
<td>44</td>
</tr>
<tr>
<td>Male Proportion</td>
<td>69.5%</td>
<td>85.7%</td>
<td>86.7%</td>
<td>75.1%</td>
</tr>
<tr>
<td>Female Proportion</td>
<td>30.5%</td>
<td>14.3%</td>
<td>13.3%</td>
<td>24.9%</td>
</tr>
</tbody>
</table>

A total of 59 students were classified as either “Probably Cheated” or “Definitely Cheated.” Approximately 76.3% of the 59 students were classified as “Definitely Cheated.” The following quote is helpful in interpreting this result:

To keep your character intact you cannot stoop to filthy acts. It makes it easier to stoop the next time. Katherine Hepburn
Theoretically this result is not surprising. A student who perceives the expected value of cheating to be beneficial on one question is likely to have a similar view on the remaining midterm questions. This belief relies on the assumption that the expected value of cheating increases as the expected exam score without cheating decreases. At the risk of being viewed as tautological, a major finding of this study is as follows: Students who do not study for the exam are more likely to cheat, students who cheat a little are likely to cheat a lot, and students who cheat a lot are more likely to be male.

An unusual characteristic of this multiple-choice exam was that the responses were often not limited to a., b., c., d., and e. The exam therefore did not lend itself to the use of bubble coding sheets, or a separate page dedicated to answers. While grading the exam manually and placing them into “Did Not Cheat,” “Probably Cheated,” and “Definitely Cheated” categories, there were frustrating cases of students erasing or crossing out the correct answer and replacing it with the correct answer to the alternate version of the exam.

Student reactions to this study were mixed and appeared in stages. The first stage was primarily negative and started with the revelation that the exam included cheater detection questions and ended prior to individual exams being returned to students. Students who did not cheat started applauding when it was revealed that cheating had been detected. The alternate group of students looked at me with eyes like daggers. Replicating this methodology to detect cheating is ill advised for instructors seeking to maximize student ratings of the quality of instruction, although ratings for the course in the present study were excellent.

Graded exams were not handed out in the classroom but were available when the student stopped by the office to pick up the exam. The graded exams were sorted into two stacks. The first stack commingled the “Did Not Cheat” and “Probably Cheated” categories; the second included the “Definitely Cheated” category. No comment was made to the student; nothing was “wrong.” At that point, each student knew only that the graded exam was in one stack or the other.

The second stage of student reactions began once they had picked up their exams and calculated the probability that their telltale responses indicated cheating had occurred. Several students requested that extra points be added to their exam scores because they had credible evidence that they had in fact snatched defeat from the jaws victory on multiple questions. It is frustrating to select a wrong answer after initially getting it correct, but the refusal to add extra points was justified by the manner in which they had selected the correct response to the alternate version of the exam. The second stage of reactions included disbelief about the math underlying the indication that cheating had occurred. The students demonstrating disbelief felt that probabilities were an opinion that resulted in a number that ranged from 0 to 1. This particular group of students generally performed poorly on quantitative questions.

The third stage of reactions began a month or two after the exams were returned to students. This stage allowed sufficient time for self-reflection and discussion outside of class. A moderation of anger was observed due in part to the passage of time and because they were assured that no formal accusations of cheating would be brought to bear on any student. The long-term effect of this exam was positive on a departmental level and among students. There were no formal complaints by students, and a consensus developed that favored an environment where cheating is less likely to occur.

Replicating the study would necessitate the following steps:
1) Create multiple-choice questions; determine the four most likely incorrect response techniques and the correct response strategy.
2) Assign Version A question inputs and assumptions and Version B question inputs and assumptions; then sort the ten responses. Create five additional incorrect answers such that the overall set of 15 responses appear reasonable.
3) Print an equal number of Version A and Version B exams and manually collate the two stacks of exams into one stack: an alternating sequence of Version A and Version B exams.
4) Distribute the exams in a normal fashion while actively looking for suspicious activities such as texting, using cheat sheets, whispering, and collusive copying.
5) Collect the completed exams and re-sort them into Version A and Version B stacks.
6) Note the number of incorrect responses on each exam that were the correct response to the other version of exam.
7) Sort the exams into three stacks, “Did Not Cheat” (1 or 0 correct responses to the other version of the question), “Probably Cheated” (2 correct responses to the other version of the question), and “Definitely Cheated” (3 or more correct responses to the other version of the question).
8) Combine “Did Not Cheat” and “Probably Cheated” categories from both exam versions in alphabetical order based on the student’s last name (one stack).
9) Combine the “Definitely Cheated” category from both exam versions in alphabetical order based on the student’s last name (one stack).
10) Distribute the graded exam on an individual basis and do not provide any indication that the two stacks differ. Let the students determine which stack indicated that cheating occurred after a self-review of their responses.

While this study focused on student cheating, it should be noted that instructors often face the same temptation with potentially much greater penalties if they are detected. For example, an investigation is currently underway in Georgia that involves 44 schools and at least 178 teachers and principals (Severson, 2011). The case called into doubt the validity of the improvement in student learning outcomes, forced dismissals, and led to the resignation of the school superintendent.

SUMMARY

Cheating is often systemic in a university setting, but it is not typically assessed in multiple-choice exams due to a lack of awareness of detection methodologies and the awkwardness of having to deal with the results. The ironic feature of this study is that one of the cheater-detection questions required students to calculate the expected value of cheating.

It is important to note that individuals in this study were not accused of cheating either privately or among their peers, nor was there a threat of academic penalty. The value of this study lies primarily in its ability to assess the prevalence of cheating and incorporating concepts related to statistical size and power in post-exam learning outcomes.

REFERENCES


I would like to thank Kevin C. Chiang, the Finance 202 class at Otago University, and faculty from the School of Commerce, Department of Finance and Quantitative Analysis for their contribution, effort, and invaluable feedback. Craig H. Wisen is an Associate Professor of Finance at the University of Alaska Fairbanks, School of Management, 303 Tanana Dr. Fairbanks, Alaska 99775, chwisen@alaska.edu, 907-474-5531 (voice), 907-474-5219 (fax). Please do not quote without permission.
Curriculum Integration: Does the Degree of Operating Leverage Defy Optimal Input Combinations?

Samuel E. Enajero
The University of Michigan-Dearborn

Fixed and variable inputs are analyzed in economic theories as well as management accounting. In economic courses, optimal input combinations require that the ratios of marginal product to input price be equal for all inputs. The degree of operating leverage (DOL) is a measure of the extent to which a business firm substitutes fixed inputs for variable inputs to boost the contribution margin. It is shown that the practice where a firm invests more in fixed inputs with no regards to relative input prices is a violation of optimal input combinations. This is obvious if input substitution topics in economics and business are integrated.

INTRODUCTION

Accounting as a subject is comprised of two parts: financial and management accounting. Financial accounting collects information from management or cost accounting to prepare financial reports. The data used by accountants to prepare financial reports is economic information. Yet, there is a general consensus that economics as a subject is a distinct and independent area from accounting.

Accounting information is used by management for planning and efficient investment decisions. While economics pursue efficiency in cost analysis, accounting is concerned with accuracy in reporting. Efficiency is a function of accuracy, thus the former and the latter should be integrated in a business course. As a potential manager the MBA student, for example, must conceptually connect the efficient production level as taught in economics to fixed input investment decisions as discussed in an accounting or a finance course.

One area of alienation of the business student from economics is whether the use of operating leverage in accounting and finance courses undermines the efficient inputs combinations as discussed in economics. Perhaps, business graduates would make better investment decisions if they are able to connect and integrate economic theories with relevant topics in business.

The American Assembly of Collegiate Schools of Business (AACSB, 2002) urged business schools to embark on a more integrative curriculum that places emphasis on interdisciplinary learning among students. Many colleges have responded by experimenting with different forms of curriculum integration. Davis, (1995) defines integration as “the degree to which the disciplines are woven together from two (or more) separate disciplines, or sub-disciplines, into a single larger discipline,” (Ducoffe, Tromley and Tucker, 2006).

Production costs in economics and accounting stem from the same theoretical source, yet it is incomprehensible for many students to make the connections. Thus, economics courses are very unpopular among business students (Gregorowicz and Hegji 1998). The disconnection in conceptualiz-
ation has resulted in many business students learning economics only in passing, and economic concepts become impracticable when faced with real business problems that need deeper understanding of economics.

Part 2 of this paper illustrates the usual optimal input combinations as discussed in economics courses, and part 3 presents the degree of operating leverage (DOL) as explained in business courses including managerial economics (Hirschey, 2008; McGuigan, Moyer & Harris, 2008). Part 4 integrates and shows how the practice of DOL violates optimal input combinations. Part 5 concludes with some implications.

ECONOMIC ANALYSIS

The basic production model in economics assumes the manager chooses technologically efficient combinations of fixed and variable input $K$ and $L$. This level is where the marginal rate of technical substitution (MRTS) equals the ratio of the input prices, $w/r$, where $r$ and $w$ are prices of fixed input, capital ($K$) and variable input, labor ($L$), respectively. Total costs (TC) equals $rK + wL$ and output ($Q$) is a function of $K$ and $L$, $[Q(K, L)]$.

$$MRTS = -dK/dL = w/r = MPL/MPK.$$  \hspace{1cm} (1)

With cross multiplication, the two right terms in equation (1) becomes

$$MP_L/w = MP_K/r.$$ \hspace{1cm} (2)

Equation (2) states that input combinations between fixed and variable inputs by the business firm are optimal when an additional dollar spent in any input generates equal increase in output. This efficient level is graphically illustrated as where the slope of the isoquant is tangent to the slope of the isocost. This is shown in figure 1 below.

FIGURE 1
ISOQUANT AND ISOCOST

![Graph showing isoquant and isocost relationships](figure1.png)
THE DEGREE OF OPERATING LEVERAGE (DOL)

Operating leverage is the relative combination of fixed and variable costs and the use of fixed assets (costs) to generate net income. In an operation where fixed costs (fixed assets) can be substituted for variable costs (labor and material), a firm can boost its contribution margin by investing more in fixed assets while reducing variable expenses. In this case, the firm uses fixed cost as a lever to increase its contribution margin. As the firm invests in fixed assets, it also acquires more risks. The degree of operating leverage (DOL) is a measure of this risk as shown in equation (4) below. Table 1 illustrates CVP income statement for different volumes.

**TABLE 1**  
CVP INCOME STATEMENT

<table>
<thead>
<tr>
<th></th>
<th>A-1000 sold</th>
<th>B-Per unit</th>
<th>C-1100 sold</th>
<th>D-1100 sold</th>
<th>E-900 sold</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sales</strong></td>
<td>$600,000</td>
<td>$600</td>
<td>$660,000</td>
<td>$660,000</td>
<td>$540,000</td>
</tr>
<tr>
<td><strong>VC</strong></td>
<td>(400,000)</td>
<td>(400)</td>
<td>(440,000)</td>
<td>(385,000)*</td>
<td>(315,000)</td>
</tr>
<tr>
<td><strong>CM</strong></td>
<td>200,000</td>
<td>200</td>
<td>220,000</td>
<td>275,000</td>
<td>225,000</td>
</tr>
<tr>
<td><strong>FC</strong></td>
<td>(200,000)</td>
<td>(200)</td>
<td>(200,000)</td>
<td>(235,000)</td>
<td>(235,000)</td>
</tr>
<tr>
<td><strong>Net Income</strong></td>
<td>0</td>
<td>0</td>
<td>20,000</td>
<td>40,000</td>
<td>(10,000)</td>
</tr>
<tr>
<td><strong>CM ratio</strong></td>
<td>33.33%</td>
<td>33.33%</td>
<td>42%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*FC are substituted for some VC; VC now $350 per unit

DOL = 6.875%

The degree of operating leverage is the sensitivity of profits to changes in output. It is an elasticity concept, which is, dividing a percentage change in sales into a percentage change in profit (McGuigan, Moyer & Harris, 2008). Given that Q equals quantity sold, P equals price of the good, AVC equals unit variable cost, TFC is total fixed costs, and profit equals \[ \pi = Q(P - AVC) - TFC, \]

\[ \text{DOL} = \frac{d\pi/\pi}{dQ/Q} = \frac{dQ(P - AVC)}{(Q(P - AVC) - TFC)}/dQ/Q. \]  

(3)

Rearranging equation (3), DOL becomes:

\[ \frac{Q(P - AVC)}{(Q(P - AVC) - TFC)}. \]  

(4)

The higher the TFC items in column A, Table 2, the greater the DOL for the firm. Thus, if TFC denotes only costs associated with properties, plants and equipment, excluding a host of other items that meet the definitions of fixed costs, the risks facing the firm are understated.

A higher level of operating leverage magnifies profits in times of high sales and magnifies losses during recession. For example, in Table 1, with 6.875 DOL, a drop in sales by 200 units reduces profit from a positive $40,000 to a loss of $10,000 (columns D and E, respectively). Higher levels of fixed inputs, therefore, could be linked to higher levels of risk.

**DOL VERSUS OPTIMAL INPUT COMBINATIONS**

Economic costs are defined by their behaviors with respect to changes in volume. Costs that remain fixed as output varies in the short run are called fixed costs, and costs that vary with output are called variable costs. In the long run, the firm can expand its fixed input through capital acquisitions. Thus, all costs are variable in the long run.
TABLE 2
ECONOMICS AND ACCOUNTING INPUTS

<table>
<thead>
<tr>
<th>Economics Classification</th>
<th>Accounting</th>
<th>Assignment</th>
<th>Accounting</th>
<th>Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Machine (dep)*</td>
<td>Indirect</td>
<td>1. Material</td>
<td>Direct</td>
<td></td>
</tr>
<tr>
<td>2. Buildings (dep)</td>
<td>Indirect</td>
<td>2. Labor</td>
<td>Direct</td>
<td></td>
</tr>
<tr>
<td>3. Cost of capital</td>
<td>Indirect</td>
<td>3. Utilities</td>
<td>Indirect**</td>
<td></td>
</tr>
<tr>
<td>5. Plant Maintenance*</td>
<td>Indirect</td>
<td>5. Sales Commission</td>
<td>Indirect</td>
<td></td>
</tr>
<tr>
<td>6. Insurance</td>
<td>Indirect</td>
<td>6. Delivery Charges</td>
<td>Indirect</td>
<td></td>
</tr>
<tr>
<td>7. Property Taxes</td>
<td>Indirect</td>
<td>7. Labor Fringe\</td>
<td>Indirect**</td>
<td></td>
</tr>
<tr>
<td>8. Advertising</td>
<td>Indirect</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Management Salaries</td>
<td>Indirect</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

^Plant supervisor’s pay could be indirect if (s)he supervises more than one plant.
*Fixed manufacturing overhead. **Variable manufacturing overhead.

Accounting courses and practice have the same cost arrangements as economic theories. However, management accounting further breaks fixed and variable inputs into direct and indirect inputs as shown in table 2.

In the application of operating leverage, a very popular practice in modern business models, the firm substitutes fixed inputs (some items in column A) for some variable inputs (items in column B) to enhance its contribution margin. Does the firm ignore optimal input combinations in the production process as described in equation (2)? The optimal input combinations as derived in economics take into consideration the input price ratio. However, from equation (4), DOL is a function of the quantity (Q), product price (P), TFC and AVC.

We can use data in table 1 to make an illustration. From column A, total variable cost is $400,000 comprising of $200,000 materials and $200,000 for labor. Assuming that this firm uses a quarterly labor hours of 5,000 and the hourly cost of labor including fringes is $40. This firm also applies 4,000 machine hours at a cost of $50.00 per hour.

Assuming also that the marginal product of labor and marginal product of capital are equal to their respective average products, we can use the information in column A, table 1 to generate marginal product per dollar spent (table 3 below). This assumption is not over-simplistic knowing that the business firm produces at the relevant range where the production function is linear.

TABLE 3
OPTIMAL INPUT COMBINATIONS AND DOL

<table>
<thead>
<tr>
<th>Table 1 Column</th>
<th>Input</th>
<th>Output</th>
<th>Hours</th>
<th>( MP_L/M_P_K )</th>
<th>( w ) or ( r )</th>
<th>( MP_L/w ) or ( MP_K/r )</th>
<th>Optimal</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Variable</td>
<td>1,000</td>
<td>5,000</td>
<td>0.2</td>
<td>$40</td>
<td>0.005</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Fixed</td>
<td>1,000</td>
<td>4,000</td>
<td>0.25</td>
<td>$50</td>
<td>0.005</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Variable</td>
<td>1,100</td>
<td>4,625</td>
<td>0.238</td>
<td>$40</td>
<td>0.006</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fixed</td>
<td>1,100</td>
<td>4,700</td>
<td>0.234</td>
<td>$50</td>
<td>0.0047</td>
<td>No</td>
</tr>
</tbody>
</table>

Note that in table 1 column D, $385,000 total variable cost equals (4,625 labor hours x $40) + $200,000 for material and $235,000 total fixed cost equals 4,700 hours x $50.
Although, the firm builds the capability to boost profit to $40,000 (column D in table 1) by substituting fixed input for variable input, the optimal input combination is violated. This has dire consequences in times of volatile economic conditions. For instance, the firm loses $10,000 when 900 units are sold (column E, table 1). Operating leverage applied by the firm has created inflexibility in input substitution in times of economic fluctuations. While variable inputs can be reduced to match declining sales, fixed inputs do not have such flexibility.

Optimal input substitution violation by the operating leverage practices can be graphically illustrated by the divergence of potential operating leverage expansion path from optimal input combination expansion path as illustrated in figure 2.

**FIGURE 2**

**OPTIMAL VERSUS DOL EXPANSION PATHS**

Isocost GH in figure 2 is the initial budget for the firm producing 1,000 outputs using $600,000 total costs ($400,000 variable plus $200,000 fixed costs). At point ‘a’, the firm makes zero net income as shown in table 1, column A. If the firm applies optimal input combinations in capital expansion, the firm produces 2,000 outputs at point ‘c’ on isocost KL, where equation (2) holds. Isocosts GH and KL have the same slope and $\frac{MP_L}{w} = \frac{MP_K}{r}$, which is 0.005 as shown in table 3.

With the application of operating leverage in the production of 100 additional outputs as indicated in column D, tables 1 and 3, the firm substitutes more hours of fixed inputs for variable inputs incurring $620,000 total costs ($385,000 variable plus $235,000 fixed costs). The firm boosts contribution margin and makes a net income of $40,000 at point ‘b’ on isocost IJ. At this point, $\frac{MP_L}{w}$ equals 0.006 and $\frac{MP_K}{r}$ equals 0.0047 (see table 3). As the firm continues with the same trend in the substitutions of fixed inputs for variable inputs, and input prices $w$ and $r$ remain the same, the DOL expansion path is diverging from the optimal input combinations expansion path (point d, figure 2).
One could argue that in practice there are too many inputs in the production process such that the calculation of marginal or average products would be too cumbersome to undertake for each input. This problem could be resolved, however, by taking the composite average products of inputs as classified in table 2. Besides, available modern software technology could also make this process practicable.

Another possible argument is that the firm is naturally a risk taker and need not observe efficient input combinations. In this case, the optimal fixed and variable input combinations for different industries could be studied and prepared by researchers as a benchmark to measure risky firms that deviate far from efficient input combinations. This is important because firms that engage in the practice of DOL are more prone to problems in fluctuating economic times.

The popularity of DOL and other business practices that violate optimality as derived using economic theory could be due to the absence of deeper contents of economics in business curriculum. The classroom presentations in silos (Berry, 2009) of the degree of operating leverage (DOL) and economic input combinations in business schools, for instance, leaves this and other concepts beyond imaginations in practice. The integrations of the economic input substitution theories with the practice of DOL as taught in business courses would reveal that the latter is a violation of the former.

CONCLUSION

Fixed and variable inputs describe the same information in economics as well as management accounting. Economic theory provides the optimal level of fixed and variable inputs combinations. In practice, firms invest in fixed inputs in the production process with little attention to the efficient input combinations benchmark. The degree of operating leverage (DOL) is the extent a firm applies fixed inputs as a substitute for variable input to boost contribution margin. It is shown that the practice of operating leverage is a violation of optimal inputs combinations as theorized in economics. Over investment in fixed inputs that defy optimal input combinations cumulates to social costs, owing to huge losses in times of economic downturn.

Economic production theory is concerned with efficiency. Since management accounting is a form of application of economic theories, perhaps, integrating business topics with economics in classroom pedagogy is necessary in order for business curricula to take advantage of optimality as illustrated in economics.

NOTES

1. Labor fringe includes social security, life insurance, health insurance, pension, training, vacation, sick leave, overtime and idle time. Some companies classify these as indirect costs and others as direct. Many of these items are expressed as a percentage of labor hours; therefore, they fit into variable costs.

REFERENCES


Many beginning teachers struggle in teaching, consequently, tertiary education has been criticised for not preparing preservice teachers well enough. This qualitative study uses interviews and questionnaires to investigate 10 first-year teachers’ understandings of how universities can support them more effectively. The findings indicated that university preparation needed more literacy (particularly reading and spelling), numeracy, catering for lower socio-economic students, understanding behaviour differentiation, and communicating with parents. A two-prong approach may support beginning teachers: (1) timely induction and mentoring within school settings, and (2) research for advancing teacher education coursework to ensure currency of addressing beginning teachers’ needs.

LITERATURE REVIEW

Attrition from the teaching profession is costing governments significantly. For instance, Howe (2006) writes of “exemplary teacher induction programs found in the US”, yet attrition rates continue to cost the US $2.1 billion dollars per year (Darling-Hammond, 2010). Howe also states that overall induction programs “often fall way short of providing beginning teachers with the support they require” (p. 292), and in Australian, induction also falls short of ensuring adequate support in these early years of teaching (Hudson, Beutel, & Hudson, 2009). Despite review recommendations for assisting beginning teachers (e.g., House of Representatives Standing Committee on Educational and Vocational Training [HRSCEVT], 2007), there is an inference that education systems are failing to provide the support beginning teachers require to arrest attrition. There are state programs available in Australia, however, research (e.g., Keogh, Garvis, & Pendergast, 2010) shows that these programs may not be as successful as intended, particularly as they do not cover adequately some of the key components for ensuring beginning teachers remain in the profession (e.g., mentoring effective teaching, including behaviour management, assessment and so forth).

Studies (Goddard & Goddard, 2006; Hudson et al., 2009; O’Brien & Goddard, 2006) show that many beginning teachers struggle in their first few years of teaching and, according to Darling-Hammond (2010) and others, many leave the profession because of low salary, unsatisfying working conditions (particularly lower socio-economic schools), lack of professional support (e.g., mentoring and induction), and inadequate teacher preparation (including managing student behaviour). It appears that after four years of a teacher preparation program such as an undergraduate Bachelor of Education, there could be far more than 20% of beginning teachers in Australia unable to take their university learning and apply it to practice (e.g., see Committee for the Review of Teaching and Teacher Education, 2003). This presents multiple questions around university preparation for teaching, the partnership arrangements with schools,
graduate propensities and dispositions, and demands within 21st Century schools. This current study aims to investigate beginning teachers’ perceptions of their tertiary preparation for their first year of teaching.

Beginning teachers report a significant disconnect between university coursework and the real world of teaching with a “perceived lack of relevance of some of the theoretical components of courses” (HRSCEVT, 2007, p. 8). As there are connections between university coursework and what beginning teachers perceive during their first year of teaching, it is crucial to examine their challenges and needs in their first year in order to backward map the effectiveness of university coursework. Indeed, there are similarities between studies in various countries around the world (e.g., Ireland: Abbott, Moran, & Clarke, 2009; Portugal: Flores & Ferreira, 2009; Singapore: Choy, Chong, Wong, & Wong, 2011) indicating a commonality of beginning teachers wanting further support once in teaching positions. Findings from an Italian study on beginning teachers (Bezzina, 2006) identified their challenges as “coping with mixed-ability groups, class discipline, curriculum implementation and physical exhaustion” (p. 426), which is not unlike findings elsewhere. Classroom management, including managing student behaviour, is identified as a distinct area of need for beginning teachers (e.g., Malderez, Hobson, Tracey, & Kerr, 2007), and Bezzina’s study showed that beginning teachers wanted more resources and the support from an experienced mentor, which also infers that university coursework needs to consider how preservice teachers learn about resources and mentors. Others studies have shown that predicting “burn out” for beginning teachers can be the lack of appreciation from staff, students and parents (Gavish & Friedman, 2010). Marable and Raimondi (2007) highlight overwhelming responsibilities, management issues and dealing with parents as some of the key issues for beginning teachers grasp. As the inability to cope with stress is a reason for attrition (Rieg, Paquette, & Chen, 2007), some authors (e.g., Castro, Kelly, & Shih, 2010; Le Maistre & Paré, 2010) suggest instilling resilient skills, while others (Barrera, Braley, & Slate, 2010) signal the need to improve working conditions and provide timely support within the school.

Connecting theory to practice is an ongoing concern of reviews and research. For example, an American study (Beck, Kosnik, & Rowsell, 2007) outlines 22 first-year beginning teachers’ responses about their university preparation for which they highlighted “program planning, initial set-up, assessment and evaluation, effective group work” (p. 70) as key concerns. These researchers presented gaps in their findings where they expected evidence from the beginning teachers on “building class community, addressing equity issues, and exploring ‘multiliteracies’”, including guided reading (p. 71), as these were key aspects of their university coursework. Although internships and practicum create theory-practice connections (Cunningham & Sherman, 2008), researchers (Beck et al., 2007) advocate university coursework connects theory with practice (praxis, e.g., Freire, 1972), however, many teaching and learning approaches at universities appear to be “explained mainly in abstract terms” (Beck et al., p. 71). This seems to have translated into an education where coursework may not be perceived to relate directly to teaching, as identified in reviews, for instance the need to develop “the capacity of beginning teachers to deal adequately with classroom management issues, to perform assessment and reporting tasks and to communicate with parents” (HRSCEVT, 2007, p. 8). Although Sharplin, O’Neill, and Chapman (2011) have a pertinent catchcry of “intervention for retention” (p. 136) that focuses on timely mentoring and induction at points of crisis for beginning teachers, there is another prong for arresting the attrition rates that requires timely and ongoing research, namely, feeding the knowledge from beginning teachers’ issues back into university coursework.

Research (see Wang, Odell, & Schwille, 2008) shows that university coursework can develop preservice teachers’ skills to teaching in the first year, particularly with subject-specific pedagogy aligned with presiding state and national curriculum documents, however, research “is insufficient in determining what preservice preparation is useful for learning to teach in various induction contexts” (p. 147). Although there are calls for research on the school support provided to beginning teachers to “build, implement, and continue effective induction” (Algozzine, Gretes, Queen, & Cowan-Hathcock, 2007, p. 142), there is insufficient research on what beginning teachers need from their universities to ensure they have knowledge and skills for teaching to address their first-year of teaching issues. Hence the research question for this study was: How can universities support beginning teachers?
METHODS

There were 26 final-year preservice teachers at this small university campus located in a lower socio-economic community from which 22 completed a demographic survey indicating: there were 23% final years with children of their own, 55% were the first in their family to attend university, 55% had part-time work to finance their studies (14% relied on family, 18% scholarship), and their main reasons for attending this campus included proximity to home (77%), small size (18%) and the university coursework (9%). Nineteen of the 26 were employed after graduating from this campus, and 10 beginning teachers out of the 19 were selected purposefully for proximity and availability, and were emailed information about the research inviting them to participate in the study. This qualitative study investigates how these 10 beginning teachers (2 males, 8 females) were supported in their schools within their first three months of teaching. Two participants (one of each gender) in the study were over 30 years of age while the others were between 20 and 29 years of age. Their classes varied with eight participants teaching single classes between Year 1-7 in the primary school, one teaching multiple grades in the lower primary (i.e., a Year 2/3 composite class) and Participant 10 was a language teacher to various classes in the upper primary. Six of these early-career teachers taught in schools located on the outskirts of the city and four taught in schools within the Brisbane metropolitan area.

Data collection methods included an extended written response questionnaire, interviews and focus group discussions. The questionnaire required written responses about: becoming a teacher, university coursework, and career choice. After university ethics approval, and departmental and principals’ approvals, all invitees provided consent and were released from teaching to engage in the research at the university campus for a two and a half-hour period. The first half an hour was assigned to completing the aforementioned written response questionnaire, and the final time was dedicated to the interviews and focus group discussions. Audio recorders were used by participants to interview each other with semi-structured interview guidelines. These guidelines provided initial questions but also allowed for further questioning and probing. The author and two other academics with research capabilities assisted in facilitating the interview environment. For example, while pairs of participants were randomly matched (and swapped three times within the timeframe), the researcher and academic assistants monitored the interviews, and asked further probing questions when appropriate. Audio-recorded focus group discussions occurred at three points during the afternoon. All data were transcribed by a research assistant with a PhD. Data were analysed for common themes (Hittleman & Simon, 2006) and conclusions were drawn from the triangulation of information occurring between the questionnaire and interview data.

FINDINGS

To gain a sense of the beginning teachers’ motivations for teaching, they were asked why they wanted to become teachers. All of them indicated in various ways that they enjoyed teaching children and wanted to inspire them, case in point: “Because I enjoyed working with children and during my time as a student in schools I had many inspirational teachers who impacted upon my life as it is today” (Participant 4). Two outlined clearly they wanted to make a difference (Participants 2 & 10), two suggested they wanted to be positive role models for students (Participants 6 & 9), and one claimed she was “always told I was a born teacher” (Participant 7). Participant 10 encapsulated the responses by writing: “I wanted to show kids how powerful they are and give them the tools to achieve. I know that I have the personality and enthusiasm to make the difference for every student, every day. I love working with kids”. These comments presented altruistic motives with a view that they can make a difference to students’ lives.

Reflecting back to their university preparation, the participants were asked to list preservice teacher education units or content that helped them to become beginning teachers. All mentioned at least three or more university units that assisted them in their preparation, including literacy, numeracy, psychology and practical teaching ideas. Not surprisingly, seven participants placed as their first preference “behaviour management” was an area where university units assisted (Table 1). Participant 9 (male) claimed that the “university prepared us pretty well for classroom management” but also said, “it’s a fluid kind of thing...
one thing isn’t going to work in all cases but I feel that we got a good range of ideas and skills and techniques that we could use”. This fluidity in practice indicated the varied contextual circumstances in which beginning teachers are placed.

**TABLE 1**

BEGINNING TEACHERS’ REFLECTIONS ON THEIR UNIVERSITY PREPARATION

<table>
<thead>
<tr>
<th>Participant No./ Gender</th>
<th>University units that assisted</th>
<th>University units required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Female</td>
<td>Literacy, psychology unit, Indigenous.</td>
<td>Literacy program, more debriefing sessions</td>
</tr>
<tr>
<td>2 Female</td>
<td>Field experiences, lessons and resources, behaviour management.</td>
<td>First day in first week, spelling and phonics</td>
</tr>
<tr>
<td>3 Male</td>
<td>Behaviour management, reading programs, differentiation and engagement.</td>
<td>Parent interaction/meetings, behaviour differentiation, first week of a classroom</td>
</tr>
<tr>
<td>4 Female</td>
<td>Behaviour management strategies, literacy units, all MDB* units.</td>
<td>First few weeks of the year, students from difficult backgrounds, More on teaching literacy and numeracy</td>
</tr>
<tr>
<td>5 Female</td>
<td>All of the MDB units, the art unit.</td>
<td>First few weeks of term one, more literacy/numeracy, teaching in SES areas, internship period for six months</td>
</tr>
<tr>
<td>6 Female</td>
<td>Behaviour management course, practicum, art portfolio.</td>
<td>Teaching lower grades, teaching writing/reading</td>
</tr>
<tr>
<td>7 Female</td>
<td>Behaviour management, literacy units, science and maths units, all of my prac units, TEDD**.</td>
<td>Organising reading groups, direct teaching of reading, dealing with parents</td>
</tr>
<tr>
<td>8 Female</td>
<td>Behaviour management, lesson units.</td>
<td>Setup of first week in the classroom</td>
</tr>
<tr>
<td>9 Male</td>
<td>Behaviour management, psychology, MDBs, Indigenous studies.</td>
<td>First day/week of school, how to work in a low SES area</td>
</tr>
<tr>
<td>10 Female</td>
<td>Behaviour management, stuff about different learning styles, hands-on practical teaching ideas and games.</td>
<td>More optional LOTE units</td>
</tr>
</tbody>
</table>

* MDB units include: teaching two primary science, primary mathematics, primary ICT, primary robotics, science and mathematics integrated coursework.

** TEDD is an acronym for Teacher Education Done Differently, and included school-based experiences as lead up days to practicum or for specific teaching areas (e.g., art, gifted and talented, reading squadron).

The participants were asked to suggest university units that would prepare them better for teaching in the first year of school, which included literacy, numeracy, differentiation of student learning, and understanding the first few weeks of teaching (Table 1). For instance, Participant 1 wrote, “A better literacy program – I feel really unprepared when it comes to teaching reading, would love more of these get-together session – great way to share ideas”. Debriefing sessions were also mentioned as these provided opportunities to unpack experiential learning and to reflect on what may constitute effective teaching practice. Two participants at this three-month period into their first year claimed that dealing with some parents presented a difficulty: “I’ve spoken to a few of my parents and I find it’s very confronting”. Spontaneous interactions with confronting parents becomes a challenge for beginning teachers for which Participant 7 stated, “I think that’s one thing we’re not prepared for at university, you are not prepared for that parent to come in and question you over your pedagogy because you’ve got to think on your feet”. Role play through real school scenarios at the university was noted as one possible way to negate these potential challenges.
They were asked how effective they perceived themselves as teachers for which all were very tentative in their responses. For instance, “I guess I am somewhat effective, I’m teaching and my kids are learning and doing work, obviously I’m not so effective in some areas” (Participant 5) and “Not sure as I don’t have anything to measure against (experience) but I would think it is fair, I can tell because I can see gradual improvement through observations and assessment” (Participant 6). Despite tentative responses on outlining their effectiveness as teachers, anecdotal self-assessment appears insufficient and several of these beginning teachers relied on more objective evidence about their teaching, for example: “My kids are learning, they want to be there so I can’t be bad; parents and other teachers and administrators are giving me positive feedback” (Participant 7). A few participants determined their effectiveness in terms of student achievement: “Fairly effective, I can see through my students’ work that they have learnt new concepts, have been able to get reluctant students to engage in lessons, students following routines” (Participant 4) and “students are showing progress in the concepts we are studying” (Participant 2). Observation of student learning was also noted when the beginning teacher can ascertain student knowledge transference to other contexts: “I think I’m okay, I can see my students progressing... but I can always do better, students are transferring knowledge from one topic to another which makes me understand that they have knowledge of the topic” (Participant 8). There was considerable recognition of the need to improve in various areas of teaching but this was also couched in terms of having more experience. Nevertheless, confidence in one’s abilities to enact a teaching task towards mastery experiences (Bandura, 1987) was stressed: “I have confidence in my abilities though and I think this is the most essential quality” (Participant 1) but beginning teachers need to meet expectations and determine a work balance:

For a first-year teacher I believe I am pulling above the expectations but always feel that there is more that I can do, is the kind of job where you can give and give and give but you have to reach a reasonable balance. (Participant 3)

It seemed these beginning teachers need more objective viewpoints on their practices to develop confidence about their effectiveness: “Sort of effective, my relationship development is working well and students want to be in my class, learning is progressing” (Participant 9). The responses indicated tentative confidence in their abilities, while affirmations by school executives, mentors, and other staff of their development tended to aid self efficacy. Indeed, they had stated specific strategies that made them feel successful with teaching such as: “Literacy and numeracy coach, placing me next to an experienced and supportive teacher” (Participant 2), “support for ICT use” (Participant 4), and “no tolerance of bad behaviour” (Participant 10).

As an indication of teaching retention levels, they were asked what they thought about their career at this three-month stage. Four participants (1, 2, 7, 8) specifically stated “love it”, two said it was worth the effort and rewarding (3 & 4), and two claimed they were happy to be teachers as “it’s a great career” (9 & 10). There were reasons and caveats around these positive comments. Reasons included the school support and the teaching environment, for example, Participant 1 stated that “I think my school has a lot to do with my happiness”. There was also a sense of full commitment to the profession at this early stage in their careers: “happy to be a teacher – never see myself doing something else” (Participant 9), “it’s hard work but worth every moment, I can see myself being here for a very long time” (Participant 7), and “enjoy working with students so much and helping them progress emotionally and academically, is a great career, as demanding and overwhelming as it is” (Participant 10). Although Participant 10 placed a caveat about the demands of teaching, there were other caveats in their written comments as well: “so much extra work outside the classroom (extra paperwork – IEPs, constant interruptions)” (Participant 2, parenthesis included), “rewarding, exhausting, challenging, worth the effort” (Participant 3), and “lot of work (we were warned) has its difficult moments, has its rewarding moments too, a massive learning curve” (Participant 4, parenthesis included). These responses highlighted the demanding, challenging and emotional work of teachers but at the same time recognised the intrinsic value of teaching as a career.
There were two participants who did not provide positive comments. These comments were based on the practicalities of the profession for which they may have felt unprepared: “It’s full on (but knew it would be) - time-consuming, there is so much to learn that four years at uni can’t teach you everything but does prepare you somewhat” (Participant 5, parenthesis included) and “Super busy, not sure if it’s for me at this stage of my life as I can’t 100% commit, do I want to have a life totally (pretty much) committed to work? will it get easier?” (Participant 6). Analyising these last two comments, which would constitute 20% of this cohort, appeared in keeping with previous studies linked to beginning teacher attrition rates (Goddard & Goddard, 2006). These comments signify the extensive workload, which also brings forward the need to create a work-life balance before burn out occurs.

These beginning teachers provided advice they would give to other university students undertaking a teaching degree. Their comments were overwhelmingly based around survival around the contextual learning and teaching workload, while trying to impart advice about the real-world of teaching. Two participants explained reasons why university students should not enter teaching, underlying the key reason for entering the career in the first place, “Don’t do it for the money or the holidays because you will be sorely disappointed, do it for the love of challenge and the joy of working with children” (Participant 3) and “Don’t do it unless you are willing to give it everything and unless you are passionate about kids” (Participant 10). Their advice extended to the practicalities of being organised (Participant 5), collecting as many resources as possible (Participants 1, 2), and networking with teachers when in schools (Participants 1, 4, 8). Participant 6, who had not provided a positive comment about teaching as a career now, summarised how to develop realism about teaching as a career, to illustrate:

Spend one week with a teacher at have a better understanding of a typical day – from start to finish e.g. 7 a.m. to 6 p.m., have a beer ready in the fridge, they tell you teaching is hard but I don’t think you realise until you do it, do teacher aid work to get an idea about what teaching is.

Advice on the reality of a beginning teacher can be summed up by the following three comments: “Hang in there because once you get your own classroom it’s so worth it” (Participant 1), “I’m sure that will probably get easier as you, you know, kind of develop a bank of resources and ideas and ways that you work” (Participant 9) but “never think it will be easy” (Participant 7).

The beginning teachers were asked about their plans over the next five years for which four participants’ (1, 7, 9, and 10) comments were about improving teaching practices. Two focused on survival, that is, “get experience, survival, build resources” (Participant 6) and “don’t give up, build up a range of resources, keep working in the upper middle years if possible” (Participant 2), while three claimed they will seek teaching experiences in other fields such as special education (Participant 4), overseas and high school (Participant 3), and teaching in lower grades (Participant 8). Participant 5 was uncertain due to contractual arrangements, “not sure, it’s not set in stone which is the problem, silly contracts”. Nevertheless, most were determined to achieve in their new found positions, even Participant 10 who claimed she was not supported directly in the school wrote: “I love my job, challenges can be overcome”. Outlining that challenges can be overcome leads to a positive frame of mind, part of which can instill resilience skills for teaching.

DISCUSSION AND CONCLUSION

This study supports the findings of Beck et al. (2007) that beginning teachers wanted further understandings about setting up a classroom in the first few weeks of school and assessment procedures at key times through the year. In addition, the findings indicated that university preparation needed more literacy (particularly reading and spelling), numeracy, and catering for lower socio-economic students, along with understanding behaviour differentiation and communicating with parents (Table 1; see also Fantilli & McDougall, 2009). In comparing beginning teachers’ views about their tertiary education, reports from beginning teachers show that they value practice more than theory, which was indicative of
the types of university topics selected that assisted them in their first year of teaching (Table 1; see also Allen, 2009; Cochran-Smith, 2005). Even though Allen’s (2009) findings showed that beginning teachers reverted to traditional school practices and “conform to the status quo” and do not employ university-instructed innovations unless they are supported by school staff (p. 653), this current study did not show any incidences that these 10 beginning teachers were stifled in any innovation brought from their university studies. Many of the support programs focus on induction and lack a stronger focus on the core business of education, which is teaching and learning. Learning about the school culture and infrastructure is essential for beginning teacher induction; yet once induction is undertaken, beginning teachers are left largely unsupported on the core business of teaching (Hudson et al., 2009). Furthermore, supporting beginning teachers may be advocated by education systems but supporting beginning teachers’ connection of theoretical knowledge learnt at university to practical applications in specific school contexts is left up to school principals and executives.

There can be an assumption that beginning teachers who have completed four years of an undergraduate study with about 20% of the course time involved with schools during extended practicum and internship periods (e.g., United States, Australia) are equipped to cater for the immense diversity that exists within education systems, schools and classrooms. University studies cannot cover the enormous contexts in which schools operate and need to be more astute about the coursework design. Schools contain as many human conditions as there are in society and, for instance, learning about autism for the depth of understanding required for teaching students with this condition may well require a medical degree or part thereof. In addition, primary teachers spread their practices further still as they are required to teach across all key learning areas, including the extensive extended curriculum and extra curricula activities. A beginning teacher entering the school will need support for the various human conditions, curricula knowledge and pedagogy, socio-cultural contexts and the range of other interpersonal skills necessary for ensuring collaborative working environments. Although beginning teachers have completed four years of teacher education, they are expected to accomplish teaching tasks similar to their veteran colleagues, and, indeed, some within more extreme conditions (Hudson et al., 2009).

Australia (O’Brien & Goddard, 2006), America (Algozzine et al., 2007; Darling-Hammond, 2010), and many other countries have significant attrition rates of beginning teachers from the teaching profession; thus timely support in the form of induction and mentoring is recommended, with consensus, as an avenue for retaining teachers (Ganser 2002; Darling-Hammond, 2010). However, retaining beginning teachers requires getting to the root of the problem, and tackling the problem by developing resilient skills as suggested by some authors (e.g., Castro et al., 2010; Le Maistre & Paré, 2010) may be too late to avert the attrition. Although favourable working conditions and mentoring support in schools must be a key part of the solution in supporting beginning teachers (Barrera, Braley, & Slate, 2010), further knowledge and skills (e.g., see Table 1) need to be included in teacher preparation. Ongoing research is required to understand how to prepare preservice teachers for the types of events and circumstances that can occur in today’s education systems, schools and classrooms. Therefore, supporting beginning teachers will require a two-pronged approach: (1) timely induction and mentoring that caters for school and classroom contexts, and (2) up-to-date knowledge on addressing beginning teachers’ issues for universities to provide responsive tertiary coursework. As education is constantly changing, this will require universities to embed research on beginning teachers’ first years to ensure findings are included in coursework to address the many varied issues that preservice teachers may eventually face.

Universities and schools have partnerships in preservice teacher education but this partnership generally becomes detached for supporting beginning teachers. One way of assisting beginning teachers is for universities to continue the support of beginning teachers in a partnership arrangement for a few years into the profession (e.g., Bezzina, 2006). It is essential that universities join in the challenge of supporting beginning teachers, particularly tackling the problem at its formative stage by advancing university coursework to provide praxis for real-world teaching. Intervention for retention is paramount within the school system (Sharplin et al., 2011); nevertheless such intervention also needs to occur at the root of the problem, thus, governments must allocate funds for universities to undertake timely research on beginning teachers’ needs within their first years of teaching. If for instance, a key issue is behaviour
management, then research must uncover specifics about beginning teachers’ issues to embed solutions within tertiary education coursework. Similarly, skills on communicating with confronting parents need to be embedded in the course design. It is also important as a two-pronged approach to understand that a university degree signifies the beginning of one’s career and not mastery of the profession, hence necessitating timely induction and mentoring in schools.

ACKNOWLEDGEMENTS

This work was conducted within the Teacher Education Done Differently (TEDD) project funded by the Australian Government Department of Education, Employment and Workplace Relations (DEEWR). Any opinions, findings, and conclusions or recommendations expressed in this paper are those of the author and do not necessarily reflect the views of the DEEWR. I would like to acknowledge the work of Sue Hudson as Project Leader, Jenelle Edser as the TEDD Project Officer and Dr Michelle Murray as the Research Assistant.

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A Survey of Case Studies Used in Core Finance Courses for MBA Students

Min Xu
University of Detroit Mercy

Junhua Jia
University of Detroit Mercy

Suk Hi Kim
University of Detroit Mercy

The case study approach in finance is often regarded as one of the best ways to bridge the gap between theory and practice. While much has been said about the relationship between case courses and graduate programs, little research has been performed on sources of cases in use, coverage and organization of courses, and the grading of oral and written reports. U.S. finance professors who have taught the MBA-level core finance courses (the 2nd MBA-level finance course), were surveyed to determine which sources of cases have been used, the organization of classroom discussions, number of oral and written assignments, and grading procedures.

INTRODUCTION

Kester (1999) addresses that teaching finance courses poses the continuous challenge of linking a variety of theories to the actual practice of finance in the real world. Most finance textbooks for MBA students are oriented toward the memorization of terms, concepts, and predictable end-of-chapter problems. The required memorization only fulfills the lowest level of Bloom’s Taxonomy of Education Objectives (1956), while leaving the other five levels—comprehension, application, analysis, synthesis, and evaluation—untouched. To overcome the tendency of textbooks to treat finance in an overly mechanical or theoretical manner, many instructors use the case method, either to supplement lectures or as the basis for a separate course devoted entirely to cases. There are different ways for students to master a subject, but many argue that the case study approach is the most effective.

Roulac (1975) states that the use of case studies can facilitate the transition from intellectual dependence to independence and self-reliance. Viscione and Aragon (1978) find that when applied successfully, case studies offer a unique opportunity for students to become intimately involved with financial decision-making processes. They also mention that the two key issues in finance education are the development of the overall analytical skills and the bridge of the gap between theory and practice. Therefore, introducing case studies to bridge the gap between theory and practice also tends to reinforce the development of critical thinking in finance education. Facione (2011) says that critical thinking is a process of making reflective judgments about what to believe or what to do, and it is widely applied in problem solving and decision making. In this sense, case studies in finance education provide an excellent
opportunity to train students in the skill of critical thinking, while at the same time to achieve higher levels of the objectives promoted by Bloom’s Taxonomy.

Most cases center on a series of real-life, current, and decision making situations. Cases are not designed to present a right answer which one can memorize in the hope that can be applied in similar situations. In other words, cases are the raw materials that permit simulation in the classroom of actual discussions carried on informally among the students. The learning comes from actually participating in the search for solutions. In case analysis, the focus shifts to the student’s involvement rather than isolation and subjective class preparation, thereby reducing the role of the instructor to, more or less, a facilitator of ideas and arguments. Tripathy (2009) concludes that the role of the instructor in case studies is variously described as guide, facilitator, probe, referee, overseer, resource person, leader, tutor, moderator, or questioner.

The case study approach has been long regarded as an effective strategy to improve the oral and written skills of students in financial management. In fact, the case study approach enables students to learn all forms of communication simultaneously: reading, listening, speaking, and writing. The growth and promising development of the case method are attributable, pedagogically, to its ability to generate enthusiasm while students analyze practical situations and evaluate workable solutions to real problems faced by American businesses. Consequently, the case study approach helps students better understand and appreciate the real-world relevance of finance theory and concepts. For their part, several papers, Dorn (1999), Botstein(1980), and Addams(1981) all reveal that potential employers have confirmed that the skills toward which case studies are directed are significant factors in hiring graduates and evaluating work performance of individuals considered for promotions. The purpose of this research note is to ascertain how extensively finance professors use case studies in teaching their MBA level core finance courses, which is closely related to the work of Kim and Guithues (1982).

While much has been said about the relationship of case courses to graduate programs, little research has been performed on sources of cases in use, coverage and organization of courses, and the grading of oral and written reports. Finance professors who have taught the MBA-level core finance courses (the 2nd MBA-level finance course), were surveyed to determine which sources of cases have been used, the organization of classroom discussions, the number of oral and written assignments, and grading procedures. This course is variably known as corporate finance, financial administration policy, advanced financial management, financial administration, and others.

Data were obtained from a questionnaire mailed to chairpersons of the finance departments in all AACSB schools in the United States in March 2010. We obtained mailing labels of deans for AACSB schools from the Association to Advance Collegiate Schools of Business in Tampa, Florida for $150, and then replaced the name of dean with the chairperson of the finance department. Of the sixty-two questionnaires which were returned, forty-eight respondents used case studies in their courses, while fourteen respondents did not use case studies in their courses. Because forty-eight respondents fit into the grouping for our study, we separated our data to reflect current teaching practices in case studies on the graduate level.

**COVERAGE**

Table 1 shows the number of cases assigned for classroom discussion and written reports. As a group, the respondents assigned an average of seven cases for written analysis, oral presentation, or both, though a few professors assigned over fifteen cases. Apparently, a greater number of professors used written case analysis than oral presentation.
TABLE 1
NUMBER OF CASES ASSIGNED FOR ORAL AND WRITTEN REPORTS

<table>
<thead>
<tr>
<th>Number of Cases</th>
<th>Oral Report</th>
<th>Written Report</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Responses</td>
<td>Percentage Responses</td>
</tr>
<tr>
<td>0 (zero)</td>
<td>27</td>
<td>0.56</td>
</tr>
<tr>
<td>1 to 5</td>
<td>15</td>
<td>0.31</td>
</tr>
<tr>
<td>Over 6</td>
<td>6</td>
<td>0.13</td>
</tr>
<tr>
<td>Total</td>
<td>48</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Needless to say, there are a wide variety of finance cases from a variety of sources, including universities, academic journals, case books, textbooks with both theory and cases, and others. While the use of case studies introduces high levels of flexibility and effectiveness into the classroom, the careful selection of finance case studies is of great concern. Bruner et.al. (1999) find that the three major criteria used for case study selection are the educational objectives, the type and level of the course, and the background of the students.

Table 2 shows that the most popular source of cases obtained by the respondents is Harvard Business School finance cases (34 percent), followed by other sources (17 percent), unpublished school case studies or their own cases (14 percent), and case books (14 percent). Those professors who selected “other sources” as the sources of their cases said that they used articles published in the Wall Street Journal, trade magazines, and academic journals. Three of out six respondents who obtained their cases from college clearing houses said that they used the University of Virginia Darden School of Business cases.

TABLE 2
SOURCES OF CASES USED

<table>
<thead>
<tr>
<th>Sources of Cases Used</th>
<th>Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case books</td>
<td>10 (0.14)</td>
</tr>
<tr>
<td>Textbooks with both theory and cases</td>
<td>8 (0.12)</td>
</tr>
<tr>
<td>Harvard Business School finance cases</td>
<td>24 (0.34)</td>
</tr>
<tr>
<td>College clearing houses</td>
<td>6 (0.09)</td>
</tr>
<tr>
<td>Unpublished school case studies or your own cases</td>
<td>10 (0.14)</td>
</tr>
<tr>
<td>Other sources</td>
<td>12 (0.17)</td>
</tr>
<tr>
<td>Total</td>
<td>70 (1.00)</td>
</tr>
</tbody>
</table>

It is not surprising to find that the most popular source of cases used by corporate finance instructors is Harvard Business School cases. Dorn (1999) mentions that the case method has been popular at Harvard University for teaching the complexities of the law, and later, business administration and communication. Harvard Business School professors introduced business cases for the first time to give students practical experience for use in the real world. These cases have been published for the use of other institutions, and Harvard Business School has sold a course packet of cases tailored to the need of each instructor for years. They have motivated other schools and instructors around the world to develop...
thousands of cases for their classroom uses and for sale.

Fifty-six percent of the respondents said that they spent somewhere between one and sixteen hours—with an average of four hours—lecturing on research tools and techniques of financial analysis to assist members of the classes in their oral and written case reports. On the other hand, the remaining 44 percent reported that they did not spend any time on research tools and techniques for case analysis. Furthermore, the respondents almost equally divided their class time between case studies (49.58 percent) and non-case assignments (50.48 percent).

However, it is important to note that eleven instructors (24 percent) spent over 80 percent of their class time on case studies, while fifteen instructors (31 percent) spent over 80 percent of their time on non-case assignments, such as lectures on theories, term papers, examinations, etc.

There are necessary steps and guidelines normally followed in analyzing cases. While the formats varied, the clear majority of instructors (58 percent) followed a four-step procedure: 1. Identify only one key problem. 2. Identify the causes of the problem. 3. Define alternative solutions. 4. Reach a decision.

The student must first understand the background information about the case or an overview of the case, and then: 1) identify only one key problem, though there may be several problems or a multitude of symptoms; 2) identify the causes of the problem, which requires careful diagnosis because wrong causes may lead to wrong solutions; 3) define alternative solutions and evaluate the pros and cons of each alternative, and 4) reach a decision— one of the alternatives must be selected with an adequate explanation of its superiority. The identification of the problem is perhaps the most critical part of the analysis, because the failure to identify the problem correctly may yield solutions to the wrong problem. It appears that Darden integrates this four-step procedure of case analysis with the four-step learning process for their MBA students. “Students find the Darden curriculum both challenging and rewarding. Darden’s case method is based on a Four-Step Learning Process, which allows for complete understanding and integration of the materials:

1. Read and consider each case on your own. You must identify problems, define alternatives, analyze data, make decisions and outline a course of action.
2. Share your ideas with your learning teams and resolve areas of uncertainty.
3. Discuss the case in class and explore the input of everyone in your section.
4. Reflect on how your initial ideas changed as a result of the input from your learning team, section and faculty.”

GRADING

The respondents reported that they divided their course grade between case studies (55 percent) and non-case assignments (45 percent). Table 3 shows the component elements of the course grade, frequency of their usage, and weighted average course grade. The three elements most commonly used to determine the student course grade are written case reports, oral presentation, and examinations. The weighted average course grade by the forty-eight instructors as a group consists of written reports (49 percent), examinations (36 percent), oral presentation (1 percent), class participation (6 percent), and quizzes (7 percent). While oral presentation is used by almost 58 percent of the respondents as one of the criteria for the course grade, it accounts for only 14 percent of the weighted average course grade. On the other hand, while examinations are used by about the same percentage of the respondents (56 percent) as the oral presentation (58 percent) as one of the criteria for the course grade, its weight (36 percent) in the course grade is almost twice as much as that of the oral presentation. Table 3 indicates that class participation is used by almost half of the respondents for the course grade, but it amounts to only 7 percent of the weighted average course grade.
The respondents as a group put a little more weight on case studies (56 percent) than on non-case assignments (44 percent) in dividing their course grade between these two criteria, but this weighted average is highly misleading because quite a few of professors used either case studies or non-case assignments as an almost exclusive criterion for the course grade. In addition, the respondents reported that in order to determine if their students had read the assigned case before each class, they gave quizzes (15 percent), collected written case outlines and/or written reports (58 percent), asked some questions (46 percent), and used other methods or no method (12 percent) on the cases beforehand. It is important to note that the percentage total of these methods used is greater than 100 percent because some instructors used multiple methods to make sure that their students had read the assigned cases before each class started. Apparently, this survey indicates that the respondents felt that the student’s preparation was critical to successful use of the case analysis method.

Case course instructors are more likely to face student complaints because a portion of the course grade depends on the instructor’s subjective judgment. Both oral presentation and class participation are the two areas in which grades depend on the instructor’s subjective judgment. One way to minimize such student complaints is to assign very little or no weight to these controversial areas. Thus, it is fair to assume that the respondents of this study might have assigned little weight to these two subjective judgments in order to minimize student complaints, while using them to make sure that students will be motivated to better prepare for oral presentations and classroom discussions.

CONCLUSION

The case method encourages students to develop competencies and critical thinking by placing finance concepts in the corporate context. The success of the case method as an important learning experience, however, is directly related to the amount of student preparation and involvement. Thus, our survey confirms that instructors made certain that their students had read the assigned cases before each class by giving quizzes, collecting written case outlines and/or written reports at the beginning of the class, and asking some questions on the cases beforehand. Instructors can foster their students’ active participation in class discussion by assigning a higher weight in the course grade on class attendance and class participation, but they assigned a smaller weight on these elements, perhaps, in order to avoid student complaints.

Quite a few of our respondents (fourteen instructors out of sixty-two respondents) did not use even a single case in their MBA-level core finance courses. In addition, twenty-six instructors who used cases in their courses have spent over 80 percent of their class time either on cases or lectures. As Viscione and Arargon (1978) address that the fundamental problem in finance education is the gap between theory and practice, this problem can be eliminated by using case studies in finance education, but the success of
the case method depends on student knowledge of essential concepts and techniques. Thus, to overcome the limitations of an all-case course or an all-lecture course, both cases and lectures can be combined into a single course to obtain the best of both worlds. In other words, a well-balanced approach in both areas is critical to solving the fundamental problem of the gap between theory and practice in finance education. Only twenty-two of the sixty-two respondents in our survey have done so in their MBA-level core courses in finance.

ENDNOTES


REFERENCES


Learning and Assessment: The Application of ePortfolios

Robert S. Curtis
Franklin University

Wenxia Wu
Franklin University

The higher education community constantly seeks effective methods to evaluate student academic achievement and program learning outcomes. Many institutions in the new millennium have been embracing ePortfolios in various areas of higher education with multiple purposes of accountability, assessment, and support for learning. This paper examines the application of ePortfolios at Franklin University in enhancing transparency in learning and assessment in healthcare education. At Franklin University, four aspects of transparency in learning and assessment are identified for adult learners: relevance, visibility, accessibility, and scalability.

INTRODUCTION

How do we measure progress with the required competencies and knowledge necessary for students to be successful in healthcare education? How do we periodically assess the nature and levels of deficiencies to provide the needed scaffolding for the students? As educators, we are responsible for ensuring students are prepared for the complexities of managing in healthcare organizations. Furthermore, to become a recognized accredited program, the Commission on Accreditation Healthcare Management Education (CAHME) specifies, in its accreditation criteria, programs will monitor, document, and measure student competencies and knowledge, using “a range of assessment methods…” (CAHME, 2011).

Specifically for these and other reasons discussed in this article, learning tools such as electronic portfolios are gaining acceptance by healthcare educators. Electronic portfolios, or ePortfolios, “digitized collection[s] of artifacts including demonstration[s], resources, and accomplishment[s],” are used as administrative tools, a source of individual reflections, a platform for exchange of ideas, and a channel for feedback (Lorenzo and Itelson, 2005). In addition to reinforcing student learning, ePortfolios promote transparency in the learning process by facilitating visibility of learning and formative assessment. Students can electronically present various artifacts reflective of their learning experience to a variety of stakeholders (Hassell, 2008).

This paper will address the role ePortfolios play in the learning and assessment process, and how one educational institution proposes to use ePortfolios to promote student learning and measure competencies and knowledge for students in healthcare management.
TRANSPARENCY IN LEARNING AND ASSESSMENT

The concept of transparency in learning and assessment is a newly introduced concept in academia. Historically, transparency has been a term used in human-computer interaction. Working on a socially guided machine learning project, dePalma (2010) described transparency as a “mechanism[sic] that allows the user to peer into the internal working state of the machine and provides the ability to modify that state,” or make the learning process visible and accessible for modification.

Transparency in Learning

Transparency in learning is not a given, especially in distance education. With distance education, students work mostly online and in most cases, asynchronously. Thus, the quality of their interaction with the material, the level of learning engagement, and their on-going learning activities are not easily monitored and assessed by professors and peers. As a result, a growing body of research supports a purposeful, transparent approach to learning (Gillespie, 2002). Our understanding of transparency in learning is characterized by:

- **Relevance**: Learners are provided information on the relevance of the content knowledge and the teaching methods. In other words, learners are informed how and why they are learning certain knowledge in particular ways.
- **Visibility**: Learning is visible to learners and educators. We interpret learning as an extended growth in acquisition, comprehension, application and creation where both the process and the products, are perceivable to learners and educators.

Transparency in Assessment

After reviewing 20 years of quality assurance in higher education in the U.S., Peter Ewell (2010) concluded that accreditors had previously been “ineffective precisely because their operations were deemed ‘secretive’ and provided little information…” He refers to transparency in assessment as the full disclosure of the results of quality reviews. Our understanding of transparency in assessment goes beyond the disclosure of results to include evaluation. To be effective, transparency must be:

- **Accessible**: Learners must have access to the review results and access to the assessment process. Internal and external evaluators must have access to products (various aspects of student learning achievements) and to the learning process (extended view of growth in acquiring, comprehension, application and creation).
- **Scalable**: The assessment model must scale to the demands of the current education environment to conduct evaluations at different levels: individual, programmatic and institutional.

ePORTFOLIOS

Evolved from traditional portfolios, many institutions in the new millennium have been embracing electronic portfolio systems in various areas of higher education with multiple purposes of accountability, assessment, and support for learning. Thus far, there have been no statistics collected to record the number of higher education institutions using ePortfolios; however, a glimpse into the usage of several ePortfolio platforms gives us a general idea of the popularity of ePortfolio in teaching and learning.

Up to 2010, over 500 colleges, universities, and higher education organizations used LiveText (a closed source ePortfolio system) to measure and evaluate student learning (www.livetext.com). Launched as an open source effort in 2006, Mahara, a free and open ePortofolio system, has been adapted by a similar number of institutions (www.mahara.org). These institutions, as Strudler and Wetzel (2005) predicted, implemented portfolios for three main reasons: (a) to identify areas that need improvement, (b) to demonstrate the alignment of curriculum and student outcomes with state and national standards, and (c) to make learning visible. The latter two purposes, making learning visible and aligning it with
assessment efforts, tie closely to the notion of transparency in learning and assessment. These concepts will be elaborated on in the sections that follow.

**ePortfolio as a Tool to Support Transparency in Learning and Assessment**

Various efforts have been carried out to promote transparency in learning and/or assessment. The Illinois Initiative on Transparency in Learning and Teaching constructed a five-year plan (2009 to 2014) to engage a broad range of community colleges and universities in different modes of transparent learning and teaching. These modes included: shared class planning and agenda construction; assignment learning goals and design rationale; real-time, in-class assessment of student understanding; explicitly connected learning data with course activities; and defined grading practices and criteria (IITLT, 2009).

Electronic portfolios offer features for nurturing individual learning, implementing formative assessment and holding the student accountable. In addition, we believe it is a powerful instrument for embracing transparency in learning and assessment through:

- **Relevance**: ePortfolios allow learners to connect their own learning journey and learning achievements to certain learning outcomes for assessment. This purposeful action makes learning and assessment meaningful and relevant to learners.
- **Visibility**: ePortfolios document the ongoing learning activities as digital trails. These trails include learning products/achievements and learner self-reflections, all of which can serve as the basis for assessment and tracking learner behavior.
- **Accessibility**: ePortfolios provide access to members of the learning and assessment community: learners, educators, and internal and external evaluators. The portfolios have the ability not only to provide access to the end-products (learning achievements and evaluation results), but also to provide access to the learning and assessment process.
- **Scalability**: ePortfolios offer the functionality to conduct assessment at different levels. They can diagnose the progress of an individual learner, target a particular group focusing on one or more learning outcomes, and identify, at the program level, the qualities of learning and gaps in outcomes.

**FRANKLIN UNIVERSITY**

To understand the need for transparency, the way ePortfolios will be used, and how they will inform learning and assessment practices, it is important to understand the institution and programs where they will be implemented. Located in Columbus, Ohio, Franklin University has served the higher educational needs of central Ohio for over 100 years. Accredited by the Higher Learning Commission of the North Central Association of Colleges and Schools, and the International Assembly for Collegiate Business Education (IACBE), Franklin University is a not-for-profit leader in adult education ascribing to the following principles:

- ensuring academic quality;
- providing student access to educational opportunities;
- adapting to the needs of students; and
- responding to changes in society, professions, and the business community (www.franklin.edu)

Annually over 11,000 students attend Franklin University. The University’s student body is diverse in culture, background, and experience. The average age of the undergraduate student is 32 years, and the average age of a graduate student is 36 years. Students participate in classes from across the United States and around the world via face-to-face and online courses.

Franklin continually seeks new ways to provide educational opportunities to busy, working adults and it would only seem appropriate that an ePortfolio tool would meet the needs of the students, the University, and the MHA Program.
Healthcare Majors at Franklin University

The Health Department at Franklin University is part of the College of Health and Public Administration. Currently there are over 600 students enrolled in three on-line undergraduate healthcare majors:

 Allied Healthcare Management—a degree completion program.
 Healthcare Management—a traditional degree program.
 Healthcare Information Systems Management—a traditional degree program.

The Healthcare Management major is an Associate member of the Association of University Programs in Healthcare Administration and a member of the Higher Education Network of the American College of Healthcare Executives. An RN-BSN program is scheduled to start in the winter of 2012 and a Master of Healthcare Administration program in the summer of 2012. A Master of Science in Nursing is slated to start in 2013, and a Master of Public Health in 2014. All of the above programs are, or will be, totally on-line with the capability for offering face-to-face classes.

The Master of Healthcare Administration Program

During the recent economic downturn the healthcare industry has been one of the few bright spots in terms of employment. Regionally in central Ohio, major healthcare employers have announced significant expansion programs which will create thousands of healthcare positions. As this planned expansion continues, there will be the need for more healthcare managers to lead both expanded existing and new programs. The Department of Labor indicates healthcare management positions will grow faster than the average management position in the future (www.dol.gov). As a result of this growth, the undergraduate healthcare management programs have experienced a sixty (60%) growth in enrollment over the past three years.

Program Description

The Master of Healthcare Administration (MHA) at Franklin is intended to provide the student who wants to excel as a leader in the delivery of healthcare services with a broad conceptual understanding of the healthcare industry and who recognizes the importance of life-long learning and career development.

The Program will focus on working managers and professionals from a variety of disciplines who have 3-5 years of managerial experience in the workplace. As such, it is designed to provide students with a learning environment that integrates individual student perspectives from a variety of healthcare settings and other sources. The Program is also intended to prepare these individuals to lead and manage by bringing together healthcare management theory and practices in a business model.

Curriculum Design

All courses are designed to be applicable to diverse environments and healthcare settings. Learning methodologies include case studies, lectures, team projects, and culminate in a portfolio capstone project. The curriculum will be delivered using a blended system, with two one-and-a-half day on-site sessions during the course of the program. Forty credit hours in an eighteen (18) month cohort environment are required for graduation.

Program Learning Outcomes and Competencies

The MHA Program has adopted a competency based model which reflects the competencies and skill sets established by the National Center for Healthcare Leadership (NCHL) (www.nchl.org). The MHA model comprises three (3) areas and twenty-six (26) competencies relevant for graduate study: leadership, management, and problem-solving (see Appendix A).

The Leadership area includes those competencies required to help students make decisions, motivate others, and manage change. The Management area includes those competencies necessary for optimizing the management of healthcare organizations, while Problem-Solving competencies provide students with those skills necessary to achieve tangible and long-lasting organizational results.
The MHA learning outcomes incorporate Bloom’s Taxonomy of Education to reflect different aspects of cognitive learning:

- At the knowledge level-recognize and articulate facts, concepts, and procedures related to healthcare administration theories and practices.
- At the comprehension and synthesis levels-integrate healthcare administration theories, principles, and practices for future application.
- At the application level-systematically apply communication, technical, analytical knowledge, and critical thinking skills to administrative and clinical healthcare related problem-solving.
- At the analysis and evaluation levels-evaluate the effectiveness of plans, development, and implementation of healthcare administrative solutions.
- At the creative level-design and create solutions to address and solve societal, cultural, and environmental healthcare issues.

THE ePORTFOLIO INITIATIVE AT FRANKLIN UNIVERSITY

As stated previously, the majority of Franklin University students are adult learners. Cercone (2008) identified one of the prominent characteristics of adult learners as having the “need to be active in the learning process.” The practice of transparency in learning and assessment makes the cognitive learning process visible to both evaluators and students. More importantly, it makes the associated assessment visible enabling students to identify successes and deficiencies and make adjustments accordingly. Another characteristic identified adults’ “need to self-reflect on the process of learning for transformational learning” (Cercone, 2008 p. 23). Self-reflection is a way to make the inner cognitive process visible. ePortfolios have been recognized for their ability to support the learner’s self-reflection. The adult learner also “requires a climate that is collaborative, respectful, mutual, and informal” (Hassall, 2008). Such an environment can be created using ePortfolios to promote periodical and formative evaluation.

Assessment at Franklin University is an ongoing, faculty-driven process aimed at helping Franklin understand and improve student learning. Efforts are directed toward the improvement of institutional effectiveness and have evolved to be not only thorough and comprehensive, but also manageable and effective. Guided by conceptual discussions on transparency in learning and assessment, ePortfolio will be used in the MHA program to review, understand, facilitate, and evaluate the learning of a student over a period of time. The use of ePortfolio will also include program outcome evaluations by internal and external reviewers. The use of the ePortfolio will serve three purposes:

- **Learning**: To facilitate transparency in learning by providing visibility of an individual’s learning and supporting relevant learning.
- **Assessment**: To facilitate transparency in assessment to support internal and external reviews. For internal review, it allows for an extended view of growth in learning, understanding, and application. It also allows for an extended view and assessment of the process as well as the product. For external review, it allows for external assessors, evaluation panels, employers, and accrediting bodies, to have access to the students’ product. For accreditation, the culmination of the students’ portfolios can provide strong evidence they have met the competencies established by the program.
- **Curriculum**: To use portfolios to enable program faculty to broaden their curriculum to include areas they traditionally could not assess such as leadership and communication and to base their design/re-design of courses on the evidence ePortfolios collect.

The ePortfolio assessment will assess six aspects of the MHA program including communication skills, managerial skills, leadership skills, etc. Each assessment area and evaluation effort will be tied to each course to facilitate and collect evidence. The portfolio assessment structure is illustrated in Table 1:
TABLE 1  
ePORTFOLIO COMPONENTS: ASSESSMENT AREA AND COURSES

<table>
<thead>
<tr>
<th>Assessment Area</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Skills</td>
<td>MBA 713-Human Resources</td>
</tr>
<tr>
<td>Managerial Skills</td>
<td>MHA 735-Healthcare Delivery Systems</td>
</tr>
<tr>
<td></td>
<td>MHA 762-Global Health</td>
</tr>
<tr>
<td></td>
<td>MHA 735-Healthcare Delivery Systems</td>
</tr>
<tr>
<td>Leadership Skills</td>
<td>PSYC 603-Managerial Psychology</td>
</tr>
<tr>
<td></td>
<td>MHA 742-Health Law and Ethics</td>
</tr>
<tr>
<td>Business Planning &amp; Management</td>
<td>MHA 772-Healthcare Strategic Management</td>
</tr>
<tr>
<td></td>
<td>MHA 752-Health Policy</td>
</tr>
<tr>
<td>Quantitative Knowledge</td>
<td>MBA 733-Financial and Managerial Accounting</td>
</tr>
<tr>
<td></td>
<td>MHA 745-Healthcare Financial Management</td>
</tr>
<tr>
<td>Assessment of Healthcare</td>
<td>MHA 772-Healthcare Strategic Management</td>
</tr>
<tr>
<td>Education Experience</td>
<td></td>
</tr>
</tbody>
</table>

The portfolio will be built, facilitated, and evaluated throughout the program. The students will meet on-site twice during their study in the MHA program. Part of these face-to-face meetings will be used for portfolio building and evaluation purposes.

CONCLUSION

Along with students, there are many stakeholders expecting healthcare management programs to provide graduates with the necessary knowledge and competencies to be successful in their careers. Franklin University proposes to use ePortfolios for both learning and assessment its Master of Healthcare Administration Program. The Program plans to gather data and results over a period of time to assess the efficacy of such portfolios as a truly effective learning and assessment tool in healthcare administration. Results will be shared periodically through professional associations and professional social media reporting.

REFERENCES


APPENDIX: A

TABLE A1

<table>
<thead>
<tr>
<th>Areas</th>
<th>Outcomes/Competencies</th>
<th>Actions Related to Outcomes/Competencies</th>
<th>Sample Artifacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Outcomes</td>
<td>Outcome 1. At knowledge level, recognize and articulate facts, concepts, and procedures related to healthcare administration theories and practices.</td>
<td>Take all MHA program required courses and receive a grade of B or above for each course.</td>
<td>A diagram that illustrates the MHA courses student has taken and the grades received.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Categorize different healthcare management theories, principles, and practices.</td>
<td>An assignment to compare and contrast different healthcare management theories, principles, and practices.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Prioritize healthcare management practices in terms of the healthcare organization's needs.</td>
<td>A learning activity to identify trends and patterns of certain healthcare management practices.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Compare and contrast different healthcare management theories, principles, and practices.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Summarize different healthcare management theories, principles, and practices.</td>
<td></td>
</tr>
</tbody>
</table>
### Outcome 3. At application level, systematically apply communication, technical, and analytical knowledge, and critical thinking skills to administrative and clinical healthcare related problem-solving.

- Interpret administrative and clinical healthcare problems or situations.
- Practice communication, and technical and analytical knowledge and skills in simulated or real administrative and clinical healthcare situations.
- Modify healthcare systems to meet the organization's needs.

### Outcome 4. At analysis and evaluation levels, evaluate the effectiveness of plans, development, and implementation of healthcare administrative solutions.

- Break down the components of a plan, the development of processes, or the implementation procedures of health admin. system solutions.
- Examine the different components of a plan, development process or the implementation procedures of health information admin. solutions.
- Critique/justify the effectiveness of plans, development, and implementation of health admin. system solutions.
- Predict the impact or problems a new system will bring to a healthcare organization.

### Outcome 5. At creation level, design and create solutions to address and solve societal, cultural, and environmental healthcare issues.

- Plan the work process to identify and address healthcare issues.
- Conduct needs analysis to identify stakeholders and their interests, policy/requirements etc. regarding societal, cultural, and environmental healthcare issues.
- Develop a solution or solutions to address societal, cultural, and environmental healthcare issues.
- Evaluate developed solutions on their efficiency and their impact on the organization and the community.
- Justify the solutions based on the results of the evaluation.

### Areas of Competencies

- The Leadership area includes those skills required to help individuals make decisions, motivate others, and manage change.
  - Accountability
  - Change leadership
  - Collaboration
  - Communication skills
  - Impact and influence
  - Information technology
  - Relationship building
  - Self-confidence
  - Self-development
  - Team leadership
  - Community orientation

**A team project during which the student demonstrates the identified leadership skills.**

**A real life project in which the student is a change agent in their organization.**
| The Management area includes those skills necessary to optimize the management of healthcare organizations. | • Organizational awareness  
• Performance measurement  
• Process management  
• Organizational design  
• Project management  
• Human resources management  
• Interpersonal understanding  
• Professionalism  
• Talent development | A learning activity in which the student demonstrates the identified management skills. |
|---|---|---|
| The Problem-solving area is intended to provide students with those skills necessary to achieve tangible and long-lasting organizational results. | • Analytical thinking  
• Financial skills  
• Information seeking  
• Innovative thinking  
• Initiative  
• Achievement orientation  
• Strategic orientation | A learning activity in which the student demonstrates the identified problem-solving skills. |
The Case for Change in Business Education: How Liberal Arts Principles and Practices Can Foster Needed Change

Tim Ewest
Wartburg College

Julie Kliegl
Wartburg College

A liberal arts education is touted as a tradition that produces graduates who are humane, interdisciplinary, and have the ability to think critically. While many liberal arts colleges offer business in their degree offerings, it can be seen as antagonistic to a liberal arts education. Can the liberal arts and business education find mutuality? This paper argues that the consideration of this issue is timely due to the recent decline of liberal arts education in favor of technical degrees and the recent criticisms of business education as lagging behind other majors in learning outcomes. An integration framework is offered for business education within liberal arts.

INTRODUCTION

Ongoing corruption in organizations has caused some to question the effectiveness of business education. Broughton states, “Given the present chaos, shouldn’t we be asking if business education is not just a waste of time, but actually damaging to our economic health?” (2009, p. 3).

Moreover, Schwab (2003) is concerned that most people in society today lack trust in the market-driven system feeling that organizations and their leaders have become detached from society’s needs. “In today’s trust-starved climate, our market-driven system is under attack…large parts of the population feel that business has become detached from society, that businesses interests are no longer aligned with societal interests.” He suggests corrective action, “The only way to respond to this new wave of anti-business sentiment is for business to take the lead and reposition itself clearly and convincingly as part of society” (p. E10).

Some link corruption in the marketplace to the under emphasis on the liberal arts and the overemphasis on technical and professional skills. For example, Sullivan’s (2011) major concern is that business education simply fails to prepare students for their responsibility to society, including their ethical responsibility to the businesses. His most current work with the Carnegie Foundation (Colby, Ehrlich, Sullivan & Dolle; 2011) presents methodologies and strategies to incorporate liberal learning (liberal arts) into business courses.

Research studies have demonstrated that liberal arts education, when compared to other educational alternatives has greater student outcomes including: student satisfaction with faculty, completion rate of a bachelor’s degree, students enrolling in graduate studies, students winning graduate fellowships, scores on Medical College Admissions Test (MCAT), writing skills, cultural awareness and students being part...
of social change (Austin, 1999, p.8). Additionally, business majors score lower on the entry exam for MBA programs, the GMAT (Graduate Management Admission Test), than every other major (Glenn, 2011, a) and business majors show the least gains on the Collegiate Learning Assessment in the first two years of education than any other group (Arum & Roska, 2011). These outcomes are coupled with a trend in higher education for decreased student demand for liberal arts education and increased demand for professional and technical education.

Liberal arts education is quickly becoming a minority stakeholder in higher education. “The proportion of students graduating with degrees in the liberal arts has been declining as programs offering paraprofessional and technical degrees have expanded” (Paris, 2007, p 7). In fact the percentage of degrees awarded in the arts and sciences between 1968 and 1986 dropped from 47% to 26% (Breneman, 1994). The result is that the great majority of undergraduate students in the United States major in professional or vocational fields, with business being the largest major of all. In 2006-2007, the most recent year for which data is available, 21% of all undergraduates were business majors, and if one includes all vocational majors outside business the number jumps to 68 % (Sullivan, 2011).

Recent results from national assessment efforts also point to concern about what business students are really learning. The Collegiate Learning Assessment (CLA) shows that business students show fewer gains in critical thinking, complex reasoning, and writing skills than students in any other field of study (Arum & Roksa, 2011). The National Survey of Student Engagement (NSSE) assesses effective educational practices such as level of academic challenge, active and collaborative learning, student-faculty interaction, enriching educational experiences and supportive campus environment. The NSSE 2010 annual report shows that business students are more likely to engage in active and collaborative learning such as course projects and team presentations, however, business students are also spending less time preparing for class and more time working at off-campus jobs (National Survey of Student Engagement, 2010). The level of academic challenge for business majors comes in lower when compared to majors in arts and humanities, biological sciences, education, engineering, professional programs, and social science. Furthermore, if one compares the outcomes of business education to what employers are looking for another gap emerges. Employers are looking for clear writing, quantitative analysis skills, and creative thinking (Glenn, 2011, a). Yet national assessments suggest that a liberally educated student is better prepared to meet those demands than a business student. Eventually this gap may lower the market demand for more business majors, although the time lapse between the identification of the problem and the shift in demand may come far into the future (Rafter, 2004).

One effort to address educational outcomes in business education comes through accrediting bodies specific to business education. The Association to Advance Collegiate Schools of Business International (AACSB) adopted a model of “assurance of learning” in 2003 (Glenn, 2011,b). The AACSB accredits about half of all business degrees using learning goals established by each institution with regular assessments of progress toward those goals. Business programs accredited by the AACSB use both embedded course assignments and standardized tests as assessment tools. Whether this accreditation process is improving the outcomes of business education is debated even among business faculty (Glenn, 2011,b) and results from NSSE and the CLA suggest that the accreditation process is not eliminating gaps between business students and liberal arts students in terms of some key outcomes.

While these gaps in the outcomes of business education and trust in business organizations and the professionals who run them are multivariate problems, could more, professionally capable, ethical and humane business professional be developed through the intentional integration of liberal arts educational practices into professional and technical education? What does higher education stand to lose by its declining emphasis on the liberal arts? What challenges does this present to liberal arts colleges? Are there tensions between the liberal arts and professional degrees? Are there possibilities of reconciling or integrating liberal arts education and professional/technical education?

This paper agrees with Sullivan (2011) who suggests that the integration of liberal arts education with professional/technical education would create more capable business leaders and more ethical and humane business professionals. Furthermore this paper argues that the considerations of these questions is timely due to the recent decline of liberal arts education in favor or vocational of professional degrees and
the corresponding and ongoing concerns over ethical lapses by business leaders and lower assessed educational outcomes for business majors. To address these questions this paper provides a context for discussion by considering the growing emphasis on professional and/or technical education, the tensions between the professional education and the liberal arts, the historical development of the tension and finally the market forces driving the demand for more professional/technical degrees. The paper then resolves by using four means of integrating the liberal arts into business education: leadership, creative and integrative thinking, ethical development of the person, and curriculum integration as frameworks to guide improvements to business education through the liberal arts.

CONTEXTUAL CONSIDERATIONS

Tensions Between Liberal Arts and Professional Education

A liberal arts education is touted as a significant tradition producing graduates who are humane, interdisciplinary and able to think critically and creatively. While most liberal arts colleges have business as part of their degree offerings, business education and professional/technical education can be seen by some as “free riders” or even as antagonistic to a liberal arts education.

This division, whether real or perceived, was seen clearly in a symposium in 2007 sponsored by the Kemper Foundation which investigated the relationship between the liberal arts and professional degrees. In attendance were participants from two dozen liberal arts colleges. These participants conferred on many important issues, one being the existence of a division between the liberal arts and professional education. The symposia report states:

Many saw these conflicts as being more deeply rooted in what almost seemed another version of “two cultures” argument. Some administrators and liberal arts faculty members view business as not really part of the liberal arts. Similarly, as one participant put it, it seemed almost inevitable that the ‘fix it” and “get a job” perspective of business would clash with the “think and get cultured” and “reflective” perspective of the liberal arts (LaHurd, 2007, p. 43).

In spite of this tension, the symposium focused on sharing ideas on how business and the liberal arts can be effectively combined. However, Lambert (2006) argues that there is no real divide, or there should be no real divide, between the liberal arenas and professional education. He argues that the real problem is the divide between education for vocation, and education for technique. “There is a real division in the academy, but it is within rather than between these areas” (p.30). Lambert posits that knowledge experts create what Palmer (1993) calls “objectivism” whereby objectivity is the primary characteristic of academic work. Professors are knowledge experts, and that knowledge rarely translates into whole person living or integrative knowledge. This is opposed to integrative learning that combines objective knowledge with knowledge from other disciplines and relationships among people and problems. This type of learning distinguishes liberal learning and the integrative approach can be incorporated into any field of study.

Whether an actual or perceptual division exists between the liberal arts and professional degrees or the division, as Lambert (2006) suggests, is between education for technique or education for vocation, this phenomena must be addressed. So how did business education arrive at this impasse?

Historical Interplay Between Business and Liberal Arts

Traditionally, higher education has been intentionally divided along two categories: vocational/technical and humanities. The latter educational path was intended to equip those individuals who were to hold a place of leadership within the community or civic life. This educational path was known as the “liberal arts” (Stull, 1962; LaHurd, 2007; Delucchi, 2009). To many this general distinction still represents the heart of a good liberal arts education as well as the primary distinctiveness from professional or technical education.
Beginning circa the 1880’s collegiate schools of business focused on training for careers in accounting. Prior to the 1950s a student could attend a senior college declaring themselves a liberal arts major and upon graduation join a corporate training program that provided the technical training. Then in 1950 reports by the Ford and Carnegie Foundations found that business schools had mediocre faculty, and curriculums narrowly focused on vocational skills. In response to this, business schools began to become more technical and rigorous in their approach (Holland, 2009).

After the 1960s corporations changed their perspective by demanding students who already had business education believing that these students had the basic functional skills to adapt quickly and become successful in the business environments. Corporations began to place a higher premium on an undergraduate business degree over a degree in the liberal arts. Eventually, corporations began to offer higher starting salaries to business majors than they did to liberal arts majors (Glenn, 2011, a).

At the beginning of the 21st century the academy began to realize that business schools had “over corrected” placing “an overemphasis on rigor and an under emphasis on relevance” (Bennis, 2007) and that students were learning pat answers to problems without enough “knowledge of the real world” (Mitzberg, 2004). Integrated learning that enables a student to think critically about complex environments seemed to be lacking.

Yet, even liberal arts greatest champions, liberal arts colleges, have found it hard to be true to their roots. Specifically in the 1970s there was a dramatic shift in curriculum towards studies related to work (Knox, Lindsay, & Kolb, 1993; Delucchi, 1997) arising from a demand response to market forces, specifically to maintain enrollment levels (Breneman, 1994).

**Liberal Arts Colleges Driven by Market Forces**

In the nation today approximately 600 smaller private colleges have liberal arts as a foundation or core of their institutional mission. The challenge they face is how to integrate the liberal arts into their professional education programs (Paris, 2007).

Delucchi’s (1997) research considered over three hundred liberal arts colleges comparing the claims of those colleges with their curricula. He found that in the 327 colleges he examined, two-thirds of the colleges were dominated by professional majors, yet had highlighted liberal arts as their academic mission. Furthermore, he finds that these claims are not directed towards the organization or faculty, which has the ability to create change. The claims of adherence to a liberal arts tradition are largely directed towards, “applications, accreditation agencies, college rating guides and other public constituencies” (p. 423). While mission statements may allow for some loose coupling of liberal arts and professional degrees it is clear that curriculum at these institutions is not driving liberal arts claims. Delucchi (1997) says that this creates a myth of uniqueness of the liberal arts college, which is not supported by his research.

A second study by Delucchi (2009) focused specifically on business departments at liberal arts colleges. His research examined the operational language liberal arts colleges used to identify themselves, then using strategic adaptation theory he explores the frequency of occurrence where business is the most populated degree. The findings suggest that 55% of examined institutions strongly promote their liberal arts identity as the college’s foremost public presentation. These findings suggest many liberal arts colleges are maintaining a socially acceptable perception as liberal arts colleges to their external constituency, but in doing so also create questionable institutional legitimacy. The research suggests that while market-based forces pressure institutions to decouple mission from practice, colleges, of their own accord, promote liberal arts rhetoric to adapt to competing pressures from the market and those of accreditation agencies and ratings guides.

To this point this paper has considered the multifaceted issues surrounding the interplay between liberal arts and professional education including: the posited failure of business education in developing morality, the weaknesses of business education in developing strong educational outcomes, the existing tensions between the liberal arts and professional degrees, the historical development of higher education’s present state and finally the specific challenges liberal arts colleges face because of market
demands. If integration is recommended, then specifically what options exist to address the growing concerns?

UNDERSTANDING AND RECONCILING THE LIBERAL ARTS TO BUSINESS EDUCATION

There are four broad approaches that can be used as a means for reconciling business education to the liberal arts. The first is to embrace liberal education as leadership education. The second is to enhance integrative and critical thinking in business education. The third is for business education to focus more attention on the ethical formation of the person, and the fourth is to integrate business and liberal arts curricula more closely. Using these four broad approaches as a framework to guide the discussion, each approach will be explained for its relevancy to business education and then several examples of how this is currently being done will be discussed. The four approaches used in this paper represent a wide-ranging view and understanding of the various aspects of a liberal education. While this list could be condensed or extended, for the purposes of this paper they will act as the framework for considering how to address challenges in business education.

Leadership Education

As mentioned earlier one traditionally accepted goal of a liberal arts education was to train those individuals who were to hold a place of leadership within the community or civic life (Stull, 1962; Blaich, Bost, Chan, & Lynch, 2004). Durden (2003) argues that all liberal arts colleges are rooted in a history of training individuals for leadership in organizations: public, civic, and political. The American liberal arts tradition was designed early on by men like: John Dickinson, Benjamin Rush and Thomas Jefferson to architect leadership skills in the nation’s future generations. Durden argues that little has changed in the curricular structure except the omission of a few courses; the foundational curriculum has remained the same. Therefore, to not include leadership in the training of business professionals, who will undoubtedly be in positions of leadership, would deny the role for which the liberal arts education was designed. He comments:

It is time for education leaders to affirm publicly that a liberal-arts education is not a mere luxury without practical consequence, but rather encompasses a distinctive preparing of students for positions of corporate leadership. It is time for administrators and faculty members to embrace with pride their graduates who pursue careers in business and finance and to incorporate, both philosophically and structurally, business into the core of the liberal arts curriculum (Durden, 2003, p. 23).

Early on, Harvard Business School understood the ability of liberal studies to develop leaders. A 1955 publication by Frederic Pamp suggests the pedagogy concerning the use of literature stating, “The fullest kind of training for leadership in business management can actually be given by the practice of reading and analyzing literature” (p. 47). In this approach, business management faculty use fictional literature to enhance business leadership education. This voice from history finds contemporary application today in the teaching of Joseph Badaracco.

Badaracco (2006) believes that literature is able to open up perspectives for business leaders that are unparalleled for self-knowledge and the cultivation of challenging character questions. He states:

In the best stories, literature and life converge. The characters come across as real people, not puppets or specimen in lab dishes. This can broaden our view of leadership by showing us leaders in a wide range of circumstances. It also deepens our understanding by revealing what they are thinking and feeling. And, as we look closely . . . we confront a series of challenging questions - about the individuals in the stories and about ourselves (2006, p.4).
Other examples of the use of literature to foster leadership development include: Oliver (2003) who uses Shakespeare’s *Henry V* to teach executives lessons on leadership and fostering internal motivation and Hamel (2002) who uses Judeo Christian religious history and narrative as he coaches executives to find greater personal and organizational purpose.

Daloz Parks (2005) writes about Harvard University professor, Ron Heifetz’s classroom methods in teaching leadership. She suggests that leadership today requires the ability to see the complex and interdependent relationship among multiple systems. She points out the discrepancy between teaching knowledge and preparing people to exercise judgment and skills to bring the knowledge to bear on these intricate systems. The echoes of integrative learning from Lambert (2006) and Bennis (2007) are clear in this approach.

There are numerous other examples at the department or college level of fostering leadership in the liberal arts setting in conjunction with or as part of business curriculum. For instance, Franklin Pierce University requires student leaders in campus organizations to reflect on how the liberal arts fit into their organizational setting. Another example comes from the University of Puget Sound who facilitates cooperative based coursework. This strategy requires students to attend weekly classes with a business leader in the community who acts as their mentor. The mentoring relationship also requires students to produce a project, which is designed to meet an unmet need in the marketplace (Paris, 2007).

Clearly business management graduates will be involved in leadership within public, for-profit and not-for-profit organizations. Therefore, the integration of leadership studies into business education would appear to be a natural fit.

**Integrative and Critical Thinking**

A second approach is suggested by Blaich, et. al., (2004) who add that the liberal arts is also “…an institutional ethos and tradition which places a greater value on developing a set of intellectual arts, than professional or vocational skills” (p. 12); this viewpoint is shared by Snow (1966), Stull (1962) and Brown (1994). Moreover, these intellectual arts are demonstrated in creative and critical thinking, where such thinking creates coherence in the intellectual integrity of students in that they can link moral and personal values to activities (Stull, 1962; Blaich, et. al., 2004). This concept is supported by Lambert (2006) with regard to vocational approaches to liberal education that allow for whole person development. Finally, Rothblatt (2003) suggests that, “Liberal education offers the intellectual and emotional basis on which is constructed a capacity to make decisions. It is the means by which men and women have sought to interpret the world or take a comprehensive view of it” (p. 15).

The ability for managers to think creatively and critically is essential in business and is not a new expectation (Pamp, 1955). As a businessperson, the key is to know your internal and external environment well enough to see trends and possible courses of action. No two environments are alike. One needs to be a keen observer and an intelligent thinker to put the pieces together in an effective manner. This is what Bennis (2007) is calling for when he demands that business students need fewer pat answers and more ability to solve problems in the context of a complex reality.

Drucker (2001) suggests that this type of holistic thinking is going to be required for future business leaders. Drucker writes “But what we do need – and what will define the educated person in the knowledge society – is the ability to understand the various knowledges” (p. 294). Drucker believes business education has failed because it has not taken a holistic approach to life and its graduates “feel let down” (p. 293). Drucker suggests a full integration between functional and liberal arts education.

Harvard University Business School has a long held belief in critical and creative thinking and its connection to the humanities and states: “The creative element in management, as in the humanities, is developed by the disciplined imagination of a mind working in the widest range of dimensions possible” (p. 47).

One example of operationalizing this approach in the classroom comes from Harrison and Akinc (2000) at Wake Forest University who train nascent managers by asking them to analyze and interpret works of art and literature using fifth discipline learning to reference leadership concepts.
Contemporary scholars like Smith-Fichter (2002) concur, believing that liberal arts education develops analytical and creative thinking, but more importantly students become continuous learners. The liberal arts environment is catalytic for developing this type of continuous learner because it provides a learning culture that is rooted in a close bond and friendship between faculty and students (Smith-Flitcher, 2002). This entwining of the unique friendship, existing as an essential element in liberal arts education, is also suggested by Blaich, et. al. (2004) who include it in their definition of what the liberal arts education entails. The connection to community also fosters thinking within the students that is more holistic and humane.

Results from NSSE (National Survey of Student Engagement, 2010) suggest to business faculty that they need to require more critical reading and writing from business students as significantly fewer business students report ever having been required to write a paper of more than 20 pages. Writing assignments that focus on exploring questions and creating knowledge through exploration of complex issues would be a means of developing both writing and analytical skills. Critical reading is addressed by requiring research into the issue and critical writing and analysis is addressed as the student explains the evidence and explores its meaning often in the face of conflicting evidence. Faculty could also develop more assignments that require examining problems from multiple perspectives as business majors also have comparatively lower results on the question of whether they have ever tried to better understand someone else’s view by imagining how the issue looks from his or her perspective.

Ethical Development of the Person

A third approach to understanding liberal arts education is posited by Colson (2005) who argues that the historic goals of a liberal education was to both cultivate knowledge and to cultivate character. Aristotle considered all persuasion to stem from ethos, logos, and pathos; Meaning that an effective argument is assessed on the credibility or ethical foundation of the person, the sound reasoning of the person, and the use of emotion to stir empathy. Martin Luther King Jr. said, “The function of education is to teach one to think intensively and to think critically. Intelligence plus character – that is the goal of a true education” (King, 1947). Business leaders need to be keen observers of their internal and external environments to make good decisions, and these decisions must be made in the context of the competing needs of multiple stakeholders. Knowledge of ethical philosophy and the ability to view issues from multiple perspectives is essential in order to keep the needs of society aligned with the needs of the business.

One example of a business education program taking this approach is the College of St. Catherine, which embedded ethics across the entire curriculum and created two specific courses, “The Reflective Woman” (it is a women’s college) and “Global Search for Justice” (Paris, 2007).

Babson College integrates ethics into the business curriculum. A liberal arts faculty team coordinates with business faculty to develop conceptual frameworks for ethical decision making. The framework reflects the philosophies of Immanuel Kant, Aristotle, Adam Smith, Jeremy Bentham and John Stuart Mill (Babson College, 2011). Through a grant from the Harold S. Geneen Charitable Trust the faculty are developing a series of undergraduate ethics cases that are being developed in partnership with students.

In 1999, The John Templeton Foundation released a college guide titled “Colleges that Encourage Character Development” which profiled colleges with programs in leadership, volunteerism, spiritual growth, civic engagement, and other categories. The goal of the guide was to help parents and students identify colleges with strong focus on character development, “…fostering such virtues as honesty, self-control, respect, and compassion” (The John Templeton Foundation, 1999, p. 1). It provides many examples of educating for the ethical development of the person that may be useful in various settings.

Integration of Curriculum

The fourth framework for understanding a liberal arts education is that the whole person is addressed; the primary means to do this is through integration of educational instruction both in curriculum and pedagogy (Brown, 1994; Stull, 1962; Blaich, et al., 2004). The goal here is to seek integration in disciplines so as to have the student leave the institution with a well-rounded perspective of the world.
they are entering. However, knowledge itself is not the end in and of itself. Hauerwas (2005) states, “There is no such thing as a ‘liberal arts education’ in which knowledge is an end in itself” (p. 316). Instead, a liberal education is one where learners act more humanly because of their education. This requires an all-together different sort of education, one where people are held accountable and cared for and one where process becomes as important as content.

Maybe the most assertive way and commonly used method, is to integrate the liberal arts and business education through curriculum (Campbell, Heriot & Finney, 2006). In fact, a key component in a liberal arts education is a “…curriculum shared by all students. It provides broad exposure to multiple disciplines and forms the basis for developing important intellectual and civic capacities” (AAC&U, Greater Expectations, 2002, p.25). Many liberal arts college accomplish this by requiring students to complete a set of requirements of liberal education in conjunction with a set of requirements associated with a major.

Ronald Kushner (1999) performed a research study of liberal arts colleges to determine what alignment and integration could be achieved between business curriculum and liberal arts curriculum. His goal was to determine what elements of the liberal arts already exist within business curriculum.

The research suggests that even schools without business majors still had corresponding areas of curriculum present in their liberal arts education to satisfy the needs of the business education. This research demonstrates the existing correlation of liberal arts education with business education allowing for natural integration. See table 1.1.

<table>
<thead>
<tr>
<th>Department</th>
<th>Business – Related Course Offering</th>
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<tbody>
<tr>
<td>Art</td>
<td>Advertising Design</td>
</tr>
<tr>
<td>Communication</td>
<td>Advertising, Public Relations</td>
</tr>
<tr>
<td>Computer Science</td>
<td>Management Information Systems</td>
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<tr>
<td>International Affairs</td>
<td>International Business</td>
</tr>
<tr>
<td>Mathematics</td>
<td>Operations management, research</td>
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<tr>
<td>Philosophy</td>
<td>Business ethics, Business and Society.</td>
</tr>
<tr>
<td>Political Science</td>
<td>Public Administration</td>
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<tr>
<td>Psychology</td>
<td>Organizational Behavior,</td>
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<tr>
<td>Sociology</td>
<td>Organizational theory, business ethics</td>
</tr>
<tr>
<td>Religion</td>
<td>Business &amp; society, business ethics</td>
</tr>
</tbody>
</table>

(Kushner, 1999, p 435)

Kushner concludes,

Business education can be entirely consistent with the education traditions of the liberal arts. One reason such institutions may want to include business explicitly is that the typical liberal arts college curriculum already contains many courses that are viewed as important components of the modern business education (1999, p. 434).

This research suggests that existing liberal arts curriculum naturally integrates into the existing business education coursework. These results suggest there is no theoretical constraint limiting the integration of curricula. Different business programs have taken many approaches to tighten up the integration between their business education and the liberal arts.
The first is illustrated through a study conducted by Zafar and Franklin (1994) who use the University of North Dakota (UND), Minot, to model how the foreign language department can be integrated with business education. UND restructured their business curriculum to create an international business major that incorporated requirements from foreign language, the humanities, and social sciences. It should be noted that this was also done in conjunction with faculty training and classroom pedagogical changes. The conclusion here was that “liberal arts colleges such as Minot State are at additional advantage in introducing international business programs because the liberal arts tradition has commonly required foreign language coursework” (Zafar & Franklin, 1994, p. 207).

One additional means of integrating liberal arts and business education is to include history of business in the curriculum. Lears (2003) suggests, “You can give humanistic value to almost anything by teaching it historically” (p. 23).

Another example comes from Babson College. Babson, has been consistently ranked in the top tier for all its business programs, is a 1997 winner of the Pew Leadership Award, received the 2002 AAC&U recognition for its commitment to learner-centered education, and out of 300 undergraduate programs assessed by Princeton Review had the overall best rated faculty. They attribute these and other recognition to an intentional overhaul in their program, beginning in 1989, which focused on a “foundation of the liberal arts” and “connecting bridges between the liberal arts and business programs” (Cohen, 2003, p. 155). President of the school, Leonard A. Schlesinger argues that concrete business knowledge expires in five years or less whereas history and philosophy offer contextual skills and reasoning that will last a lifetime (Glenn, 2011, b).

Another example comes from Yale who in 2006 introduced curriculum offering interdisciplinary perspectives on complex problems. Yale’s School of Management is piloting a program with 55 other business schools, including Stanford, Northwestern and MIT aimed at teaching students to act upon their values at work.

Glenn (2011, a) discusses the University of Virginia ‘s business school and its efforts to develop an integrated course system in which team-taught courses make up the entire curriculum of junior year students. Papers are graded twice, once for content and once again for writing quality.

Finally The Aspen Institute is going to start ranking business schools on how well they integrate social and environmental issues into curriculums (Holland, 2009). It seems that concrete action to align the interests of business education and the liberal arts tradition are achieving admirable results at some institutions.

CONCLUSION

While the problems of the moral and ethical lapses of business professionals and organizations and the learning lapses of business students are multifaceted and cannot be solved simplistically, this paper has argued the marginalization of the liberal arts in business education is one causation. And if these lapses are due in part to the lack of liberal arts in business curriculum (Putnam & Stevens, 1991), then the integration and connection of liberal arts education to business education may begin to correct this ongoing concern.

This paper provided a context for considering the growing emphasis on professional and/or technical education, the tensions between the liberal education and professional/technical education, the historical development of the tension and finally the market forces driving this change. The paper then outlined four approaches to understanding liberal education: leadership, integrative and critical thinking, ethical development of the person, and curriculum integration. Each approach acts as a framework which can be used to consider changes to business education that incorporate liberal learning ideals into future improvements.

While this paper has provided numerous examples of programs finding unique solutions, the growing trend in technical or professional education is cause for concern and calls for more intentionality on the part of all schools to be assertive in integrating liberal arts into business education. Specifically, in light of
Delucchi’s (2009) research, it would behoove liberal arts colleges to take the lead, not only because they are well suited, but more importantly, as a matter of integrity.

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Use of Social Media in Graduate Education: An Exploratory Review for Breaking New Ground

Jay Johnson
Friends University

Jim Maddox
Friends University

The evolution of social media has been rapid and is expanding at a dizzying pace. This paper examines the use of social media in graduate education and is an exploratory review of how it is and can be used within the field. Social media are beginning to be used in various educational settings; however, the literature is lacking in terms of rigorous research conducted. An overview is provided of social media “tools” and identifies potential applications in graduate education. A framework is proposed for conducting qualitative research to further explore the potential uses/applications of the variety of social media tools.

INTRODUCTION

The purpose of this paper is to examine the use of social media in graduate education. The approach to the paper will be an exploratory review of social media and how it can be leveraged to break new ground within the field of graduate education. Social media and social networks continue to expand exponentially and at the same time are transforming itself and its users at a dizzying pace.

Within this context, the researchers will discuss how social media and social networks can play a vital role in graduate education. This role will be explored from a wide variety of perspectives, in terms of student learning, student community building, program awareness, and discipline sharing of expertise and ideas.

Background Purpose of Social Media Websites

The evolution of the social media, or social networking, websites has been rapid. In the late 1990s as the Internet became more available at higher speeds, the social media website as we know it today was in its most rudimentary version. Many believe these websites started in the online dating world, where people were matched with strangers. These websites were unilateral in that people would enter information about themselves, only to be matched to what were believed to be “friends”, or some version of “that”. Shortly after the spread of online dating, websites like Friendster.com and MySpace.com came into existence for networking. These websites weren’t the first, but they were the first ones to gain cultural popularity on the web.
How Are the Social Media Websites Currently Being Used?

While the original purpose of these dating, or “networking”, websites was to help people find significant others, it has now become a way to meet new friends and establish ties with current and old friends. This has evolved into the business world as a way to promote products, services, or even people. Today, the most popular social media websites are used as business tools, in addition to a way to learn more about your best friend from third grade’s new baby. As such, there are literally hundreds of social media websites, each trying to find their own networking niche.

Use of these social media websites vary by age, occupation, gender, race, religion, and any other demographic, psychographic, or geographic reason you can imagine. For example, Facebook, the world’s most popular social media website, aside from simple social networking is being used for advertising and recruiting in several universities. In addition, several units within a university will have Facebook pages to disperse information about events, curriculum, and even course materials. Facebook lends itself well as a very powerful learning management tool for content sharing. Given Facebook’s educational anarchist beginnings, it is somewhat ironic that universities have embraced it as a positive tool.

BRIEF REVIEW OF THE LITERATURE

While much has been written about various forms of social media and various social media websites (see The Zen of Social Media Marketing by Shama Hyder Kabani, 33Million People in the Room by Juliette Powell, and Inbound Marketing: Get Found Using Google, Social Media, and Blogs by Brian Halligan and Dharmesh Shah), the preponderance of literature has been in the popular press and there has been very little research published in academic and or professional journals. What follows is a brief overview of research related to the use of social networks and social media.

Lenox and Coleman (2010) identified the use of social networks in Libraries. The authors describe how social networks are increasingly being used to form linkages about professional library staff. Both live and virtual social networks are being used to allow sharing of ideas and collaboration on a variety of library projects. A key aspect to this usage is the opportunity to find a sense of community. Another important dimension to the use of the social networks centers around staff development and training. Libraries are at the forefront of using social media to create robust learning communities.

Another area that is leading the way in leveraging the potential of social media is the United States Air Force (Meerman Scott, 2009). The Air Force Public Affairs Agency is embracing the use of such social media tools as Blogging, Counterblogging, Twitter, and Facebook. A key leader in the effort, Capt. David Faggard (chief of emerging technology), stated that while there has been resistance to the use of such social media tools, the leadership is recognizing the power of the tools and realizes that we are on the verge of an information revolution. The reluctance to fully embrace the use of social media is not unique to the Air Force.

Dorrell (2010) in The Times Educational Supplement, cites an international study that found that language teachers are not utilizing social networking and see such technology as a threat to their classroom teaching. One concern is that the information available via the various sites does not reflect best practice. This is a valid concern as the proliferation of social media tools continues and users attempt to sift through what is most valuable and useful. This potential application of social media to classroom learning also has been applied to work place learning.

The connection between social media and work-place learning was discussed by Patel (2010) in Training and Development. The article focused on a study on the rise of social media and how the use of social media can boost organizational learning and productivity. Organizations that leverage these tools will grow as a learning organization. Also, because of the growing percentage of workers who are from the Millennial generation, organizations that embrace and exploit social media will be seen as more attractive places to work and more likely will be considered as employers of choice.

This study found that the most commonly used social media tool was a “shared workspace”. The next most common was “social networks” followed closely by “wikis”. 
In another article, Bernoff and Schadler (2010) discuss the potential use of social media to empower employees and leverage the creativity and problem solving and knowledge generation potential of all employees. The authors state that rather than trying to prevent employees from accessing social media sites at work, organizational leaders need to recognize that employees have easy access to technology and that this technology power needs to be harnessed as a strategic force to power the organization.

The researchers point out that contrary to popular beliefs, businesses use social applications more than individuals. For businesses, 95% utilize social media, while 76% of individuals use social media.

The authors describe several real organizations, such as Best Buy, Black and Decker, Aflac, and Vail Resorts, who are creatively leveraging social media to drive their organizations forward. The efforts include working with customers/resolving customer issues, training and knowledge transfer, and creative marketing. One key to successfully utilizing social media is to ensure the organization has both management support and IT backing.

While the research literature is just beginning to grow concerning the use of social media, the articles reviewed point out their growing impact and the growing use and potential impact within a variety of organizational settings, including potential uses that are relevant to graduate education.

TOOLS

A very difficult step towards developing a social media presence is gaining an understanding of the various tools available and how they work. It appears a successful social media policy considers several different tools that complement each other to establish a broad presence. Another consideration for education is to gauge how these tools impact the use of learning management systems and other software used by most educational institutions. This section will provide a brief review of a few of the most popular social media websites and address the interaction of these tools with current use of learning management systems and other educational software programs.

Facebook

Facebook is the most popular social networking website with over 500 million subscribers worldwide. Originally developed for students at Harvard, the creator has positioned and developed this once simple website into a pop culture icon. Facebook gives people the opportunity to link with other friends who have pages on the website. On these pages, members post their likes, dislikes, pictures, thoughts, or whatever else they wish. Over the years, Facebook has increased the level of security on the website, thus protecting vast amounts of personal data.

MySpace

MySpace is the second most popular social networking website in the world (Facebook is number one). The interface on MySpace is different than Facebook, but similar in purpose. Over the past couple years as Facebook passed MySpace in membership, MySpace changed their appearance and features to be more like Facebook.

Twitter

Twitter is a highly popular social networking website that is somewhat of a “microblog”. Twitter users post their thoughts, feelings, locations, actions, or whatever they desire in messages called “tweets”. These “tweets” are limited to a maximum 140 characters. Twitter differs from more comprehensive social networking sites, like Facebook or MySpace, in that Twitter is more of an ongoing conversation, rather than a repository for personal data.

LinkedIn

LinkedIn is a social networking site focused on professional business networking. The website is designed for people to use their “connections” to find new employment or provide support for current
careers. Members of LinkedIn typically maintain a professional appearance on their personal page, almost treating it as an online resume.

**YouTube**

YouTube, owned by Google, is a social media website where users share videos streaming on the internet. While YouTube is not necessarily what we now know as a traditional social networking website, it thrives on user created content. Users create accounts to share video content they create (in some way).

**FOAF**

A new technology that could eventually link these tools is called Friend of a Friend (FOAF). Google is using FOAF, and other programming languages, to develop a Social Graph Application Programming Interface (API) that will allow people to search for other people using the public information available on social media websites. Facebook has a similar search feature, but it only searches within Facebook. This new technology will enable greater networking power by users without having to join multiple networks. Such technology is another step towards a semantic web where the computers will be able to execute searches without human command. There are already plugins for integration between Moodle and Facebook and twitter.

**Classroom Tools**

**Graduate Junction**

This social networking website was developed by two graduate researchers in the United Kingdom in 2008. The purpose of the website is to link researchers in graduate school with other researchers in similar topics, industry, and other areas of interest. There are currently around 13,000 users of this website.

**Wikis**

Wikis are websites that allow users to create and develop content to be reviewed by others on the website. These websites are not necessarily social media by definition, but they are a tool being used within units to collaborate and share ideas electronically. Wikis are replacing Learning Management Systems, such as Blackboard and Moodle, in some universities and high schools. Though there are tools Wikis do not have that these systems traditionally offer, users see the benefits of the Wiki’s collaborative nature far outweighing the lack of traditional tools.

**IMPACT ON LEARNING MANAGEMENT SYSTEMS**

Social media websites seem to be slowly creeping in to the traditional markets that employ such learning management systems, such as Blackboard or Moodle. There are several reasons for this. First, social media is, in essence, free. People can login to a social media site without having to pay for a membership or access to a school’s page. Second, social media offers a greater level of collaboration in that the format is typically relatively free flowing. Third,

It is possible that social media websites could overtake Blackboard or Moodle, much in the way video rental services, such as Netflix and RedBox has overtaken Blockbuster. How these learning management systems evolve to embrace social media will determine long-term success as the social media outlets become more feature packed. Given the open source nature of learning management systems such as Moodle, there are codes being written for Moodle to work with Facebook, Twitter, and other popular social media websites.

**POTENTIAL APPLICATIONS IN GRADUATE EDUCATION**

The potential applications of the growing variety of social media tools/websites to graduate education continues to evolve and grow. What follows is a short overview of how these tools/websites can be used in the context of graduate education.
Classroom Tool

One of the main uses of social media is to give students access to curriculum. This is in the form of content knowledge, videos, slide presentations, and lectures. This can be from a wide range of sources.

Posting of assignments is also a useful application. Students can post assignments, both individually and collaboratively. Likewise, assignment can be graded by the instructor in the same manner. The various sites also facilitate collaborative learning. Communicating across distances of time and space is also made possible through the various social media applications.

Student Networking

Building communities and gaining a sense of connectedness are facilitated through effective use of social media. Students can find common interests, share learning experiences and gain a sense of community through these online connections.

Job hunting and career networking are another dimension in which graduate students are leveraging the potential of social media. Students are able to share networking contacts and potential job openings. Students share successful and unsuccessful job hunting and career strategies.

Community Expertise (within discipline)

Faculty and students can gain access to community expertise, within one’s own unique discipline, via social media. Access to subject matter experts, whether to access virtually or to establish a face-to-face relationship, is greatly enhanced via the connectivity of social media. Virtual guest speakers are also a possibility.

Professional mentors for students are able to be identified through social media tools. The mentoring relationship itself is further developed and enabled through the effective use of social media tools.

Geographic Networking

A real advantageous use for Graduate Schools, or any university entity, is the geographic networking potential for social media websites. While several major universities may have a strong identity within their geographic region, social media websites give the lesser known colleges and universities a powerful and visible voice without much expense. This is almost a grassroots campaign to bring visibility to lesser known universities without competing with major universities for mainstream media.

Mentoring

Linking students with professionals in desired fields and industries is made much more straightforward via social media. The ability to identify mentors and match them with particular students is critical and social media tools makes this process much more likely to be successful. The social media tools also facilitate the ongoing success of the mentor-mentee relationship.

Alumni Networking

Social media allows schools to connect with alumni and vice versa. The real potential however is social media’s ability to connect alumni with other alumni.

Marketing/Recruitment

Social media tools/sites have tremendous potential for reaching prospective students. The social media sites can provide value added content. Highlighting student and faculty activities and achievements via social media helps to market a school's unique attributes. The use of social media also greatly expands the geographic reach of an institution’s marketing and recruitment efforts.

Advisory Boards

Social media can connect advisory board members and serve as a value added component to volunteer service. Through social media, board members can not only contribute to the unit to which they are advising but can also connect with each other for idea and information sharing. One example of this is
a colleague who has set up a Wiki within a Moddle shell for advisory board members to share ideas and collaborate with one another.

**CHALLENGES**

As the social media websites evolve, educators seek new ways to connect with students in a positive and effective way. The open exchange offered by social media websites is very attractive to educators. Up until recently the old-school learning management systems, such as Blackboard or Moodle, did not offer the open exchange the social media websites offered. Today the traditional learning management system companies recognize the importance of this academic “freedom” and are looking at ways to implement social media into their systems. For example, Moodle has a Wiki option. In addition, given Moodle’s open source infrastructure, there are plug-ins written for integration with Facebook and Twitter.

As with every new technology, there has to be new policy. Given the open source nature of social media, to enact and enforce policy on its use seems somewhat of a contradiction of purpose. However, I think most would agree that a standard approach for the purpose of consistent communication makes sense. We ask one question to address this challenge: Who builds, maintains and updates the content?

Since the social media use has to start somewhere, this is an important question to ask. In graduate education professors and administrators are extremely busy with the task of running a quality product; however, these are the people with the most direct interest in what is said about the program. It seems obvious the professors and/or administrators should manage all content going onto a social media website, but this creates a problem. This often will result in a lack of input from the institutional marketing strategy, recruitment strategy, and image management strategy. As this will vary from university to university, it is important to address the academic and operational interests of the social media presence and designate an appropriate strategy for management. So, to answer the question of “who”, the answer is it depends.

**CONSEQUENCES**

Given the large number of social media websites available, selecting the appropriate ones to utilize is difficult. Additionally, with the advent of FOAF and other tools utilizing public information searches on the social media sites, it raises a question of longevity for the lesser known sites and recent start-ups. Considering this phenomenon is likely near the end of its growth period and entering maturity, great changes are likely to come. The nature of business is to start with only a few entities, grow into a large number of competitors, then settle into a maturity with a few competitors as long as the trend is technologically current. Regarding social media and the vast amount of information stored on the various social media sites, a funnel comes to mind. In other words, a large number of social media sites have been poured into a funnel, with only the most liquid and relevant social media sites coming out of the bottom in a single stream. While there may really never be a single stream, the social media sites will resemble a single stream with new programming codes encouraging social media public search and networking.

**RESEARCH – WHAT NOW?**

As part of this on-going investigation into the potential use of Social Media in graduate education, one of the next steps will be to conduct qualitative research to explore ideas around the following two questions:

1. How is it being used currently?
2. How could it be used going forward?

The researchers intend to hold focus groups and conduct interviews with students, alumni, faculty, and advisory boards. The information collected will further clarify the potential for the various social media tools to be used in graduate education, in a wide variety of settings.
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