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## Introduction

Welcome to this issue of the ***Business Education Innovation Journal***.

The purpose of this journal is to assemble researched and documented ideas that help drive successful learning and motivate business students to learn. The intention is to draw ideas from across both methods and disciplines and to create a refereed body of knowledge on innovation in business education. As a result, the primary audience includes business education faculty, curriculum directors, and practitioners who are dedicated to providing effective and exciting education.

We invite you to read about innovations published and apply in your classroom. We also encourage you to develop your original creative ideas, prepare an article, and submit for review.

This particular issue includes a number of interesting classroom innovations in diverse areas.

Peter J. Billington  
*Editor*

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# Technology Skill for Business Students: The Next Level

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## ABSTRACT

Most institutions of higher learning have recognized and adjusted their business curriculum to address the need for business technology skill in today's dynamic business environment. This study looks at the metamorphosis of the need for technology skill in business curriculum and the assessment of student learning by addressing some relevant questions. It specifically looks at the school's basic pedagogy relating to the area of technology, the development of technology-based courses in the curriculum over time and the reasons for changes. The overall assessment process for continuous improvement in this area is also reported. Some recommendations for future research opportunities in technology skill are proposed. The study contributes a valuable perspective on the importance of information systems education and technology skill for business students.

**Keywords:** technology skill, technology learning assessment, business technology pedagogy, technology learning outcomes.

## INTRODUCTION

At the turn of the 21<sup>st</sup> century, Taylor, Goles and Chin (2002) noted that the state and role of information systems (IS) in business organizations had increased to a level where "... researchers, educators, and practitioners have reached a general agreement that some base level of knowledge and understanding of IS concepts is mandatory for all future business professionals" (p. 42). Even further, potential employers expect some level of technology readiness from college graduates, particularly business graduates (Hansen and Hansen, 2010). Parasuaraman (2000) defines technology readiness as "people's propensity to embrace and use new technologies for accomplishing goals in home life and at work" (p. 302). In this study, we refer to technology as the concepts of information systems and of information and communication technology (ICT). Specifically, an information system is defined as "a combination of hardware, software, infrastructure and trained personnel organized to facilitate planning, control, coordination, and decision making in an organization" (BusinessDictionary); and information and communication technology (ICT) refers to the use of information systems to facilitate organizational communications.

Today, the pervasive use of information technology in business processes (and in practically all aspects of everyday living, for that matter) has pushed the required IS knowledge to a higher level as employers of business graduates expect some level of competency in information systems necessary to function in today's business environment. In response to the technology knowledge expectation, educational institutions began to revamp business school curricula (Lee, et. al, 1995; Ramakrishna, 1995; Taylor, et. al, 2000) to include relevant information technology courses. Consequently, institutions of higher learning have adjusted business curricula to address the need for business technology skill. This study adapts the definition of skill as the "ability and capacity acquired through deliberate, systematic, and sustained effort to smoothly and adaptively carryout complex activities or job functions involving ideas (cognitive skills), things (technical skills), and/or people (interpersonal skills)" (Business Dictionary). In this paper, technology skill is used in the aggregate encompassing information technology (IT) and information systems (IS) skills.

Due to the persistent business move toward globalization, the consistent invention of improved business processes and the constant changes in technology, educational institutions are mindful of adapting business curricula to provide the skills needed to function in this dynamic business environment. The purpose of this study is to examine the efforts and outcome of a school of business administration in preparing business students to acquire, specifically, the technological skill needed in today's business environment. The study reviews the school's information systems (IS) pedagogy, examines learning assessment outcomes and discusses the trends for improvement in IS education. This study contributes to literature as it provides a perspective on the relevance of IS education in today's business environment and the necessity for continuous pedagogical improvement.

Following this introduction, the first section provides the previous research and the theoretical underpinning for the study. The second section discusses the current research's background/historical perspective of technology skill in business pedagogy, assessment and results, the third section offers a discussion of the next level of IS in business education, and the last section presents the conclusion and recommendation for future research opportunities.

## PREVIOUS RESEARCH

The Bloom's Taxonomy of learning (1956) provides a theoretical structure for this study. The taxonomy has been widely analyzed and used in student learning literature (Balch and Borah, 2010; Betts, 2008; Black and Ellis, 2010; Chatzopoulou and Economides, 2010; Halawi, McCarthy and Pires, 2009; Krathwohl, 2002; Marzona and Kendall, 2007; Stivers and Phillips, 2009; Taylor, Goles and Chin, 2002; Ward, 2011). It presents three domains of learning labeled cognitive, affective, and psychomotor. The cognitive domain focuses on the acquisition and use of knowledge. The affective domain is based on the internalization of interest, attitude, and values of knowledge; and the psychomotor domain deals with physical skill. These domains are not mutually exclusive, however. The general pedagogical goal for technology knowledge in institutions of higher learning largely focuses on the cognitive domain of learning in preparing students for today's business environment. Hence, this study evaluates the results on students' technology skill from the perspective of the cognitive domain. The cognitive domain consists of six hierarchical levels of learning: 1) knowledge, 2) comprehension, 3) application, 4) analysis, 5) synthesis, and 6) evaluation. The description of each level is presented in Table 1 below.

**Table 1: Bloom's Taxonomy – Cognitive Domain**

Level	Description
1. Knowledge	Recall of information, ranging from specific facts to more general patterns and theories.
2. Comprehension	A low level of understanding what has been taught
3. Application	The use of abstraction such as general ideas or methods in particular and concrete situations.
4. Analysis	Breakdown of the material into constituent elements, relationships and interactions, then relating them to a structure which binds them together.
5. Synthesis	Combining elements into an integrated whole.
6. Evaluation	Making a judgment about the value or worth of ideas, solutions, or methods.

Source: Taylor, Goles and Chin. 2002. *Measuring Student Learning*. E-Service Journal, p.43.

In other studies, the six levels of the cognitive domain of the taxonomy have been reclassified. Imrie (1995) classifies them into two tiers with Tier 1 consisting of the first three levels of learning (knowledge, comprehension, and application), and Tier 2 consisting of the last three levels (analysis, synthesis, and evaluation). The two tiers correspond to Martin and Saljo's (1976) concepts of *surface learning* and *deep learning* respectively. Alternatively, Marzano and Kendall (2007) reinvented Bloom's Taxonomy by developing a new taxonomy. Marzano and Kendall's new taxonomy gives a modified framework of methods for acquiring and enhancing student learning. Similar to other previous versions of Bloom's Taxonomy, Marzano and Kendall's taxonomy identifies six levels of learning, which they label as retrieval, comprehension, analysis, knowledge, utilization, metacognition, and self-system thinking respectively. Most educational efforts in attaining technology skill to date have been largely focused on Tier 1, surface learning, of the cognitive domain of Bloom's taxonomy. We address the current and future states of IS education and students' technology skill in light of the cognitive domain of these taxonomies.

Literature reveals that although students may know how to surf the Internet, download music, send email, and utilize social media such as Facebook and Twitter, this ability does not necessarily translate to the critical technology knowledge and skill required for functioning in the business world (Young, 2005, ppA38). The efforts of institutions of higher learning to integrate information systems courses into the school of business pedagogy have proven to be an important step in preparing business students for the required technology skill. Hence, this study attempts to examine the state of technology education in meeting business demand for technology skill by considering the following questions: a) does the level of desired learning, as measured by Bloom's taxonomy, affect the information systems pedagogy? b) how has the assessment of learning, as required by the AACSB, influence technology education in business? and c) how has business curriculum responded to the increasing demand for technology skill?

## RESEARCH

### Methodology

A review of 1995-2011 academic bulletins of a school of business was conducted to assess the existence/development of business technology courses. In addition, the school's information systems assessment activities and results were examined. Lastly, the review and examination outcomes were synthesized, and the results are presented in the following section.

### Results

#### *Business Technology Curriculum Development*

The school of business administration in this study (henceforth referred to as SOBA) is one of the professional schools in a four-year liberal arts institution of higher learning located in the southeastern region of the United States. The Institution's mission statement includes "challenging students to acquire and develop the skills, knowledge, and values necessary for success on a dynamic global environment." (Institution Bulletin, 2011) The Institution acknowledges technology skill as an important component by supporting the development and inclusion of technology-related courses in its various academic programs, including SOBA.

The Association to Advance Collegiate Schools of Business (AACSB) International requires accredited schools of business to be mission driven, to institute learning objectives for their specific business programs, and to establish assurance of learning standards that should be used in assessing student learning (AACSB, 2012). Schools of business must meet these standards to maintain their accreditation. SOBA is AACSB accredited, and the general learning goal for technology is addressed in its mission statement as "preparing students to meet the technological demands of today's business and society." (Institution Bulletin, 2011) Hence, we examine SOBA's efforts in fulfilling its mission in the area of technology (curriculum development) and in meeting the AACSB requirement of assurance of learning (assessment process).

In the effort to address the need for students to attain technology skill, the Institution added a three-hour junior-level course titled Decision Support for Small Business in the 1995/96 academic year as a core course in the school of business. The course was designed to teach the "... use of computer applications to facilitate decision-making and support record keeping in small business environments" (Institution Bulletin, 1995). In the course, students learned to use word processing, spreadsheet and database software to analyze information to solve real-world business problems.

Since its inception, the course has gone through several modifications to keep up with the constant changes in technology and in employers' needs for technology skill. In 1997/1998 academic year, the course number was changed to a sophomore level course, the emphasis on "small business" was removed from the course description, and it became a General Education free elective. The course, while remaining a general education free elective, became a requirement for admission into the School of Business Administration program in 2002/2003 (Institution Bulletin, 2002). In 2006/2007, the course title was changed to "Introduction to Computer-Based Productivity Tools," and the description was revised to "the study of business software applications including Windows, spreadsheets, word processing, presentation graphics, and database management systems in order to provide a common foundation for an integrated study of business disciplines" (Institution Bulletin, 2006).

In addition to the computer-based productivity tools course, students acquire more technology skill in other courses such as Management Information Systems (MIS) and Accounting Information Systems (AIS) courses. Other business courses also require and encourage the use of technology and business software applications.

#### *Assessment Process and Results*

Assessment is defined as "the systematic collection, review, and use of information about educational programs undertaken for the purpose of improving student learning and development" (Palomba and Banta, 1999, p. 4). Studies on student learning present many ways of assessing technology skill, which include the use of questionnaires, objective (multiple choice) tests, standardized tests, interviews, or a combination of these methods (Black and Ellis, 2010; Chatzopoulou and Economides, 2010; Pierce, Lloyd and Solak, 2001; Rust, 2002; Stephens, 2006; Stivers and Phillips, 2009).



SOBA employs a combination of skill-based testing, objective tests, and a standardized test to measure students' technology skill. The skill-based testing is a course-embedded assessment administered as part of the Introduction to Computer-Based Productivity Tools course. In the course, students' proficiency in technology is assessed in specific software packages (Microsoft Office software – PowerPoint, Word, Excel, and Access) in a simulated environment. More importantly, the result of the assessment efforts provides insight into understanding how effective the SOBA curriculum is preparing students technologically for the real world and at the same time, revealing the areas for improvement.

Additionally, graduating business students are required to take the Educational Testing Service's test called the Major Field Achievement Test in Business (MFAT), which included technology as an assessment indicator for the first time in 2009. The inclusion of technology assessment in MFAT is yet an acknowledgement by the Education Testing Service of the importance of technological skill in business pedagogy. SOBA also administers an in-house assessment test, which incorporates embedded direct measures to assess business graduates' technology readiness. The in-house technology test instrument assesses students' technology skill on basic concepts of information technology, computer-based productivity tools (MS Office programs), information and communicating tools, and other business-related technologies (such as Radio Frequency Identification (RFID), Enterprise Resource Planning (ERP), Computer-aided software engineering (CASE), etc.).

We believe that the use of various testing measures improves the reliability of the results of the assessment of students' technology readiness for the real world needs. More importantly, the result of the assessment efforts provides some insights into understanding how effective the SOBA curriculum is in preparing students technologically for the real world and in revealing the need for pedagogical improvement.

One of the lessons SOBA learned from its assessment activities was the need to revise the technology (information systems) courses as it became clear that students did not have adequate requisite knowledge and background in technology for the upper level information systems courses. The overall results of this study reveal the need for continuous improvement of the information systems curriculum in schools of business to meet the ever-changing need for technology skill.

## **NEXT LEVEL OF INFORMATION SYSTEMS IN BUSINESS EDUCATION**

As Balch and Borah (2010) point out, the technology concepts considered state-of-the-art today may be obsolete tomorrow and the newest concepts are not always the best; and furthermore, "a promising innovation may turn out to be a flash in the pan" (p. 121). As a result, the dynamism of business and technology has led employers to require a high level of skill in critical thinking and problem-solving. Hansen and Hansen of Quintessential Careers (retrieved in 2010) report analytical/research skill, computer/technical literacy and problem-solving/reasoning/creativity are among the skills most sought after by employers. While progress has been made in addressing the need for technology skill, the constant changes in technology innovation have made the goal of students' attainment of appropriate and sufficient technology skill a moving target.

In keeping up with the changes in technology, employers of business graduates now require more than surface learning (Tier 1); they expect new hires to have the ability to analyze, synthesize and evaluate business information for decision making. Hence, the expectation for higher-level technology skill requires educational institutions to adjust the business curriculum to emphasize the deep learning (Tier 2) or the last three levels of Bloom's taxonomy cognitive domain in Table 1.

As a result, the need for continuous improvement on the part of business schools is warranted. Continuous improvement is the concept of ongoing efforts by business organizations to improve processes, product and services to attain efficiency and effectiveness, as well as maintaining a desired level customer satisfaction. Being cognizant of the shift in technology skill requirement and the insights garnered from the technology assessment efforts, SOBA has recently revised and restructured some of its technology/technology-embedded courses and their contents in the business curriculum to ensure that students acquire the necessary technological skills needed to function in the today's business world.

Consequently, due to the demand for technology skill beyond *surface learning* (Tier 1), SOBA has made changes to some of its business courses. Firstly, in 2010, the learning objectives and contents of the sophomore-level

Introduction to Computer-based Productivity Tools course were revised to allow for an in-depth coverage of computer-based productivity tools. While it remained a sophomore-level course, its title changed to Business Application Software (BAS) in 2011. The objective of the revised course is to provide more than proficiency by “enhancing knowledge, skills and abilities relating to the Microsoft Office Systems” for a common foundation for an integrated study of business disciplines. (Institution Bulletin, 2011) The design of the course places emphasis on word processing and spreadsheet (Word and Excel) programs to allow students to obtain *deep learning* (Tier 2) by using the programs not only to process but to analyze, synthesize and evaluate business information. As part of the course, students are encouraged to attain Microsoft Certification in the Excel program.

Secondly, the contents and learning objectives of the junior-level Management Information Systems (MIS) course were expanded in 2011 to include an in-depth coverage of the database system, Microsoft Access. The objective of the database system coverage is to teach students to develop databases and use database management systems to collect, organize, store and transfer information used to solve business problems and make informed business decisions.

Thirdly, the learning objectives and contents of some other courses such as Accounting Information Systems (AIS), e-Business Management, and Production/Operations Management are being revised to address the current need for higher-level technology skill. Remaining unchanged after the curriculum revision was the requirement for all business students to take the BAS course. However, a change was made regarding the MIS and AIS courses. Before, business students with concentrations other than accounting were required to take the MIS course; students with concentration in accounting were required to take the Accounting Information Systems (AIS) course. But, because of students’ inadequate background and limited training in technology, accounting students struggled in the AIS course. Consequently, the changes in BAS and MIS provide a means for accounting students to obtain the necessary technology knowledge before taking the AIS course. Hence, the MIS course is now a prerequisite for the AIS course. Accordingly, upon the graduation of the last group of students under the old curriculum bulletin, the learning objectives and design of the AIS course are to be revised to foster *deep learning* objectives.

Lastly, with the technology-related curriculum changes, the in-house assessment instrument will have to be modified to require that students use technological tools to analyze, synthesize, and evaluate information given in questions, scenarios, and situations and then to provide appropriate responses.

## CONCLUSION

As demonstrated in the case of the school of business in this study, establishing learning objectives, instituting appropriate teaching methods, and incorporating learning assessment measures are germane to preparing students to acquire the needed functional technology skill for today’s business environment and society at large. It is further demonstrated that incorporating and implementing learning assessment measures provide information that reveals the importance of continuous improvement in student learning. As revealed in the case of the school of business in this study, the metamorphosis of business technology curriculum provides answers (in the affirmative) to the questions in the study that: a) the higher level of desired learning, as measured by Bloom’s taxonomy (Tier 2), b) the assessment of learning required by the AACSB and c) the modifications to technology curriculum over the years to meet the increasing demand for technology skill have influenced technology education in business.

While this study examines the efforts and accomplishments of one institution in addressing the technology readiness of its business students, the results of the study prove to be an important step in understanding the need for institutions of higher learning to aspire to meet the needs of the potential employers of their graduates. Future research efforts should endeavor to expand similar studies to include more institutions of different sizes and from various regions of the country.

Secondly, in light of the constant advancement in technology and the importance of continuous improvement, future studies should seek to answer the question of how well schools of business and their graduates are meeting the requirement for technology skill from the employer’s perspective.

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# Teaching Leadership and Strategy

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## ABSTRACT

Modern academic links between leadership and strategy were forged in the early 1960s with the heightened application of strategy to business planning. These links were soon dissolved by the strategy consultants who came to dominate the field of business strategy in the mid-1960s. The consultants dismissed the role of leadership in strategic planning in favor of objective analyses of the external environment that eliminated any need for leadership skills, judgment, values, or intuition. Failures to implement strategy in the 1980s led to limited roles for leaders in implementing strategies they had no role in creating, but the gulf between leadership and strategy has steadily widened.

This paper traces the consequences of this widening gulf for teaching leadership and strategy in the classroom. It explores how an integrated approach to teaching leadership and strategy would better prepare today's students for the challenges they will face as future business leaders.

**Keywords:** leadership, strategy, management, globalization

## INTRODUCTION

In her recent book, *The Strategist: Be the Leader Your Business Needs*, Cynthia Montgomery writes: "Leadership and strategy are inseparable" (2012, p.12). But, "These two aspects of what leaders do, once tightly linked, have grown apart" (2012, p.12). She argues that "... strategy and leadership must be reunited at the highest level of an organization. All leaders. . . must accept and own strategy as the heart of their responsibilities (2012, p.13)."

Strategy is as old as human conflict. It has been at the center of military thought and action for thousands of years (Hart, 1967; Musashi, 1645; Sun Tzu, 500 BCE; and von Clausewitz, 1832), but its application to business dates only to the 1960s. Similarly, the study of leadership has ancient roots in Egyptian rulers (Ptah-Hotep, 2880 BCE), Greek heroes (Homer, 800 BCE), Chinese Generals, (Sun Tzu, 500 BCE), Persian Kings (Xenophon, 375 BCE), and Italian princes (Machiavelli, 1513) but it has been the subject of academic study only the past eighty years.

Modern academic links between leadership and strategy were forged in the early 1960s in the seminal works of Barnard (1938), Drucker (1946), Ansoff (1965), Andrews (1971), and Mintzberg (1973). Unfortunately, these links were largely dissolved by the strategy consultants who came to dominate the field in the mid-1960s (Montgomery, 2012, p.3; Kiechel, 2011, p.137). The consultants dismissed the role of leadership in strategic planning in favor of formulistic approaches to strategy that eliminated any need for leadership skills, judgment, values, or intuition (Kiechel, 2011, p. 140). Failures to implement strategy in the 1980s led to some limited roles for leaders in implementing strategies they had no role in creating, but the gulf between leadership and strategy has steadily widened.

This paper traces the consequences of this widening gulf for teaching leadership and strategy in the classroom. Most importantly, the paper explores how an integrated approach to teaching leadership and strategy would better prepare today's students for the challenges they will face as future leaders.

## STRATEGY

Practicing executives such as Alfred Sloan at General Motors had demonstrated the need for strategic planning in the 1920s (Sloan, 1963). But, the formal study of the management functions underlying both leadership and strategy begins in earnest with Chester Barnard's *The Functions of the Executive* (1938) that identifies the key functions that place an organization's leadership at the center of strategic decision making. Peter Drucker, who claims to have written the first book on strategy in 1964 (Kiechel, 2010) also emphasized leadership's role in strategy, identifying three critical functions for leaders that remain the core of strategic planning today: Formulate the strategy; implement the strategy; and monitor results and make course corrections (1973).

*Igor Ansoff (1965)*, considered the father of planning (Mintzberg, 1994), also placed leadership at the center of strategic decision making. Strategy might be affected, influenced, and in some cases constrained by external conditions, but in the end, it is the product of management decision making.

For Kenneth Andrews (1971), who taught the pioneering business policy capstone course at the Harvard Business School, strategic planning provided the needed unifying concept that integrated the critical managerial functions identified by Barnard, Drucker, Ansoff, and others who comprised the managerial school of strategy that emphasized the critical roles leadership plays in formulating and implementing strategy. Andrews explicitly recognized the leader's role in both formulating and implementing strategy, and the skills needed to accomplish each (1971). Formulating strategy requires analytical and conceptual skills, implementing strategy requires administrative and interpersonal skills, and both require judgment because of the uncertainty inherent in strategic decision making. Andrews also maintained that the personal values of leaders play a major role in formulating strategy:

The determination of strategy also requires consideration of what alternatives are preferred by the chief executive and perhaps by his or her immediate associates as well, quite apart from economic considerations. Personal values, aspirations, and ideals do, and in our judgment quite properly should, influence the final choice of purposes. Thus what the executives of a company want to do must be brought into the strategic decision (1980, pp. 25-26).

Finally, Andrews observed that in addition to formulating and implementing strategy, leaders can have important indirect impacts on strategy through their personal leadership behavior:

... executives do not affect their organizations only through their strategic choices. They also have impact through their influence over others, who in turn put forth effort and make choices affecting the organization's performance. Thus it is important that our conception of executive activity...extends beyond the realm of 'Strategic Choice,' to include 'executive behaviors'...the daily actions of executives, particularly in how they interact with others, can have a major effect on organizational functioning and performance (Finkelstein et al., 2009, p.72).

The leader for Andrews is thus both the chief architect and chief implementer of strategy. He is also the heart of the organization: "Though the spotlight of fashion today falls upon the business application of advanced research in the social science and in mathematical decisions making, we can borrow from Emerson and say that a corporation is essentially the lengthened shadow of a man" (1971, p. 238).

## **THE GREAT DIVERGENCE**

The practice of business strategy became dominated by strategic planning consultants in the mid-1960s, who, unlike Barnard, Mintzberg, Drucker, Ansoff, Andrews, and others, greatly discounted, if not totally dismissed, the role of leadership in formulating and implementing strategy.

The Boston Consulting Group (BCG) established by Bruce Henderson in 1963 became the leading proponent of the structural school of strategy (Kiechel, 2010) that cast aside leadership in favor of objective analyses of industry structure that would identify the optimal strategy dictated by external market conditions. The consultants developed a number of planning tools, concepts and techniques (e.g., the experience curve, growth-share matrices, forces of competition, value chains, and portfolio analysis) that firms eagerly applied to formulate strategies for their organizations based on the structure of the industry in which they competed. Henderson maintained that "...good strategy must be based primarily on logic, not...on experience derived from intuition" (Henderson, 1984, p.10). Implementation was ignored, or assumed to require no more than standard operating management.

The experience curve BCG developed launched the structural school of strategic planning, and proved to be the single most important strategic planning concept ever developed (Kiechel, 2010). The experience curve purported to show that the unit cost of a product declines as experience in making it increases – a learning by doing phenomenon (Kiechel, 2010). Despite its significant shortcomings, (e.g., modifications to the product or new technologies could render past experience irrelevant) it became wildly popular across corporate America as the basis for formulating strategy.

BCG developed another wildly successful strategic planning tool in the late 1960s derived from the experience curve - the growth-share matrix. The growth-share matrix became the most popular planning tool over the next ten years with 45% of Fortune 500, and 36% of Fortune 1,000 firms using some form of the matrix (Kiechel, 2010).

The growth-share matrix plotted market growth on the vertical axis, and market share on the horizontal axis. The rate of market growth indicated the company's sources of and needs for cash – businesses in slow growing markets generated the cash needed by businesses competing in rapidly growing markets. Market share (relative to the next largest competitor) determined competitive position - higher share meant higher production that translated into lower cost via the experience curve.

A company's businesses (strategic business units) were placed in one of the four quadrants in the matrix, star (low cost position in high growth market), cash cow (low cost position in low growth market), dog (high cost position in low growth market), or question mark (high cost position in high growth market), with clear strategic implications for each business, and for overall corporate strategy. The excess cash from cows is used to fund the growth of star businesses. Investments had to be made in question marks to turn them into future stars, or the question marks had to be harvested. Dogs had to be divested. Jack Welch's business strategy at General Electric, focused on growth and requiring all business units to be number one or two in their markets, was a hugely successful application of the growth-share matrix (Kiechel, 2010).

Michael Porter (1980) has arguably exerted more influence over strategic planning than any other student of strategy over the past fifty years. His most important contribution to planning was adapting the economists' structure-conduct-performance model (SCP) developed by Edward Mason (1949) and Joe Bain (1956) to assist with economic policy making to the challenges facing strategic planners. He bridged the gap between economics and business by turning industrial organization on its head (Kiechel, 2010). Where economists were interested in the implications of industry structure for public policy, and in minimizing excess profits, Porter was interested in the implications of industry structure for business strategy, and in maximizing profits.

The SCP model posits that the structure of the industry determines how vigorously firms compete (conduct) in, for example, setting prices, with more vigorous competition leading to lower profits (performance). The five forces of competition in the Porter model (1980), threat of new entrants, the bargaining power of buyers and suppliers, substitute products, and competition among existing rivals, mirror industry structure in the SCP model. Competition is vigorous, and the prospects for superior profits poor in industries where the five forces are strong. Such industries are best avoided. Strategies for more attractive industries are dictated by the five forces: take preemptive actions to discourage new firms from entering the industry; reduce reliance on strong buyers and suppliers; and differentiate products to diminish threats from substitute products.

The most biting criticism leveled against Porter and the structuralist school was simply: "Where are the people in a Michael Porter strategy?" (Kiechel, 2010, p. 7). Porter and the structuralists did not, perhaps, dismiss the role of leadership in strategy to the extent economists did in the SCP model where homo economicus was limited to equating costs and revenues at the margin, but management's role was limited to the "standard good operating management" Henderson assumed every company had (Kiechel, 2010, p. 140). In stark contrast, Andrews concluded that "One of the principal impediments to effective implementation of plans is a shortage of management ...." (1971, p. 220).

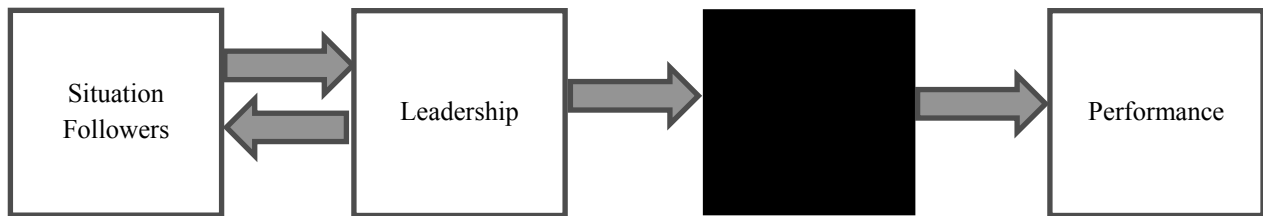
Denied any substantive role in the formulation and implementation of strategy by the consultants, leadership proceeded down new paths, carving out what would become its exclusive domains as illustrated by one typical textbook definition of leadership as "... the process of influencing an organized group toward accomplishing its goals" (Hughes et al. 2009, p. 24). The emphases on process and influence capture much that is emphasized in the leadership class, but this definition, like most others, reflects the clear separation of leadership from strategy with its failure to acknowledge either formulating or implementing strategy - the core responsibilities of leadership.

## AN INTEGRATED APPROACH TO TEACHING LEADERSHIP AND STRATEGY

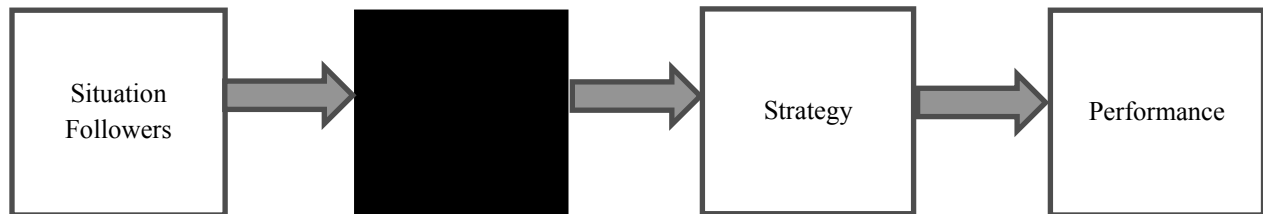
Leadership and strategy were fully integrated in practice and in the classroom in the mid-1960s. Students mastered the analytical and interpersonal skills leaders need to formulate and implement strategy. However, the gulf between leadership and strategy that opened up in the mid-1960s has steadily widened as the two disciplines have proceeded down divergent paths, expanded their exclusive domains, and responded to the challenges of globalization.

The separation of leadership and strategy manifests itself in the classroom where each focuses on its exclusive domain – there is no or minimal strategy in the leadership class, and no or minimal leadership in the strategy class. Critical functions, interactions, and much that is essential to both leadership and strategy are concealed in the black boxes substituting for strategy and leadership in Figures 1 and 2.

**Figure 1: The Impacts of the Situation/Followers on Leadership and Performance**



**Figure 2: The Impacts of the Situation/Followers on Strategy and Performance**



Students in the leadership class are taught that the situation/followers affect leadership, how to adapt their behavior to the demands of the situation, and how to motivate their followers. However, as shown in Figure 1, the formulation and implementation of strategy for which they are responsible is replaced with a black box. Without strategy, the study of leadership is vacuous. Absent strategy, the leader has no basis for determining how to respond to the situation, how to adapt her behavior to the needs of her followers, or how or for what purposes to motivate followers. Strategy provides the needed polestar for determining appropriate leadership responses to the situation/followers.

The lack of empirical evidence supporting the effects of leadership on organizational performance is also largely the consequence of substituting a black box for strategy in Figure 1. Without strategy, the leader cannot know if her leadership has positive, neutral, or negative effects on organizational performance. The effects of leadership on performance are limited to its indirect effects on followers that, like personal leadership behavior in the Andrews (1971) model, are simply assumed to have generally positive effects on performance; the critical direct impacts of leadership on formulating and implementing strategy are ignored.

Students in the strategy class are taught that the situation (e.g., industry structure) dictates the strategy. The leadership that formulates and implements that strategy is absent in Figure 2. Absent leadership, however, there is no mechanism for formulating a strategic response to the situation that encompasses corporate vision, objectives, values, skills, core competencies, and leadership experience, insight, intuition, judgment, values and preferences. These and other factors that affect strategy, and the impacts of uncertainty, ambiguity, risks, and conflict on strategic

decision making are concealed in the black box substituting for leadership in Figure 2. The strategy simply appears deus ex machina.

The integrated approach to teaching leadership and strategy requires the leadership class to explicitly examine the leader's responsibilities for formulating and implementing strategy, and develop the analytical, interpersonal, and decision-making skills leaders need to perform these core functions. It must replace the black box separating leadership and organizational performance with the strategy the leadership develops to achieve the organization's goals. The strategy class needs to explicitly examine how leadership affects the development, choice, and implementation of strategy, replacing the black box separating the situation and strategy with the leadership responsible for formulating and implementing that strategy.

Figure 3 illustrates the integrated approach to teaching leadership and strategy that is necessary to prepare today's students for the leadership challenges they will face in the 21<sup>st</sup> Century global economy. The comprehensive integrated model for teaching leadership and strategy encompasses the direct, indirect, and mediating interactions among the situation/followers, leadership, strategy, and performance. Students need to grasp the full scope of these numerous, complex interactions to understand their roles, functions and responsibilities as future leaders, and the full consequences of their actions. They need to understand the whole beast before tugging on its tail or pulling on its tusks.

**Figure 3: An Integrated Approach to Teaching Leadership and Strategy**

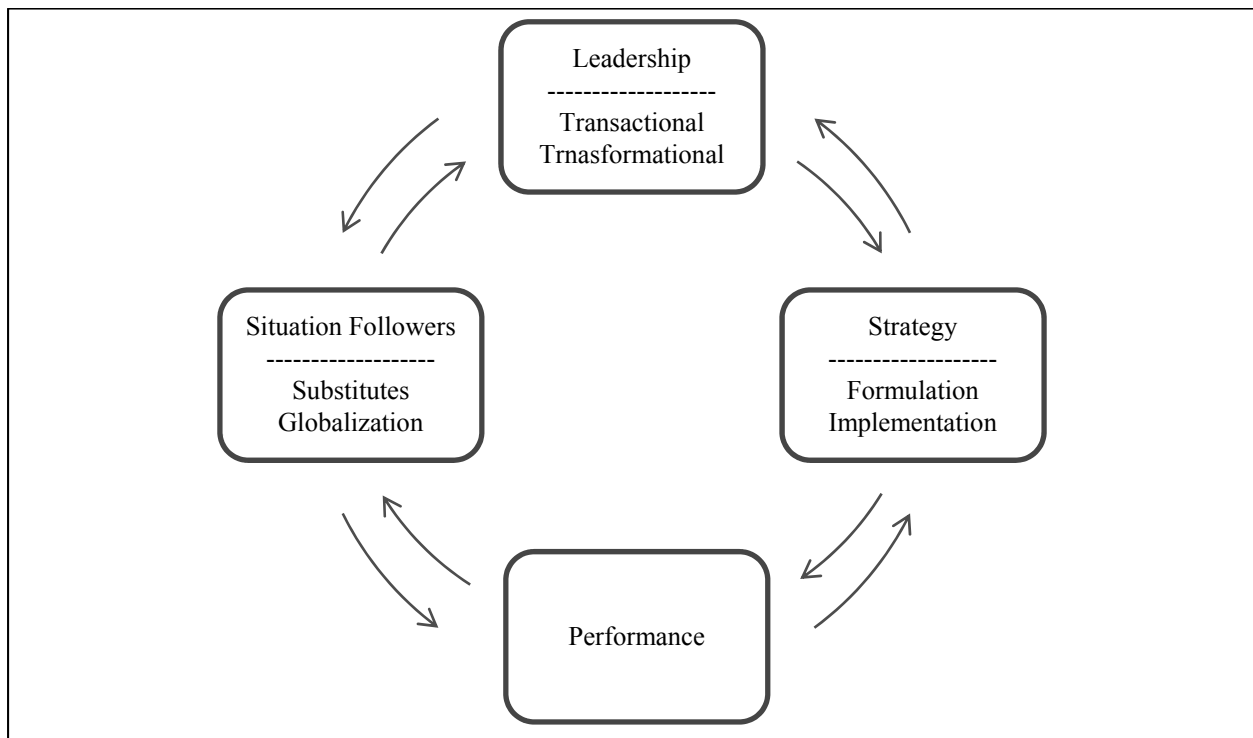


Figure 3 illuminates the direct effects (clockwise) of the situation (external environment) and followers (core competencies) on leadership; shows how leadership mediates the effects of the situation/followers on strategy formulation and implementation; the direct effects of strategy on organizational performance; and, finally, the impacts of performance on the initial situation and followers.

Figure 3 also shows the indirect effects (counter clockwise) of leadership on followers, how these effects on followers mediate leadership's indirect impacts on performance as emphasized by Andrews (1971), and the indirect effects of performance on strategy, essentially by changing the initial situation. Finally, the loop is closed in Figure 3 with the indirect effects of strategy on leadership. One can argue that leadership affects strategy or not, but strategy does affect leadership through its effects on the selection of leaders whose experience, traits, and skills are compatible with the organization's strategy: "Over time, a reinforcing spiral probably occurs: managers select



strategies that mirror their beliefs and preferences; successors are selected according to how much their qualities fit the strategy, and so on” (Finkelstein, et al., 2009, p. 115). Strategy also indirectly affects leadership through its impacts on performance and the situation. Closing the loop in Figure 3 thus yields valuable insights into how leadership and strategy evolve over time, and coalesce within an organization.

## **ALTERNATIVE LEADERSHIP THEORIES**

The integrated approach to teaching leadership and strategy enables the student to grasp the fundamental responsibilities of leadership for formulating and implementing strategy, and manage the multiple interactions among the situation, leadership, strategy, and performance. It also enables alternative theories of leadership and strategy to be treated as core concepts instead of tangential factors of little value to future leaders. Within the integrated approach, alternative theories such as substitutes for leadership and planning, transformational leadership, and globalization among others can readily be treated as integral components of leadership and strategy that hold valuable lessons for future leaders.

### **Substitutes for Leadership and Planning**

Leadership is not always essential. Rules, routines, employee experience and skills, and organizational culture can sometimes substitute for leadership (Kerr and Jermier, 1978). Similarly, formal planning is not always necessary. Mintzberg maintains that strategy can ‘emerge’ from past actions, learning, and intuition outside the formal planning process (Mintzberg, 1994), and that strategies grow “... like weeds in a garden, they are not cultivated like tomatoes in a hothouse” (Mintzberg, 1989, p. 214). He explains: “Organizations engage in formal planning, not to create strategies but to program the strategies they already have, that is, to elaborate and operationalize their consequences formally” (Mintzberg, 1994, p. 333).

These substitutes for leadership and planning are readily captured in the integrated approach to leadership and strategy in Figure 3 as components of the situation/followers that directly affect the roles, functions, tasks, and responsibilities of leaders. The integrated approach shows how leaders interact with these informal processes to mediate their impacts on the formulation and implementation of strategy. It also shows the indirect effects of leadership on these informal processes as leaders adapt to the impacts of these substitutes on their roles and responsibilities.

### **Transformational Leadership**

Transformational leadership is distinguished by extraordinary relationships between a (charismatic) leader and followers that lead to superior performance e.g., turning around a failing company. Charisma is not a personality trait per se, but a relationship between leaders and followers attributable in large measure to the leader’s personal behavior. In contrast to transactional leadership that relies on clearly defined tasks, rewards, and punishments to motivate followers (e.g., exchange and path-goal theories), transformational leadership is built on mutual trust, devotion, reverence and loyalty; goals that supersede self-interest; a compelling vision typically with high moral content; and exemplary personal behavior (sacrifice) by the leader that inspires subordinates (Bass, 1985; Hughes et al., 2009).

Transformational leadership can have powerful impacts on organizational performance (Finkelstein et al., 2009). But, without an integrated approach to leadership and strategy, the tangential effects of transformational leadership on performance are, like Andrews’ personal leadership behavior (1971), limited to general indirect effects via inspired followers. However, transformational leaders, no less than transactional leaders, are responsible for formulating and implementing strategy. In the integrated approach in Figure 3, transformational leadership affects performance through its direct effects on strategy as well as through its indirect effects on followers. Leaders purposely utilize their extraordinary influence over followers to more effectively create and implement strategy.

### **Globalization**

Globalization has added new dimensions to strategy and leadership; made both more complex; raised new challenges to both the structural and managerial schools; and widened the gap between leadership and strategy. It has dramatic effects on the situation (e.g., industry structure) and followers (e.g., multi-cultural work forces) that impact the leadership that mediates the effects of the (global) situation on (global) strategy. It is thus essential to capture the direct impacts of globalization on leadership and ultimately strategy as shown in Figure 3. The daunting challenges of adapting leadership style and behavior to the global situation, and to the needs of global followers are also captured in the indirect effects of leadership on the situation/followers in Figure 3.

Globalization creates the classic ‘weak’ situation where the quantity, variability, uncertainty, and ambiguity of information from around the globe test the limits of both the structural and managerial approaches to strategy. Structuralists search for more sophisticated planning tools that can cope with the heightened variability in the global, external environment, and develop new global strategies for entering and competing in foreign markets. The managerial school emphasizes the leadership traits, behaviors, competencies, skills, and ‘global mindsets’ essential to strategic decision making in these ‘weak’ situations (Mendenhall, 2013). The integrated approach to teaching leadership and strategy readily accommodates the responses of both schools to the challenges of globalization with (global) leadership mediating the impacts of the (global) situation on the (global) strategy.

The structural school cannot develop new global strategies in response to globalization absent the strategic decision-making skills and ‘global mindsets’ that, more than any other factor, distinguish successful from unsuccessful companies, in these ‘weak’ situations. The managerial school cannot respond to the challenges of globalization or develop the needed mindsets without the context provided by global strategy.

## CONCLUSIONS

Leadership and strategy developed together thousands of years ago to meet basic human needs. Early academic studies preserved this natural alliance. The estrangement began in the mid-1960s with the appearance of the strategy consultants who minimized, if not eliminated, the role of leadership in formulating and implementing strategy in favor of mechanically identifying optimal strategies based on objective analyses of the external environment.

Failures in implementing strategy in the 1980s led to new roles for executives as leaders, but not as strategists. As leaders, they assumed some responsibilities for implementing strategies they had no role in formulating.

The resulting separation of leadership and strategy in the classroom conceals critical interactions among leadership and strategy in black boxes that are of no instructional value. These black boxes are pried open in the integrated model of leadership and strategy in Figure 3 to reveal the continuous interplay of direct, indirect, and mediating effects among the situation, leadership, strategy and organizational performance.

The ultimate consequence of the separation of leadership and strategy in the classroom is that students are not adequately prepared to be effective leaders. They do not understand their primary leadership responsibilities for strategy development and implementation; how to determine appropriate leadership responses to different situations/followers: when or how to apply the leadership concepts, principles, and skills they have learned; or even how to assess the effectiveness of their leadership on organizational performance. It is thus essential to integrate the teaching of leadership and strategy to more effectively prepare students for the responsibilities they will assume as future leaders by clarifying their core leadership functions and responsibilities; arming them with the analytical and interpersonal skills needed to meet these responsibilities; and providing the strategic context for effectively applying these skills to achieve organizational goals.

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# Ratio-Analysis Challenges Resulting from Retailers' Outsourcing of Their Credit-Card Operations

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## ABSTRACT

This case examines how a retailer's accounts receivable amounts and its days' sales in accounts receivable (DSAR) are affected by the firm's choice of whether to maintain the administration of its credit-card operation in-house or outsource it to a financial institution. The growing trend toward outsourcing of credit-card operations creates major challenges for analysts as they attempt to make intra- and inter-firm comparisons of retailers' using the DSAR metric. The Teaching Note includes questions that can be addressed using the case-specific information, but also contains questions that give students the opportunity to research actual retailers' SEC 10-K filings to calculate DSARs and discover whether their store credit cards are administered in-house or by a financial institution. The case is appropriate for use in intermediate accounting and introductory financial accounting for MBAs as well as courses in financial statement analysis and financial management.

**Keywords:** Accounts receivable, trade receivables, retailers, ratio analysis, liquidity analysis, working capital management, credit-card sales, credit-card operations, Macy's, Nordstrom, Office Depot, OfficeMax, Staples

## INTRODUCTION

Jill Carter and Bob Murray had known each other since meeting in college. Both were recent business-school graduates who worked as financial analysts at a Chicago firm. They recently traveled to a nearby shopping mall in hopes that Jill would find a certain pair of UGG boots in stock at Nordstrom. While at the mall, Bob thought he would purchase a Calvin Klein wool car coat that was on sale at Macy's.

## A NATION OF CREDIT CARDS

When they met up after making their respective purchases, Bob remarked that it had taken him longer than expected to check out at Macy's because the person in front of him was paying by check. He noted that the sales associate seemed unaccustomed to dealing with anyone not using a credit card. Jill agreed that the great majority of customers at Nordstrom also were using credit cards to make their purchases. "For the sake of Macy's and Nordstrom," Jill stated, "I hope they are able to collect on all of these receivables within a reasonable period of time."

A few days later, Jill and Bob got together at a nearby Starbucks. As they were ordering their favorite beverages, they noted that similar to the situation at the two department stores, credit cards were being used by most Starbucks customers to make their purchases. Remembering their discussion at the mall, Jill suggested that they calculate the days' sales in accounts receivable ratio (DSAR) for Macy's and Nordstrom to see how long it takes for those retailers to collect on their receivables. "A good idea," Bob responded, "especially since most of these retailers' customers charge their purchases."

## CALCULATING DAYS' SALES IN ACCOUNTS RECEIVABLE

Accessing the SEC's EDGAR database on their iPhones, Bob and Jill gathered the following for the two retailers' for the fiscal year ending February 2, 2013 (Macy's 2013; Nordstrom, 2013):

	<u>Macy's</u>	<u>Nordstrom</u>
Net sales	\$27,686,000,000	\$11,762,000,000
Average accounts receivable	369,500,000	2,008,000,000*

\*(In those instances where the firm disclosed the existence of noncustomer receivables, we excluded them even though their amount was often immaterial.)

Even before calculating the DSAR, Jill knew that the ratio findings would prove interesting. “It’s surprising that Nordstrom had more than five times the average accounts receivable of Macy’s despite having net sales that were 58% lower than Macy’s.” “Put another way,” Bob noted, “average accounts receivables were 17.1% of net sales at Nordstrom but a miniscule 1.3% at Macy’s.”

Bob and Jill recalled that their accounting instructor had introduced them to a short-cut method of calculating days’ sales in accounts receivable (or average collection period). Instead of computing a receivables turnover and then dividing that into 365 days, the ratio could be calculated as follows:

$$\text{Days' Sales in Accounts Receivable (DSAR)} = \frac{\text{Average Accounts Receivable}}{\text{Net Sales} / 365}$$

Using the above formula, Bob and Jill came up with DSARs for the two retailers:

	<u>Macy’s</u>	<u>Nordstrom</u>
DSAR	4.9 days	62.3 days

As Jill had predicted, she and Bob were surprised by the very low DSAR for Macy’s and the sizable (57-day) difference between the two department stores. Bob suggested that they re-check the EDGAR data for Macy’s and then recalculate the ratio. Unfortunately, this step did not resolve their dilemma as they determined that the data initially used and the DSAR calculation that they had made were accurate.

## SEARCHING FOR EXPLANATIONS

Given that their math was correct, Jill and Bob were left to ponder what explanation(s) there could be for the very low DSAR at Macy’s and the large difference in that ratio between the two department stores. “Bob,” Jill stated, “you did say you observed that almost everyone was using a charge card to make purchases at Macy’s, didn’t you?” “Yes,” Bob confirmed, “so the low DSAR at Macy’s cannot be due to their customers all paying by check.” “This is very puzzling,” Jill observed, “because I refuse to believe that Macy’s collection department would be willing or able to coerce the firm’s charge customers into paying off their credit-card balances within five days of their purchases.”

“What about debit cards?” Bob inquired. “A good thought, Bob, but it’s not likely to explain the differences we found because we did not observe much use of debit cards and, even if such cards were used frequently, that would be occurring at both Macy’s and Nordstrom,” Jill noted.

“Are there any differences in the types of credit cards accepted at Macy’s vs. Nordstrom?” Jill wondered. “Not really,” Bob stated, adding that he knew that each store accepted its own store credit card (e.g., the Macy’s credit card), its own co-branded credit card (e.g., the Nordstrom VISA card), and all other co-branded cards (e.g., the Best Buy MasterCard).

“We’d have to be crazy to believe that Macy’s accounts receivable just vanished,” Bob expressed in frustration. “We’re not crazy, Bob,” Jill replied. “Many Macy’s customers charged their purchases just as the Nordstrom customers did and one thing we know for sure is that for every payable there *must* be a receivable somewhere,” she stated.

Having considered and dismissed a number of possible reasons for the very low DSAR at Macy’s and the sizable difference in that ratio for Macy’s vs. Nordstrom, Jill and Bob acknowledged to each other that there might be some explanatory factor or factors that continued to elude them.

“You know, Jill,” Bob noted, “perhaps I found a clue in Macy’s (then called Federated Department Stores) 10-K for fiscal 2006.” “How could that help us?” Jill responded in a suspicious tone. “I’m not sure,” Bob responded, “but in reading that 10-K, I noted that Federated’s accounts receivable plummeted by over \$2 billion, or 80%, during that year (Federated, 2007). If we could find out why this occurred it might help us understand how a retailer can come to report a very low accounts receivable balance.”

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# **Teaching Note:**

## **Ratio-Analysis Challenges Resulting from Retailers' Outsourcing of Their Credit-Card Operations**

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### **CASE SYNOPSIS**

This case provides a basis for lively discussion and in-depth analysis of the accounting for credit card sales. In the context of analyzing working capital or liquidity issues in accounting and finance, students are typically introduced to the use of the days' sales in accounts receivable ratio (DSAR). While this ratio is often characterized as a measure of how long customers are taking to settle their obligations, this case will illustrate instead that DSAR increasing reflects the timing of electronic-fund transfers from banks. This case presents financial-statement data comparing two well-known apparel retailers, Macy's and Nordstrom. The two analysts in the case observe widespread use of credit cards by customers when purchasing goods at those department stores. Anticipating that each retailer would be showing large balances for accounts receivable on their books, they wonder how long it is taking those firms to collect from their charge customers. To satisfy their curiosity, they calculate DSAR and are surprised to discover that Macy's customers appear to be settling their obligations in less than five days, compared to sixty-two days for Nordstrom's customers. Refusing to believe that Macy's charge customers would pay off their accounts within so few days and unable to explain why the DSAR should be so different for Macy's vs. Nordstrom, they search for possible explanations. This case is appropriate for intermediate accounting, financial management, introductory financial accounting for MBAs, and financial statement analysis. Using document filings with the Securities and Exchange Commission (SEC), students can review the financial statements and disclosures for Macy's, Nordstrom, Office Depot, OfficeMax, and Staples. This case can be taught in 60 to 90 minutes of class time and is expected to require approximately 90 minutes of outside preparation by students. The case has technical, analytical, and research aspects. Utilizing this case may enhance students' communications skills.

### **OVERVIEW**

For viability, a firm must successfully manage the components of working capital (accounts receivable, inventory, and accounts payable). The efficiency of working capital management is often studied when analyzing retailers (Ammons & Gosman, 2012; Gombola & Ketz, 1983; Gosman & Ammons, 2012; Gosman & Kohlbeck, 2005; Kapitall, 2012; Kapitall, 2011). Working capital efficiencies allow retailers to reduce financing costs and increase funds that can be used for store expansion plans or other purposes. While many studies have analyzed financial ratios such as days' sales in accounts receivable (DSAR) as part of working capital management, they have not addressed the evolving credit card landscape of retailers and how this affects an analysis of that ratio and associated receivables levels. This case highlights the care that needs to be taken when inferring what insights the ratio of days' sales in accounts receivable is conveying. Further, this case clarifies how this credit card landscape drives differences in receivables ratios (and related financial-statement amounts) not only across companies in the same retail segment, but also for individual retailers over time.

### **RECOMMENDATIONS FOR TEACHING APPROACHES**

Well-known retailers are the focus of this case. Most students should bring some familiarity with these firms to the case discussion because they, their friends, or families have probably shopped (and maybe even worked) at one or more of these retailers. The case can be used to highlight the current diversity that exists in the retail industry regarding administration of credit card programs and what this means for receivables levels, days' sales in receivables, and working capital management.

This case can be used as the basis for classroom discussion or to motivate a written report. In either case, the questions are direct and elicit fairly specific reflections that will contribute to the in-class discussion. Instructors should proceed through the case questions in numerical order, since most build on answers to earlier questions. Questions in the case can be discussed in a general class session, with all students participating. Alternatively, the

instructor can assign questions to different student teams based on specific corporate 10-K filings, and those teams can prepare a presentation of their proposed answers as a springboard for full class discussion. Questions 2, 4, and 5 afford students the opportunity to access the SEC's EDGAR database. The extensions at the end of this teaching note allow students to consider how a retailer's practice of administering its own credit-card operations or outsourcing them could affect the journal entry to record credit sales, and where amounts due from third-party banks could be shown on a balance sheet.

Students will need a level of understanding of financial statements that generally results from the completion of one semester of financial accounting as well as some familiarity with the use of the SEC's EDGAR database (or the instructor will need to provide guidance on accessing filings from the SEC website). This case is well suited to discussions that relate to working capital and liquidity issues.

For convenience, key case data are repeated for the two retailers' for their fiscal years ending February 2, 2013 (Macy's, 2013; Nordstrom, 2013):

	<u>Macy's</u>	<u>Nordstrom</u>
Net sales	\$27,686,000,000	\$11,762,000,000
Average accounts receivable	369,500,000	2,008,000,000*
DSAR	4.9 days	62.3 days

\*(In those instances where the firm disclosed the existence of noncustomer receivables, we excluded them even though their amount was often immaterial.)

#### QUESTIONS FOR DISCUSSION (WITH SUGGESTED ANSWERS)

- 1. Is it plausible that the very low days' sales in accounts receivable (DSAR) at Macy's and the sizable difference in that ratio between Macy's and Nordstrom simply reflects the superior effectiveness of Macy's collections department?**

Not really. No retailer can afford to alienate and confuse its charge customers by first allowing them to buy on credit but then insisting that they settle the receivables within a very few days.

- 2. What must have occurred at Macy's (formerly Federated Department Stores) to explain the sudden decline in accounts receivable that the firm experienced during fiscal 2006, as observed by Bob in the case? (Hint: Use the SEC's EDGAR database to access the 10-K filed by Federated on April 4, 2007 and refer to Note 5 to the financial statements).**

As mentioned in Note 5, Federated entered into a marketing and servicing alliance with Citibank during fiscal 2006 (Federated, 2007). The transfer of receivables from Federated's books to Citibank's books explains why the accounts receivable carried on the retailer's comparative balance sheet were \$2 billion less at February 3, 2007 than they had been at January 28, 2006.

Macy's (Federated's) action in fiscal 2006 turned out to be a harbinger of things to come as more and more retailers embrace the idea of outsourcing their card operations. Recently both Target and Talbot's entered into agreements to turn over administration of their credit-card programs to third-party financial institutions (Farrell, 2012; Rouan, 2012; Target, 2013).

A very clear discussion of how a retailer's outsourcing will affect its balance sheet appears in Note 3 to the financial statements that Target included in the 10-Q that it filed with the SEC on November 21, 2012. Excerpts of the note read as follows (Target, 2012):

On October 22, 2012, we reached an agreement to sell our entire consumer credit card portfolio to TD Bank Group (TD) for cash consideration equal to the gross (par) value of the outstanding receivables at the time of closing. The sale, which is subject to regulatory approval and other customary closing conditions, is expected to close in the first half of 2013. Following close, TD will underwrite, fund and own Target Credit Card and Target



Visa receivables in the U.S. TD will control risk management policies and regulatory compliance, and we will perform account servicing and primary marketing functions. We will earn a substantial portion of the profits generated by the Target Credit Card and Target Visa portfolios.

Historically, our credit card receivables were recorded at par value less an allowance for doubtful accounts. With this agreement, our receivables are now classified as held for sale and recorded at the lower of cost (par) or fair value. . . . At closing, this transaction is expected to be accounted for as a sale, and the receivables will no longer be reported on our Consolidated Statements of Financial Position.

3. **Was Jill correct when she asserted in the case that “for every payable there must be a receivable somewhere”? If so, what would explain the absence of large amounts of accounts receivable on the books of Macy’s despite the fact that large amounts of payables were being incurred by the firm’s many charge customers?**

Jill is correct that there have to be corresponding accounts receivable on *someone’s* books – but it does not have to be on Macy’s books. As noted in the suggested answer to question 2, under the terms of a marketing and servicing alliance since 2006, Citibank owns all of Macy’s receivables and, accordingly, those receivables are reflected on Citibank’s books, not Macy’s books. Usually within a few days of its credit sales, Macy’s receives cash from Citibank equal to the carrying amount of the receivables less a swipe/interchange fee.

Retailers such as Macy’s continue to show *some* accounts receivable on their books, consisting of vendor allowances due from suppliers that reward volume purchases or compensate the retailer for defective merchandise.

4. **What is the likely reason that Nordstrom continues to show large amounts of accounts receivable on its balance sheet? Does Note 3 on receivables in Nordstrom's fiscal 2012 10-K confirm your hypothesis? Explain.**

The receivables note (Nordstrom, 2013) indicates that unlike Macy’s, Nordstrom manages its accounts receivable in-house through a wholly-owned subsidiary, the Nordstrom fsb (Federal Savings Bank). It also reveals that the receivables balance includes amounts due on the Nordstrom VISA card (that the retailer also administers) in addition to its store card. Because these cards are administered in-house, the receivables remain within the Nordstrom consolidated entity and are shown as a current asset on the retailer’s consolidated balance sheet. Even if Nordstrom’s co-branded VISA receivables (disclosed in Note 3) are excluded, its DSAR would be 23.6, which is almost five times Macy’s DSAR.

5. **Access the fiscal 2012 10-Ks for Office Depot, OfficeMax, and Staples using the SEC’s EDGAR website. Calculate the DSAR for each firm. Explain the most likely reason that these firms’ ratios can be meaningfully compared with each other, in contrast to the situation for Macy’s vs. Nordstrom.**

DSARs for the three office-supply retailers were as follows (Office Depot, 2013; OfficeMax, 2013; Staples, 2013):

	<u>Office Depot</u>	<u>OfficeMax</u>	<u>Staples</u>
Net sales	\$10,695,652,000	\$6,920,384,000	\$24,380,510,000
Average accounts receivable	833,387,500	543,457,000	1,924,633,000
DSAR	28.4 days	28.7 days	28.8 days

The above data strongly suggest that unlike Macy’s, each office-supply retailer has chosen to retain management of its store credit card in-house. Notice that their DSAR ratios are nearly identical, which is not surprising given that firms need to offer credit terms that are comparable to those of their peers to remain competitive within their line of business.

6. **Conventional wisdom has held that too low a DSAR often indicates that good credit sales might have been sacrificed due to extremely restrictive credit standards or credit terms (Businessdictionary.com, 2013). Explain how the findings presented in this case suggest a need to re-examine this viewpoint.**

It is true that tightening credit standards (who qualifies for purchases on account) and credit terms (shorter payment periods) can lead to faster collections (as well as potentially lost sales and lower bad debts). However, when retailers such as Macy's outsource their credit-card operations, their DSAR ratios become very low as a direct result of this outsourcing. As indicated in the suggested answer to Question 1, the huge disparity between the DSAR for Macy's vs. Nordstrom does not imply that the former's credit policies are more restrictive than the latter's.

In instances where peer retailers manage their own store credit cards in-house, DSAR ratios can offer insight into whether or not those firms' credit policies are similar. For example, it would be reasonable to conclude that Office Depot, OfficeMax, and Staples have similar credit policies, given the ratio results shown in the solution to Question 5.

7. **When retailers outsource their credit-card operations, does this diminish the insight that can be gained from calculating the DSAR ratio?**

Yes and no. As seen in this case, a lower DSAR need not imply that the retailer's credit policies are too restrictive, just as it need not imply that the firm's credit customers are settling their obligations in record time. On the other hand, a lower DSAR (compared to a higher DSAR) continues to signal that the retailer has achieved working-capital efficiencies--regardless of whether payment for credit sales was received almost immediately from a financial-institution partner or from customers paying off their accounts on a timely basis.

In addition, insight can still be gained from comparison of the DSARs of peer retailers (such as the three office-supply retailers) as long as each firm has retained management of its store credit card in-house.

### EXTENSIONS

Many retailers offer both a store credit card and a co-branded card, where the latter can be used anywhere the collaborating network's card (such as VISA or MasterCard) are accepted. In either case, the critical issue for analysis of retailers' accounts receivable levels and ratios turns on whether or not the retailer administers its credit card operation in-house or outsources that operation to financial institutions. To more fully convey why these differences arise, instructors may wish to discuss the following case extensions, which address how retailers record credit card sales and amounts due from customers and how retailers record and classify amounts due from financial institutions.

Question 8 allows students to consider how the journal entry to record credit sales would change if the retailer has outsourced its credit-card operations. Question 9 can serve as a springboard for a discussion of where amounts due from financial institutions should be shown on retailers' balance sheets. It also allows students to access and analyze 10-Ks filed by seven additional retailers: Costco, Gymboree, Kohl's, The Children's Place, Toys "R" Us, Walgreen's, and Wal-Mart.

8. **When customers use a store credit card administered in-house, a retailer's journal entry to record a \$100 credit sale would be as follows:**

Accounts Receivable	100	
Sales		100

**How would the above entry change if the store card was administered by a financial institution that charged the retailer a 3% swipe/interchange fee?**

The entry recorded by the retailer would now be as follows:

Due from Financial Institution	97	
Credit Card Expense	3	
Sales		100

**9. Where on its balance sheet should a retailer include the amount due from financial institutions? Would the answer depend on how long the retailer expects to wait to receive the electronic funds transfer?**

A spirited discussion can result when students consider this issue. Many class members will argue that amounts not yet received from financial institutions for credit-card transactions must be shown as accounts receivable because no cash has yet been received. A number of retailers indicate in their Accounts Receivable note that they follow this practice, including Gymboree, The Children’s Place, and Toys “R” Us (Gymboree, 2013; The Children’s Place, 2013; Toys “R” Us, 2013).

Some class members might consider removing this item from accounts receivable if there was some account other than cash that could be used for these not-yet-received funds. The instructor can ask if these non-cash amounts could be included within the cash and cash equivalents classification on retailers’ balance sheets. Many students will say no, pointing out that cash equivalents are financial instruments that have been purchased by the firm with an original maturity of three months or less – and here there has been no such purchase and no maturity date.

Interestingly, many retailers *do* classify amounts due from financial institutions for credit-card sales as cash equivalents; examples include Costco, Kohl’s, Walgreen’s, and Wal-Mart (Costco, 2013; Kohl’s, 2013; Walgreen’s, 2012; Wal-Mart, 2013). However, Wal-Mart distinguishes between electronic funds transfers expected in less than seven days and amounts not expected until later. Only the former are classified as cash and cash equivalents, while the latter are shown among the accounts receivable (Wal-Mart, 2013).

**ADDITIONAL OBSERVATIONS**

Table 1 presents information concerning the prevalence and administration of retailers’ store credit cards (which can only be used within that retailer’s network of stores). Instructors may select elements from the following table to either introduce or wrap up the case discussion.

**Table 1: Store Credit Card Facts**

Number of retailers with store credit cards (Packaged Facts, 2013)	More Than 200
Number of U.S. adults with store credit cards (Packaged Facts, 2011)	61 million
Estimate of amount owed on store cards in 2012 (Packaged Facts, 2013)	\$108.6 billion
Estimated percentage of all credit-card loans outstanding represented by store cards (Bernard, 2009)	11%
Estimated percentage of department-store sales on store cards (Bernard, 2009)	30-40%
Sample of six retailers with store cards still administered in-house (based on firms’ 10-Ks filed at end of 2012 or early 2013)	Coach Nordstrom Office Depot OfficeMax Staples Tandy Brands
Sample of eight retailers with store cards administered by third-party banks in 2012 (Firms’ 10-Ks). See Table 2 for examples of this growing trend.	Barnes & Noble Best Buy Children’s Place Kohl’s Macy’s Toys “R” Us Walgreen’s Wal-Mart

Since DSAR is often characterized as a measure of how long customers are taking to settle their obligations, students may be surprised to learn that retailers' DSAR increasingly reflect the timing of electronic transfers from banks. To underscore this trend, instructors may wish to use Table 2, which offers examples of well-known retailers that have sold their credit-card operations. As this case illustrates, variety in retailers' choices in managing their credit card landscape affects receivables ratios (and related financials). As a result of having analyzed these issues in the case, students can address the implications not only across companies in the same retail segment (inter-company analysis), but also for individual retailers over time (intra-company analysis).

**Table 2: Examples of Retailers' Transfer of Store Credit Card Operations to Financial Institutions**

<u>Year</u>	<u>Retailer</u>	<u>Card Transferred To</u>
1996	American Eagle Outfitters	GE Consumer Finance
1999	J C Penney	GE Consumer Finance
2003	Sears	Citibank
2006	Kohl's	Chase
2006	Federated (Macy's)	Citibank
2009	Charming Shoppes	Alliance Data Systems
2010	Neiman-Marcus	HSBC Holdings
2012	Talbot's	Alliance Data Systems
2013	Target	TD Bank

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# Social Media: A Viable Source for Collecting Research Data

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## ABSTRACT

Social media has become the primary source for connecting with others internationally. Professional Social Media Networks (SMN) such as LinkedIn attract business professionals globally. This paper introduces the methodology as it was used in conducting and collecting research data for a sample of 714 participants. Results demonstrate that social media is a viable source for collecting original research data. Further, results showed that using SMN has many advantages that conventional data collection cannot offer such as speed of response, international reach, and access to a diverse group of multinational professionals who are viewed as experts in their fields. Use of SMN as a research medium represents a powerful new tool for teaching and conducting business research.

**Keywords:** Social Media Networks, LinkedIn, Reflective Leadership and Reflective Learning

## INTRODUCTION

Social media has rapidly become the primary source for connecting with others globally. It is attractive to a variety of professionals and scholars internationally who advocate five common building blocks—identity, conversations, sharing, relationships and reputation (Kietzmann, Hermkens, McCarthy and Silvestre, 2011). Social Media Networks (SMN) have dramatically increased their presence in the last ten years and will significantly enhance the efficiency with which research is conducted. SMN sources such as YouTube, Twitter, LinkedIn and Google Scholar are becoming viable sources for publishing, web-based conferences and academic presentations. According to Hermida (2011), social media can be seen as a constantly shifting system of peer evaluation where our standing is based on the value we bring to the network. Such rich online data will allow researchers to extend the relative contribution of various factors to the racially homogenous networks once so common in relationship networks (Deil-Amen, Rios-Aguilar, Davis III and Canche, 2012).

Social media sites such as LinkedIn focus primarily on professional networking. Since its founding in May 2003, LinkedIn has become a successful public company with more than 225 million members and nearly \$325 million in quarterly revenue. Yeung (2013) states:

LinkedIn has established itself as an international company, with more than 3,700 employees around the world, including in Mountain View, California, Chicago, Los Angeles, New York, Amsterdam, Dubai, Hong Kong, Milan, Mumbai, Paris, Singapore, Tokyo, Toronto, and several others. It is available in 19 different languages too — besides English, there's Czech, Dutch, French, Indonesian, Italian, Malay, Polish, Romanian, Russian, Spanish, Swedish, and more.... Naturally, the majority are from the US — after all, this is the company's country of origin. The next largest country is India with 19 million, followed by Brazil with 12 million, and the United Kingdom with 11 million.

Social media networks are used by both individuals and a wide variety of organizations internationally. Individuals use SMN to network with other professionals, to obtain employment, identify professionals with similar interests, share views on important issues, and to gather information for a variety of personal uses (Brown, 2011; Gruzd, Staves, & Wilk, 2012). Organizations make use of SMN for marketing (de Vries, Gensler, & Leeftang, 2012), to increase brand loyalty (Laroche, Habibi, & Richard, 2013), to educate employees (Wang, Sandhu, Wittich, Mandrekar, & Beckman, 2012) and to evaluate job candidates (Davison, Maraist, & Bing, 2011). Increasingly, corporations are using SMN to mine existing data sources to identify consumer preferences and to predict changes in competitor strategies and industry directions (He, Zha, & Li, 2013). A logical progression in the use of SMN is to conduct original scholarly research. However, effective use of SMN for research data collection will require the development of new models and research methods.

According to Blank (2013), "Effective use of SMN data requires the development of theories that will benefit from large amounts of data. There is theoretical work to be done to take full advantage of our newfound data riches" (p.464). Additionally, unlike previous conventional surveys or data collecting methods that have relied heavily on

self-reported data, social media can provide researchers with a data set richer in diverse demographic background characteristics versus the conventional homogenous groups mostly used in university settings where students are often the sole participant group for scholarly research. Currently there are no studies found in the literature that have focused solely on the impact of using SMN as a vehicle for conducting original scholarly research. Moreover, many of the problems that are common to other research methodologies (e.g., breadth of reach and access to high-quality data) can be overcome using SMN.

## RESEARCH METHODOLOGY

In the fall of 2012, three researchers set out to empirically test Castelli's (2012, 2011) theory of reflective leadership by creating a quantitative survey instrument developed for this purpose. Reflective Leadership (RL) is characterized by learning from reflecting on past experiences. RL is necessary in multinational organizations where experiential learning from participation in diverse markets around the globe is viewed as essential since RL promotes cultural awareness that enables organizations to adapt their strategies, policies, and business practices to the diverse markets in which they compete.

To test the power of RL, a 62-item survey was developed with an electronic link via SurveyMonkey. The first step to enlisting participants on LinkedIn was to develop and post a user profile by building all the necessary content (background, experience, skills and expertise, and education). Next, by searching for people and companies, it is very simple to find and connect with others. Once connected, others endorse the user's skills and expertise and the cycle of connecting rapidly grows and develops.

Joining groups is a critical aspect of connecting with others and building relationships. LinkedIn makes this process user-friendly. By merely going to the search button and entering a few keywords (e.g., international leaders or multinational leaders), a variety of related groups appear. By viewing each group's purpose and brief description, the number of members, shared connections, etc., a decision can be made as to whether or not a group will be beneficial to the research study, prove interesting to group members and provide opportunities for discussion and professional development. Next, by clicking the "join" button for a particular group, a request is forwarded to the group manager who sends an email welcoming the researcher to the new group (this step may take several days). Once membership in the group has been approved, the researcher can start contributing to existing forums or create new forums for discussion.

By going into a group, a user can start a new discussion. Starting a discussion for this research entailed creating a brief message (200 words maximum are allowed) along with the link to the survey. The message developed for this study included: I am a professor at Lawrence Tech, USA, and need your help to further my research on Reflective Leadership by completing a brief survey. [http://www.surveymonkey.com/s/Reflective\\_Leadership\\_Survey](http://www.surveymonkey.com/s/Reflective_Leadership_Survey). By cutting and pasting this message, it can be posted on each group for which the researcher is a member. This invitation was posted to 50 professional groups on LinkedIn (note that 50 groups is the maximum allowed). For this study, groups included a variety of leadership and international management forums in addition to higher education and other non-profit sectors. By clicking on the link, participants were directed to the survey that included brief instructions for completing the survey along with an informed consent to ensure agreement with the terms of completing the survey. Participation was voluntary, anonymous, and confidential and for which there was no compensation. Participants, however, could receive a report of the findings if requested.

Although all of the above mechanical steps are necessary for eliciting responses on LinkedIn groups, the *real work* is in follow-up and ongoing communications with many posts. As a result of participants taking the survey, a variety of leadership discussions were sparked and lively discussions ensued. For instance, on one leadership forum, a debate resulted over the term "follower" being used in the study to denote employees. Several comments were made on the use of the word and its negative implications. Others responded by citing the existing literature on followers and followership. Although not everyone agreed, courteous and polite disagreements were healthy. Some discussion examples follow.

**Comment by respondent one:** This leader-follower thing sounds like we are a nation of sheep following the "boss" wherever they go. If you work for someone, are you the follower in your survey? The leader-follower flow is a giant turnoff and I frankly wonder why you decided to word your survey in that way. It says we are a nation of followers with a few leaders and that's how we live our lives.

**Response by RL researcher conducting study:** Sorry you disagree with the term 'follower' that is what we call it in the realm of leadership theory and practice. We are all followers at times, this is not bad or negative. In addition to teaching, I own my own management consulting business. In all capacities, I enjoy serving as both leader and follower. Do you like the word subordinate better or workers? Sorry you were 'turned off' by the word follower. Again, I don't see this term as negative. I disagree that you feel we are a nation of followers with a few leaders; we all lead and follow at times. One is not superior to the other -- we need both...right?

**Comment by respondent two:** I just did the survey. And read your conversation. Yes, maybe the term "follower" may not be the coolest for a team member who does not hold the leading position, but "worker" is not good either as the leader, leading by example, should be a top worker himself/herself... Subordinate is even worse.... We have to recognise that picking the term was not an easy task, but the survey is interesting and I would love to hear about the results and about the concept of reflective leadership.

**Comment by respondent three:** I just have to add my 2 cents here. I have studied leadership for many years, am a certified leadership coach and am working on a dissertation regarding leadership. The word "leader" implies, by its very definition that someone must follow. How can one be a "leader" if no one is following? Without followers, one can never be a leader unless leading oneself is the only requirement for the definition of the word, and I don't feel that would be a sufficient condition to define "leader", as that would mean all people would be leaders (which I don't believe is to be so). I don't take exception to the word "follower" because it is only a designation used to identify one person versus another in a relationship. I too am a consultant, and in organizations there are "followers" in that if the "leader" or boss tells the employees what is to be done, the employee should do as the "leader" requests (following) should they want to continue their employment. The "leader"/"follower" relationship is very much present no matter what word you choose to use to identify the characters. I take no exception to your language as it is very common to all of the research literature. I wish you the best in your research!

**Comment by respondent one:** I'd suggest putting your comment into generally understood words please. Not everyone in this discussion is an academic, sociologist, psychologist, human behaviorist. My point is that the survey is going out to non academics who do not know that the word "follower" is common in research circles. Why run any risk of alienating the survey audience targets if you don't have to especially if it's as simple as a change in a word? Why not then try to use words that everyone understands and do not even hint at "insulting". As a business person, I respect the research being done by these researchers, its intent, and I will value and apply its results. I'm suggesting that wording be revised to reflect it's what the target audience commonly understands and uses so it gains traction and response.

**Comment by respondent four:** Without reflective learning, I would never been effective as a naval officer, as a nuclear engineer, or as a leader of people. Most specifically, I would never have been able to discover the science of people since that required a huge amount of reflective learning by listening to and analyzing what I heard from my people over many years.

**Response by RL researcher conducting study:** Reflective leadership causes leaders to learn from mistakes and look at both positive and negative actions/decisions. In my classes I teach the value of reflective leadership through leadership interviews and the 360 evaluation process. Since if people are not self-aware of their actions and behaviors they can't possibly change. Self-awareness is key and reflection in my opinion (and yours) is a critical part of this process. Sadly there are many businesses out there that do succeed without reflection; at least in the short term. There are a lot of other aspects that come into play such as lack of integrity and business ethics as well as power and greed. I am glad to hear that reflective learning has made you a better and more effective leader. I totally agree and am very passionate about this topic. I am happy that in my position as professor, I can help current and future business leaders understand the value of this powerful tool.

Also, for each person who "Liked" the survey and/or made comments regarding the research, immediate responses were provided to insure them that their comments were being tracked and all suggestions for improving the study were considered.



## RESULTS

A total of 714 participants representing 81 nations (approximately 39% USA and 61% other country) responded to the survey. The sample was well balanced between men (55%) and women (45%). The typical respondent was an American male, 48.7 years of age, with 8.8 years of international work experience.

Due to the continuing facilitation that provided ongoing visibility within groups coupled with robust discussions, our Reflective Leadership forum and link was often listed as “Most Popular Discussions” and “Manager’s Choice”. This propelled the response rate and within three weeks, using 50 groups on LinkedIn with ongoing communications, 714 completed surveys resulted. Additionally, we were asked to attend conferences, conduct consulting, and keep participants posted for our upcoming journal publications. Another benefit was the wide variety of new professional contacts that grew daily as well as professional friendships that have developed as a result of this process.

## CONCLUSION

Our experience with collecting research data via LinkedIn, proved to be superior to traditional methods of gathering data in a number of ways. First, the respondents were seasoned professionals working in multinational organizations with real-world experience rather than undergraduate or graduate students who are often used for scholarly research. Because the sample consisted of experienced business professionals, their work-related opinions and attitudes likely provided more informed and useful insights into leadership than would be provided by students or young adults with limited work experience.

Second, the sample was truly global representing 81 nations from the Americas (US, Canada, Brazil, etc.), Europe (UK, Germany, Poland, etc.), Africa (Algeria, Kenya, Rwanda, etc.), the Middle East (Israel, Jordan, Saudi Arabia, etc.), Asia (China, Russia, Singapore, etc.) and Australasia (Australia, New Zealand, etc.). The international character of the sample is particularly important today with the emphasis on the skills, developments and requirements for effective global leadership. Third, the speed of response rate was exceptional with 714 responses in less than a month. Traditional data collection methods often take months or years, and rarely generate such a large sample. Fourth, working with international professionals streamlined the data gathering process since they *wanted* to participate to assist fellow peers on their research journey and were not *forced* to participate as is often the case. This aspect of mutual respect and support made the process worthwhile and allowed the researchers to teach beyond the classroom by sharing what we are learning from the study with business professionals from around the world. Over 400 participants requested a copy of the executive report of the findings which we were pleased to promptly provide.

Finally, the research techniques developed for this study will be included in the doctoral research methodology courses at Lawrence Technological University as a viable method for collecting data. Not only does the use of SMN provide sound methods for accessing and obtaining potential participants for research studies, it also enhances the quality and credibility of survey results from international professionals with real-world experience.

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# Using Monte Carlo Simulation to Teach Students about Forecast Uncertainty

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## ABSTRACT

Business students make use of electronic spreadsheets to learn about, and perform, many kinds of financial and business analyses. Traditional spreadsheet analysis, however, often uses a single cell value (like an average) to represent uncertain or variable inputs. This results in a static, or deterministic, outcome that might be unrepresentative of the range of possible forecast values. This in-class discussion and demonstration makes use of Oracle© Crystal Ball to demonstrate the power of simulation to improve forecast models.

**Keywords:** Monte Carlo simulation, stochastic forecasting, spreadsheets

## INTRODUCTION

All organizations face some level of risk, uncertainty, and variability in their quantitative analyses, forecasting and decision-making. To be successful, firms must understand the impact of changes to key input variables on business outcomes. To model the effects of different input conditions on outcomes, Monte Carlo simulation methods are often employed. Stanislaw Ulam, a mathematician and scientist associated with the Manhattan Project, is credited with developing the Monte Carlo method of computation while using the idea of multiple random samples to determine the chances of winning at solitaire.

Monte Carlo simulation builds a model of possible outcomes by substituting random values from a specified distribution of all possible values for each input variable. The model continues to recalculate outcomes, using a different set of random values from the probability distribution of each variable defined by the researcher (Mooney, 1997). Given the computing power available today, outcome calculation is possible for tens of thousands of simulation runs in fractions of a second. The simulation produces a distribution of almost all (if not all) possible outcome values. Since Monte Carlo analysis uses probability distributions, the likelihood or probability of each outcome can be calculated. This not only provides decision-makers with the most likely outcome scenario(s), but also the best-case and worst case scenarios and a range of outcomes in between.

The initial use of Monte Carlo simulation methods was in the field of statistics. This technique allows researchers to track the behavior of a given statistic across several random samples, a feat that is either impossible or extremely expensive via any other means of analysis (Stephenson & Holbert, 2003; Paxton, Curran, Bollen, Kirby & Chen, 2001). The approach quickly spread from theoretical statistical experiments to real-world business problem applications. Because of its ability to model and quantify the likelihood of different scenarios, the Monte Carlo approach has proved to be a valuable and flexible computational tool in modern finance (Boyle, Broadie & Glasserman, 1997). The method is used to determine the pricing for securities (Duffie & Glynn, 1995), the valuation of mortgage-backed securities (Schwartz & Torous, 1989), and a pricing method for options (Kenma & Vorst, 1990). Additionally, financial planners use Monte Carlo simulation to determine optimal retirement investment strategies for their clients. Procter and Gamble uses simulation to model and optimally hedge foreign exchange risk (Winston, 2004).

Other areas of business have discovered the benefit of using simulation to evaluate the likelihood of a range of possible outcomes. Winston (2004) provides several instances of Monte Carlo use in product development and supply chain management. For example, General Motors, Procter and Gamble, and Eli Lilly use simulation to estimate both the average return and the riskiness of new products. This helps determine which products come to market and which products need further development. Sears uses simulation to determine how many units of each product line to order from suppliers and Lilly uses it to determine the optimal plant capacity that should be built for each drug. Marketing departments use simulation for such activities as improving sales forecasts (Engle, Granger & Hallman, 1989) and modeling consumer behavior on the Internet (Lohse, Bellman & Johnson, 2000). Finally, Kwak and Ingall (2007) discuss the benefits of using Monte Carlo applications in the realm of project management. Using this tool, project managers are able to estimate and forecast more realistic project schedules and budgets. The

outcome forecast ranges also allow project managers to build the contingency reserves necessary to deal with uncertain (risky) project events.

Because of widespread use in a variety of industry environments, we have found it useful to expose our students to Monte Carlo simulation techniques in the classroom. Many free or relatively inexpensive, readily available software packages automate the tasks involved in simulation. Changes to the initial models may easily be made, and multiple forecast models developed. This allows any student to create “what if” scenarios to ascertain the effect of changes in input variables on the outcome or outcomes of interest. Monte Carlo simulation not only provides students with a useful analytic tool that enables the inspection of real-world problems from different perspectives, but also provides them with a tool that will be useful in their professional endeavors. In short, Monte Carlo analyses enable the modeling and analysis of realistic and important problems that are encountered in daily life (Travers & Gray, 1981).

## CLASSROOM DISCUSSION AND DEMONSTRATION

We introduce this lesson by discussing the development of expense line items for a simple household budget. We ask students to identify categories of household expenses (e.g., rent/mortgage, electric, food, phone, cable TV, etc.). We generate some values for rent expense for a 2-bedroom apartment; students quickly come to see that the rent values vary quite a bit, depending on apartment size, location, amenities, etc. The values for the other expenses vary, as well. We ask if the students would be comfortable giving an average value (the sum of all of the individual expense averages) as a “living expense forecast” to a friend who is moving to the area. The purpose of this question is to generate dissatisfaction with the use of average values as forecast inputs and outcomes.

At this point, the students are ready to follow a more detailed example of stochastic forecasting. There are several software packages available for Monte Carlo analyses, but we prefer Oracle<sup>®</sup> Crystal Ball because it is an easy to download and easy to use add-in for Microsoft Excel<sup>®</sup>. Instructors may obtain Crystal Ball software from the Crystal Ball Education Alliance, or the Higher Educations Sales Manager/Crystal Ball Academic and Higher Education Sales at Oracle.com (<http://www.oracle.com/technetwork/middleware/crystalball/downloads/index.html>). If you use Crystal Ball (or another package), it is helpful to have the students follow along on their computers with the development of the following forecast model and simulation run.

**Simulation example – “Linda’s wedding”.** Linda plans to get married in June. Her parents have been saving for years and have put aside \$25,000 for the wedding. Linda and her mom have been planning the wedding day – and dad wants an estimate of the costs. Frank, the wedding planner, tells dad that the estimates come out to \$23,000. Mom and dad are concerned, however, about the *variability* of the costs. The florist keeps talking about the seasonality of certain flowers, shipping costs, size of arrangements, etc. and can’t quite nail down a firm estimate. In addition, the gown may or may not require additional fittings and alterations, and while most of the RSVP’s have come in, Linda worries that some folks might not show up, while some family members might bring along uninvited guests. What’s a future bride to do?

Linda first develops a spreadsheet listing of the line item expenses for her wedding (See Table 1). Frank’s \$23,000 total estimate was based on his best guess (average) for each expense item. However, Linda knows that some of the expenses are fixed (hall rental, entertainment) and some are variable (gown, flowers, food and beverages). Linda’s next step is to gather data on the costs associated with each item. She asks the florist for the raw data (cost for flowers) associated with the last 100 weddings of this size that he has done at this particular church. Linda sorts the costs from low to high and calculates an average (mean = \$1,000) and a standard deviation (stddev = 113.3781) for the data. Linda looks at the costs and notices that the costs seem to be distributed about the mean, with most values clustered around or centered on the mean (a normal distribution).

The estimate for her gown is that the price will likely be \$5,000.00; if the gown fits perfectly, the cost may be as little as \$4,500.00 (optimistic estimate), but if there are substantial alterations, the gown could cost as much as \$5,500.00 (pessimistic estimate). Linda has invited 125 people to the wedding. Linda and her folks calculate that if the “maybe’s” don’t come to the wedding, the number of people who show will be 110 (out of 125 invitees). If everyone who is invited comes to the wedding *and* unwanted guests/relatives show up, the guest list could climb to 140. So, those are the upper and lower bounds of the guest list. This is good information, too. Linda now has more information with which to model/simulate the costs associated with her wedding.

The spreadsheet now contains the same items as a static, or deterministic, model (Flowers, Gown, Hall Rental, Food, Beverage, Entertainment), but Linda will add variable estimates for Flowers, Gown, Food and Beverages based on her analysis of the variability of those costs (those cells are shaded light grey in Table 1). Using her knowledge of the underlying distribution of costs associated with “Flowers” (a normal distribution), Linda uses Crystal Ball to create an input assumption for the variability of the cost of flowers. She clicks on the \$1,000 cost in the spreadsheet cell for Flowers, selects the “Define Assumption” menu in the Crystal Ball tab, and selects “Normal Distribution” for this variable (See Figure 1). She then inputs “1000” and “113.38” for the mean and standard deviation associated with her data. She clicks “OK” to store that information for the simulation. Using her knowledge of the underlying distribution of costs associated with “Gown”, Linda uses Crystal Ball to create an input assumption for the variability of the costs associated with her gown. She clicks on the \$5,000 cost in the spreadsheet cell for Gown, selects the “Define Assumption” menu in the Crystal Ball tab, and selects the “BetaPERT Distribution” for this variable (Linda uses this distribution because she knows that the final cost of her gown is *most likely* to be the likeliest value than it is to be either the optimistic or pessimistic value). She then inputs “4500” in the minimum box, “5000” in the most likely box, and “5,000” in the maximum box (see Figure 2). She clicks “OK” to store this information.

Linda knows that if 110 people show up (her low estimate), her food costs (at \$80/plate) will be \$8,800 and her beverage costs (at \$32/person) will be \$3,520. If 140 people show up (her high estimate), her food costs will be \$11,200 and her beverage costs will be \$4,480. She clicks the food cost estimate cell on her model spreadsheet, selects “Define Assumption”, and selects “triangular” (Linda has a minimum, a likeliest, and a maximum cost/value for her range of guests, but the actual cost is equally likely to be above or below the likeliest value). She enters the minimum (\$8,800), likeliest (\$10,000) and maximum (\$11,200) costs for food and clicks “OK” (See Figure 3). She repeats the same procedure for the spreadsheet cell associated with the beverage costs, using the minimum, likeliest and maximum costs associated with that triangular distribution (See Figure 4).

Finally, Linda clicks the “Total” spreadsheet cell that sums the wedding costs (\$23,000.00; that cell is shaded dark grey in Table 1) and selects the “Define Forecast” tab...when the dialog box appears, she inserts “Total Wedding Costs” in the name box and “25,000.00” in the USL (upper specification limit) box. She does this because \$25,000 is all the money her parents have to spend and dad is wondering about the likelihood (probability) of exceeding that number (if extras show up for the wedding).

At this point, the Crystal Ball model has all of the information needed for simulating outcomes (forecast values). In our model, we have chosen to simulate 5,000 trial runs; in other words, for each “run”, Crystal Ball randomly selects one value from the distribution for each input variable and sums all 6 input variables to arrive at an output value. When performed 5,000 times, the result is a range of output estimates representing a range of forecast values (See Figure 5). Notice that Figure 5 shows a blue line representing an upper specification limit (USL) of \$25,000.00. Notice also that the range of forecast values approach, but do not exceed, that limit. This tells us that the probability of spending \$25,000.00 on the wedding is very, very small (if not zero). Dad will be very happy!

Another feature of Crystal Ball is that it can give confidence intervals for a range of output values. In Figure 6, we have inserted a lower limit of \$22,000.00 and an upper limit of \$24,000.00 in the certainty range boxes at the bottom of the chart – Crystal Ball then takes these limits and calculates a 92.36% probability that the wedding costs will be within those two limits. You could also input a probability value in the center bottom box and Crystal Ball will generate upper and lower limits for you. As such, Crystal Ball provides students not only with a way to generate a range of outcome values, but tells them the probabilities associated with values or a range of values. This is useful information for anyone who seeks to have a better understanding of variation in forecasting and/or spreadsheet analyses. Crystal Ball will also perform sensitivity analyses (See Figure 7). This chart tells the students that total wedding costs are most sensitive to changes in Food costs; in fact, the chart calculates that 76.7% of the variability in total wedding costs is due to Food costs. That is also good information (for dad).

In order to assess student understanding of the basic functions and features of Monte Carlo simulation software (like Crystal Ball), and to provide an opportunity for student practice and instructor feedback, we have found it useful to assign, as homework, a project where the students are required to develop and analyze their own simulation model. Examples of our students’ work include the development of a model which predicted a team batting average forecast (based on the variable batting average input statistics for individual team members), the development of a fraternity “social activity” budget (using variable input data from past activity categories), and project schedule forecasts for a

student project with multiple activities and work requirements. Our experience with this exercise indicates that students quickly become more familiar with, and appreciate, simulation and stochastic forecasting, and that much of the mystery associated with subject matter is expeditiously dispelled.

## CONCLUDING THOUGHTS

The major purpose of this discussion and demonstration is to expose students to the concept of stochastic forecasting. We have found that this simple-to-understand lesson provides students with a changed perspective on the nature of spreadsheet inputs and forecasts, and pays dividends in terms of increased understanding and functionality in other classes where spreadsheet formulas and forecasts are used. Many students go beyond the simple requirements of the homework task to develop simulation forecasts for use in internship assignments and work opportunities outside of class. Some have explored the additional functions and features of the software (e.g., the optimizer and predictor functions in Crystal Ball), and presented their analyses and findings in other venues. As such, this simple discussion and demonstration assists students in the development of technological literacy and computational skill-building, two skills in increasing demand by prospective employers. It is not often that educators come across a versatile tool that provides so much value at such little cost.

Table 1:

### Linda's Wedding

Flowers	1000
Gown	5000
Hall Rental	1000
Food	10000
Beverage	4000
Entertainment	2000
Total	23000

Figure 1:

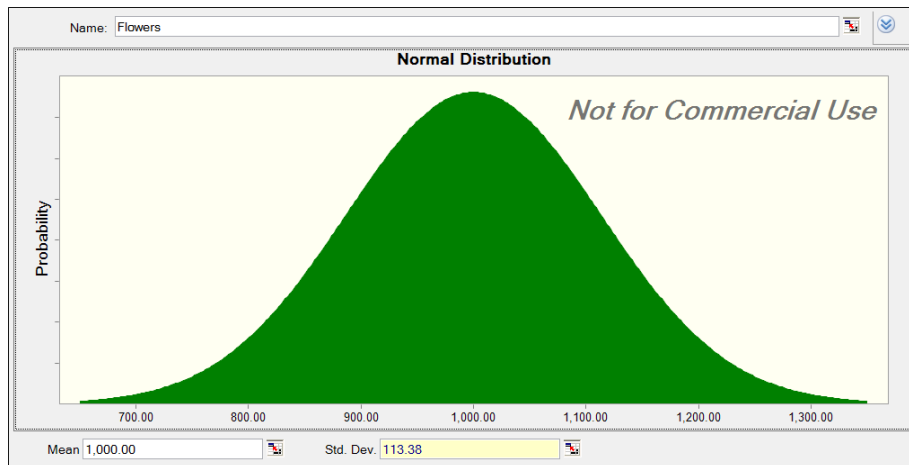


Figure 2:

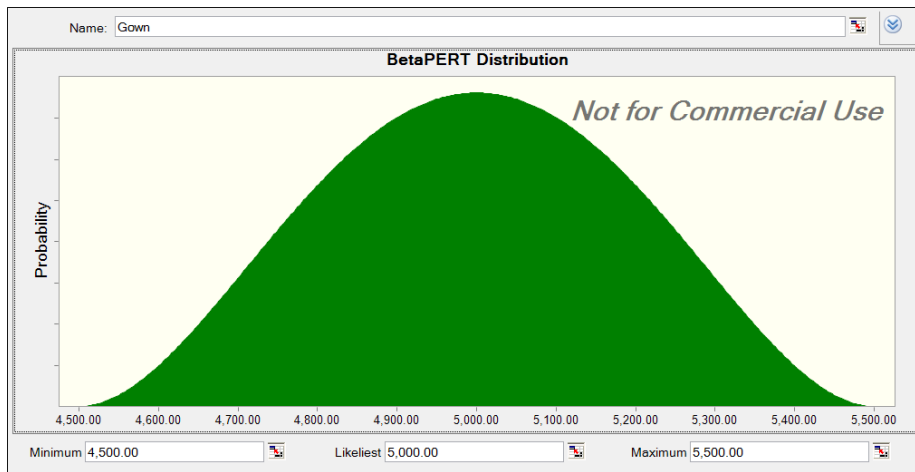


Figure 3:

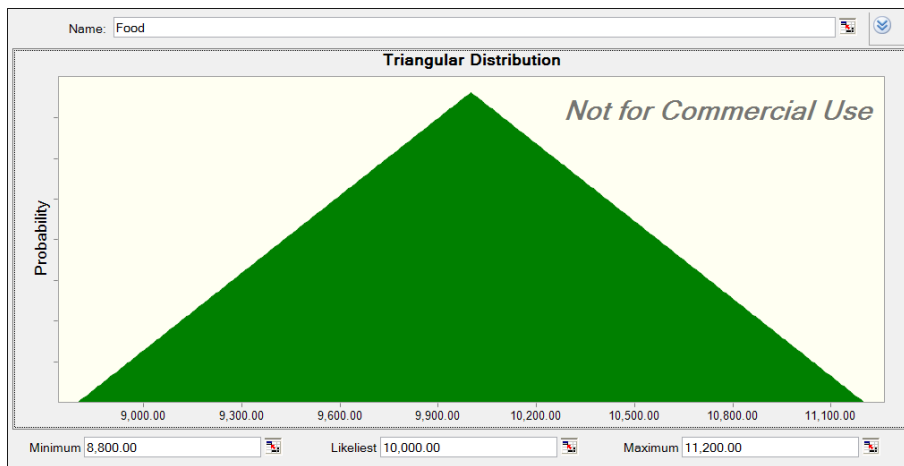


Figure 4:

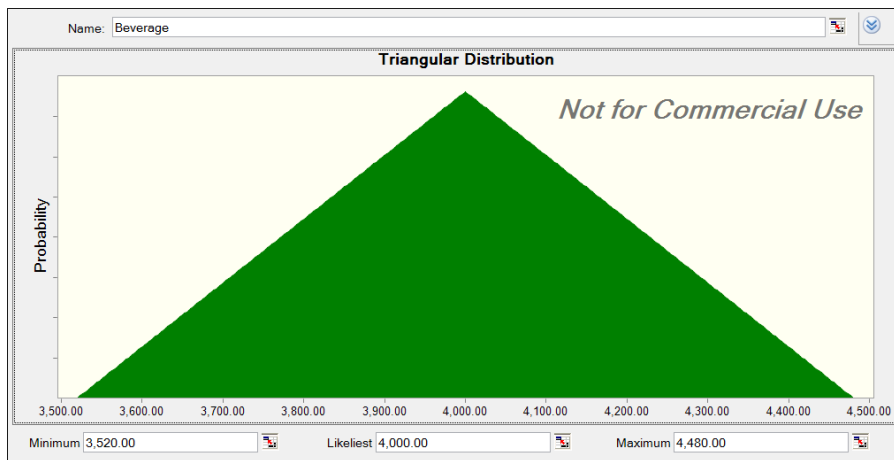


Figure 5:

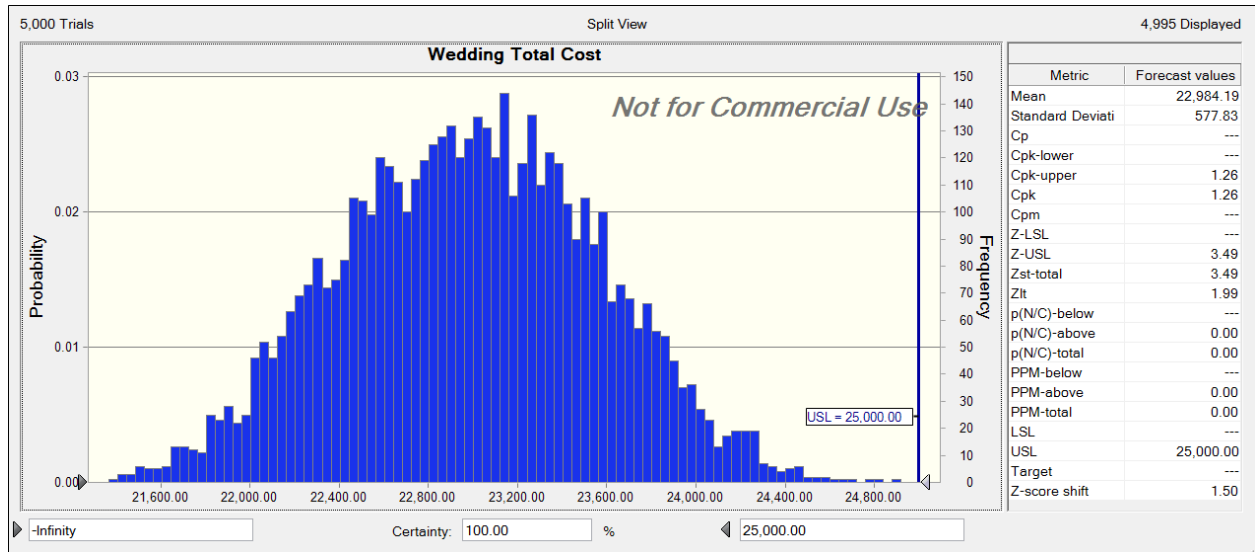


Figure 6:

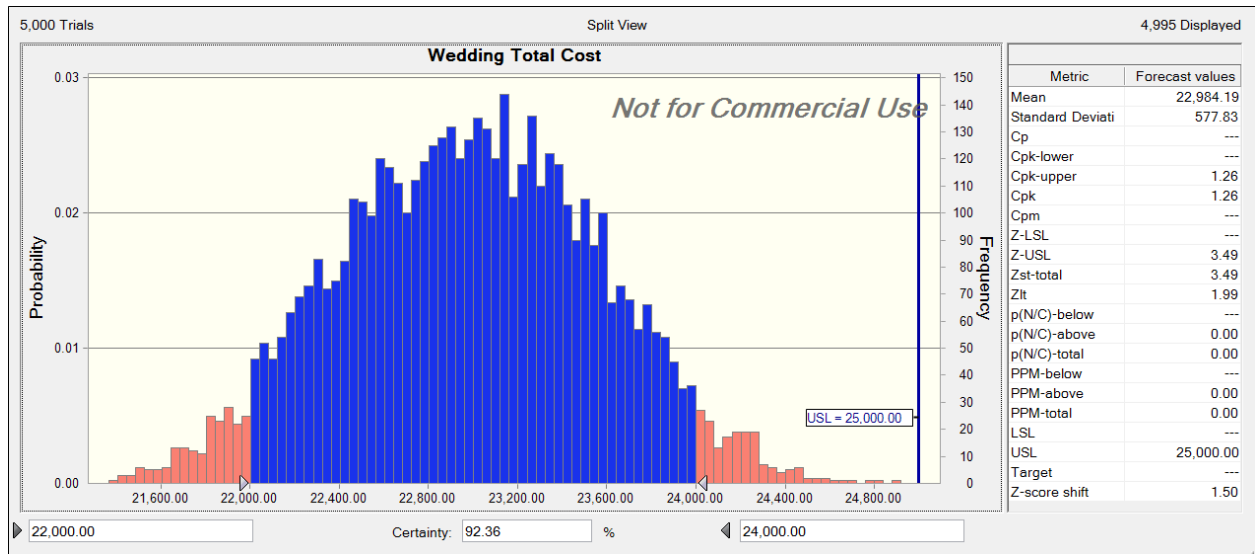
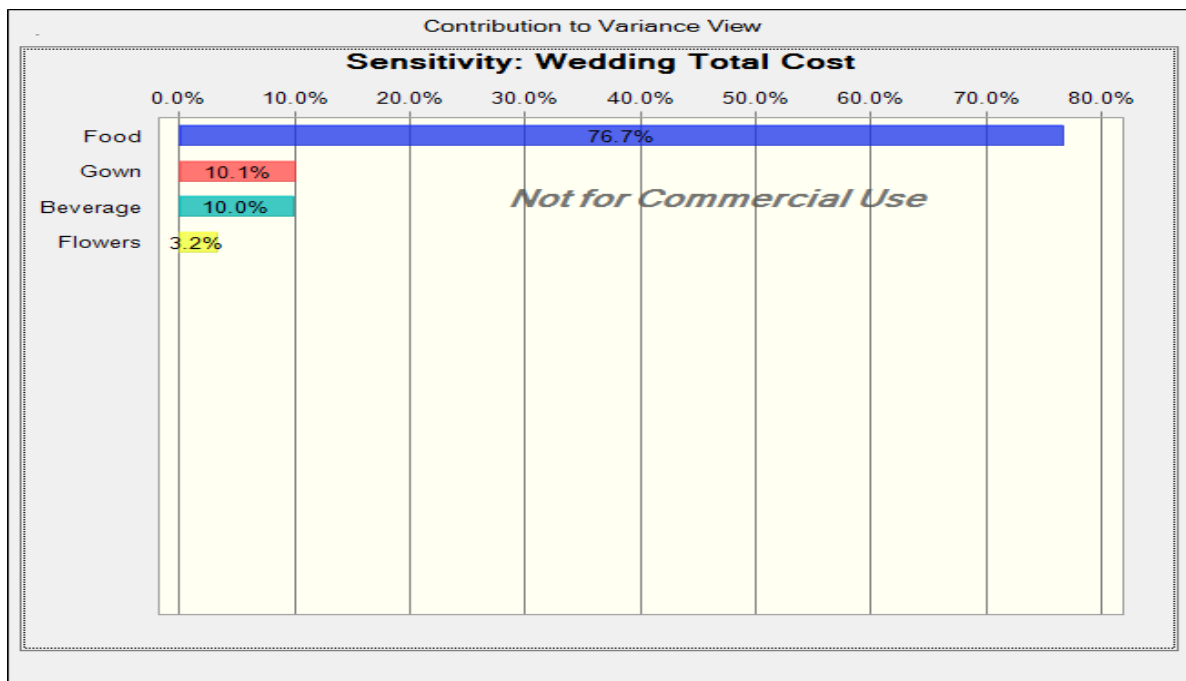


Figure 7:





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# Create-Your-Own-Cipher Assignment to Return Creativity to Cryptography

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## ABSTRACT

Business has always had a need to communicate securely over short and long distances. The industry has come to rely on technology-based encryption systems. This article presents an assignment that teaches students to use creativity instead of technology to design and execute a substitution cipher to securely communicate a short message using knowledge of their campus as the cipher key. This assignment works across several levels of Bloom's taxonomy and meets higher level learning objectives. Several extensions to the assignment are presented along with a suggested grading rubric.

**Keywords:** Creativity, Assessment, Secure Communications, Cryptography

## INTRODUCTION

The history of cryptography in business is punctuated by human ingenuity. Commercial interests have long needed secure communications that were met in a variety of ways. Until the Second World War, human creativity defined secure communications. With the onset of the Enigma Machine and other technology, the role of creativity took a back seat to technology. The famous Enigma Machine was originally developed for business usage and encrypting business messages. The Enigma Machine was adopted by the German military and used to secure German communications throughout World War 2. The Enigma Machine marked a turning point where machines began doing the cryptography. Once computers become dominant in cryptography, human operators began to lose creativity and became operators that entered in keys and machine parameters without needing to understand the underlying algorithms or technology. Business students with an IT background are able to implement a state-of-the-art Public Key Infrastructure (PKI) solution without understanding the creative underlying cryptographic principles and technology.

Research into creativity is a relatively recent development. One of the seminal events that sparked creativity research was a meeting of the American Psychological Association in 1950 where the president challenged the attendees to research the concept of creativity (Kaufman & Beghetto, 2009). Subsequent research has broken creativity into what is termed Big creativity and Little creativity. Big creativity is considered to be eminent and clear-cut contributions to a field of study. Little creativity is considered to be everyday creativity that people develop as they go through their daily lives. Kaufman and Beghetto (2009) propose that are an additional two categories of creativity. The first is termed Pro-c for professional creativity to describe the creativity of workers finding new and better methods to complete their jobs. The second is termed Mini-c for creativity that is novel and meaningful interpretation of events and experiences. Mini-c applies to students learning new concepts and developing new interpretations of what they are learning.

This paper describes an assignment that requires students to be creative and author a unique substitution cipher. This assignment lies somewhere between Mini-C and Pro-C and forces students to be creative and not rely on technology. Creative thinking is at the top of Bloom's taxonomy and should meet course and program learning objectives.

## THE ASSIGNMENT

The goal of the assignment is to have the students create a substitution cipher that would only be understood by students at your school. The algorithm(s) that encrypt and decrypt plaintext must rely on information available only to students on the campus. This assignment may be made individually or to small groups. The student created cipher must meet the following requirements:

- 1) The cipher must only be understood by someone who knows your campus. The cipher must require specialized knowledge of the campus.
- 2) The cipher must be capable of handling an eight character message using any of the 26 letters in the English alphabet with the possibility of letters being repeated more than once.

- 3) The cipher cannot be broken by information researched on your school's website or a satellite photo. The information must be accessible by anyone on the campus but not to anyone who does not have access to the campus.
- 4) The cipher must be relatively permanent and must be valid after the end of the current semester or school year.
- 5) Ideally, the cipher should be able to securely communicate a message in plain sight (steganography).
- 6) If the cipher requires moving around the campus to different locations, the student(s) must define a starting point that is only apparent to students in the class or degree program.

Students are encouraged to be creative and use unique features on their campus. For example, at Henry Ford Community College there is a scale model of the solar system that spans the entire campus. The sun is placed in the lobby of the solar system with various planets located in buildings and in pedestrian areas across the campus. The University of Baltimore has a permanent art collection on display in their Academic Center. These unique features should be exploited by the students in this assignment.

Students must turn in a written description of their cipher and provide a table that lists the letters of the alphabet and how each letter is represented in the substitution cipher. The students are required to present their cipher in class. They are required to clearly explain and present their cipher. Everyone has to walk through an example where a standard plaintext word is given to them in the syllabus. The students will also have to walk through a second example during their presentation using plaintext that they will be given ten minutes prior to the presentation. The second example typically uses words that contain a double or repeated letter, a letter from the end of the alphabet, and at least one uncommon letter. Examples of this include beehive, orthodox, queenly, wheeze, and zoology. Encrypting a difficult message under a time deadline will help assess the usability of the cipher.

## ASSESSMENT

One of the benefits of this type of assignment is that it pushes students into higher thinking. If we examine this assignment in light of Bloom's revised taxonomy, the assignment is asking students to function at several levels of the taxonomy including the highest level. Assessment has become the cornerstone of modern education. One of the most popular tools for assessment is Bloom's taxonomy which was developed by a team of educators even though it was named after Benjamin Bloom (Pickard, 2007). The taxonomy defined six levels of thought of increasing complexity. The taxonomy was revised to accommodate additional dimensions and be less hierarchical. The original and revised taxonomies both show the need for educators to teach and assess students at higher levels of thought. Researchers have proposed a variety of extensions and modifications to apply Bloom's taxonomy to a variety of disciplines and technologies (Churches, 2008).

Using a taxonomy may change the way educators teach and assess their students. For example, using multiple choice tests to assess student learning works at lower levels of thinking (Momsen, Offerdahl, Kryjevskaja, Montplaisir, Anderson, & Grosz, 2013). Writing tests at higher levels of thought is very challenging and higher level assessment is best done via other types of assignments.

This assignment has several learning objectives at different levels of Bloom's taxonomy.

- 1) Author a unique substitution cipher. To create a new substitution cipher, students must define and interpret the basic principle of a substitution cipher.
- 2) Apply the cipher to at least two sets of plaintext.
- 3) Demonstrate the cipher to faculty and other students.
- 4) Differentiate, evaluate and judge the ciphers of other students.

## POTENTIAL GRADING RUBRIC

Grading this type of assignment can be very challenging. Information Technology and Information Assurance students seem to prefer objective and not subjective grading. Having a well written rubric can minimize the appearance and impact of subjective grading and insure more uniform grading of the student ciphers. Rubrics should contain assignment objectives with different levels of student achievement (Andrade & Du, 2005; Elkina & Munthy, 2006). Rubrics can provide students with a mental image of exactly what their instructor is expecting from them. Table 2 contains a potential rubric for this assignment.

**Table 1: Taxonomies and Descriptive Verbs**

Bloom's Original Taxonomy	Revised/Updated Taxonomy	Descriptive verbs
Evaluating	Creating	Assemble, author, create, construct, design, develop, formulate, plan, program, publish, remix, test, write
Synthesis	Evaluating	Appraise, argue, collaborate, define, evaluate, judge, moderate, select, support
Analysis	Analyzing	Appraise, compare, contrast, criticize, differentiate, discriminate, distinguish, examine, experiment, link, mash, test, question
Application	Applying	Apply, carry out, demonstrate, dramatize, illustrate, integrate, interpret, mash, operate, reverse engineer, schedule, sketch, solve, tag, use, validate, write
Comprehension	Understanding	Annotate, categorize, classify, describe, discuss, explain, identify, inferring, locate, recognize, report, select, translate, paraphrase
Knowledge	Remembering	Blog, bullet-point, define, duplicate, highlight, list, memorize, replicate, reproduce,

## POSSIBLE CIPHERS

To help explain the assignment, there are several sample solutions presented that meet the requirements at various levels. The following sample ciphers are presented: library shelf, parking lot, and local business signs.

### Library Shelf Cipher

Library Shelf Cipher – this cipher is based on the shelves in your college library. Most libraries have their fiction section shelved by Author name in alphabetical order. The student would pick a point in the fiction section of your library and give directions to the various shelves that would hold the books written by authors whose names will contain the plaintext letters.

1. The first and fifth week included quotes from a historical military figure. Go the shelf containing his writings and take the first letter of the figure's last name.
2. Move one aisle to the east and take the first letter of the last name of the first book on the top shelf at the end of the aisle closest to the circulation desk
3. Move down three shelves and take the first letter of the first book on the shelf.
4. Go to the shelf where you would find a fictional book written by the author of the text used in class. Go three shelves to the left.
5. Go two aisles directly to the west and take the first letter of the authors on that shelf.
6. Go to the aisle closest to the rest rooms and take the letter of the author names closet to the rest rooms.

### Faculty Parking Lot Cipher

This possible solution is based on the letters and bumper stickers on the license plates of unique vehicles parked in the faculty parking lot. For example the ciphertext might be:

- 1) The first letter of the license plate on the Blue Ranger 250 pickup
- 2) The third letter of the license plate on the Orange Challenger with vanity plates
- 3) The decal in the back window of the green 2008 Escape
- 4) The third letter of the license plate on the neon green Volkswagen
- 5) The fourth letter of the bumper sticker on the blue classic Corvette
- 6) The last letter of the political bumper sticker on the white van with the ladder rack

**Table 2: Potential Grading Rubric**

Criteria	Grading Weight	Missing	Inadequate	Needs Improvement	Adequate
Permanence of the cipher	15	No attempt is apparent for permanence	Routine or scheduled changes in the campus, staff, or routine will render the cipher useless	Non-routine changes in the campus, staff, or routine will render the cipher useless	The cipher is permanent
Does the cipher require knowledge of the campus	20	No knowledge of the campus is needed to use in the cipher	The cipher uses a minimal amount of campus knowledge	The cipher is not completely dependent on campus knowledge	The cipher cannot be executed without campus knowledge
The cipher can handle an 8 character message	10	The cipher cannot handle more than one character	The cipher can handle less than five characters	The cipher can handle less than eight characters but more than five	The cipher can handle eight characters
The cipher can handle all 26 letters of the alphabet	15	The cipher can only substitute 20 characters or less	The cipher can only substitute 23 characters or less	The cipher can substitute 26 characters but not handle duplicate characters without duplicating ciphertext	The substitute can substitute for all 26 characters and handle letter duplication without duplicating ciphertext
The cipher cannot be broken by campus information	15	No knowledge of the campus is needed to use in the cipher	The campus knowledge is easily found on the Internet by a novice user	The campus knowledge can be found on the Internet with diligent searching	The campus knowledge cannot be found on the Internet
Usability of the cipher	10	The cipher is unusable with the given instructions	The cipher is usable by expert users	The cipher is usable by intermediate users	The cipher is simple to use by any user
Quality of the classroom presentation explaining the new cipher and the two examples	5	No preparation was apparent in the presentation	The presentation was less than professional	The presentation was professional	The presentation was professional and captured student attention
First example	5	The cipher fails to encode this sample of plaintext	The cipher encoded less than half of the plaintext within the time limit	The cipher encoded a majority of the plaintext within the time limit	The cipher fully encodes this sample of plaintext
Second example	5	The cipher fails to encode this sample of plaintext	The cipher encoded less than half of the plaintext within the time limit	The cipher encoded a majority of the plaintext within the time limit	The cipher fully encodes this sample of plaintext within the time limit

## Parking Lot Cipher

This cipher is based on the campus having parking lots identified by letters. For example the message might be:

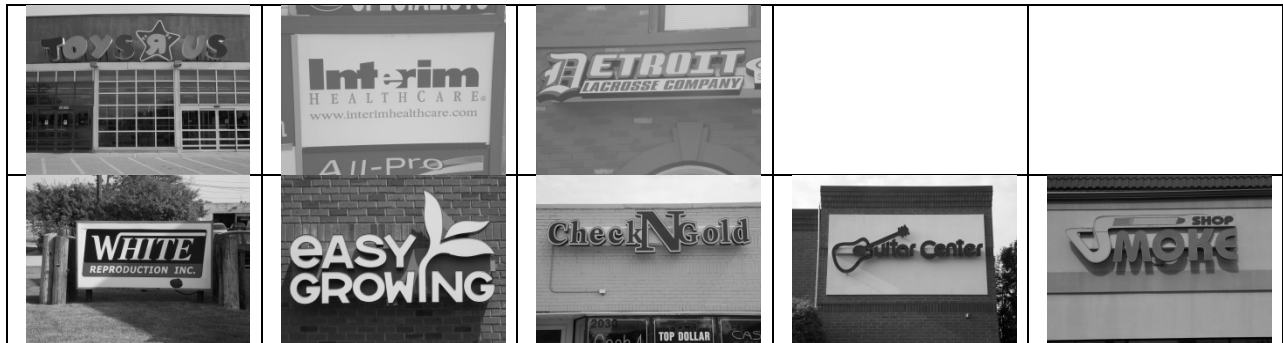
- 1) Which lot is by the place where the migrating geese stop traffic while crossing the road?
- 2) Which lot does Dr. Livermore park in?
- 3) Which lot is closest to the oak tree where the Ford children allegedly played?
- 4) Which lot is just east of the silver building?
- 5) Which lot is west of the building with the microwave antenna on the roof?
- 6) Which lot is closest to the oak tree that is surrounded by a bench and wooden deck?

## Local Business Sign Cipher

This cipher is based on finding letters in business signs that are different from all of the other letters on the sign. The one letter that is different on a business sign is the only letter that matters. Combining the different letters from a list of signs will reveal the plaintext message.

Toys r Us, Interim Healthcare, Detroit Lacrosse Company, White Reproduction Inc., Easy Growing, CheckNGold, Guitar Center, and the Smoke Shop.

**Table 3: Local Business Sign Photographs**



## POSSIBLE EXTENSIONS TO THE ASSIGNMENT

As with all assignments there are many ways to extend it and make it more challenging or beneficial to the students. If you have colleagues at other schools it would be interesting to swap student ciphers between the schools. Having ciphers from another school would enable a follow-up assignment of having students attempt to crack the ciphers from another school. Distributing student ciphers would require a consent form allowing their work to be distributed even if student names and other identifiers were removed from the ciphers. To avoid the challenge of obtaining student consent please consider passing out examples of ciphertext from the sample ciphers in this paper that are tailored to your environment.

Students may complain but they always seem to enjoy competitions. The class could be asked to evaluate the ciphers as they are presented and the winning cipher will get an extra point or a faculty-provided book. Students assessing other students is always challenging so it is helpful to provide a framework for students to evaluate the ciphers on. Rubric-based peer evaluations that coincide with faculty assessments are meaningful to students (Andrade & Du, 2005). Table four contains a suggested evaluation grid to pass on the students in the class.

**Table 4: Student Peer Evaluation Grid**

Evaluation Criteria	Team 1	Team 2	Team 3	Team 4	Team 5	Team 6
How Creative was the cipher?						
Was the cipher tied to your campus?						
Was the cipher Permanent?						
Did the cipher handle all 26 letters?						
What factors limit the permanence of the cipher?						
Did the presentation hold your interest?						

### CONCLUSION

It is important that we challenge our students with assignments that force them to think at higher levels on Bloom's Taxonomy. This assignment is an attempt to encourage creative thinking that builds on basic knowledge of ciphers. Requiring students to create their own cipher will teach them far more about secure business communications than having them memorize existing ciphers or learning to use encryption software.

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# Using a Retail Location Game to Explore Hotelling's Principle of Minimum Differentiation

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## ABSTRACT

An agent-based simulation game facilitates student discovery of the counter-intuitive logic and sub-optimal social welfare outcome of Hotelling's principle of minimum differentiation (Hotelling's Law) as an explanation for observed clustering of retail locations. Three-player, non-linear, and complex competitor behavior versions of the game then lead students to discover the limited applicability of the principle under more realistic assumptions. Finally, students use the game to see how the introduction of uncertainty improves the applicability of the principle in the multiple player version.

**Keywords:** Hotelling's Law, location theory, simulation

## INTRODUCTION

Brown, (1993) identifies "the four concepts that lie at the heart of our understanding of the location of retail activities as "central place, spatial interaction, bid rent and the principle of minimum differentiation." Enhanced student understanding of the principle of minimum differentiation as a theoretical explanation for the observed clustering by similar retail sellers at a central location is this paper's primary objective. The student learning objectives pursued in this paper are: (a) an experiential understanding of how, given a strong set of assumptions, two competing sellers can arrive at an equilibrium that reflects the principle of minimum differentiation; (b) an understanding that this predicted equilibrium is not socially optimal in terms of minimizing the aggregate cost of purchases; (c) an understanding of the principle's sensitivity to changes in the underlying assumptions; (d) experience using agent-based model simulations to better understand different outcomes given different assumptions; and (e) an introduction to using and modifying agent based simulations to explore theoretical scenarios, especially scenarios that do not move to a stable equilibrium.

## THE PRINCIPLE OF MINIMUM DIFFERENTIATION

The principle of minimum differentiation was developed by Hotelling, (1929) as part of his paper on duopoly price stability, "Stability in Competition." Hotelling used variable distances between buyer and seller as an example of one-dimensional product differentiation. Hotelling's objective was to show why competing sellers choose to minimize the differences between each other's products and how this creates price stability in a duopoly. This conclusion of price stability has since been rejected (D'Aspremont, Gabszewicz, & Thisse, 1979); however, the principle of minimum differentiation continues to be discussed as part of seller location theory (e.g. Irmen & Thisse, 1998; Kats, 1995), and has become known as "Hotelling's Law."

The principle of minimum differentiation can be applied to any single dimension of potential competition between sellers (e.g. quality, color, service, etc.) and can be extended to non-traditional markets such as politics (Haan & Volkerink, 2001). The predicted outcome of two sellers choosing to minimize differences in their products and locate next to each other in the middle of a market area is dependent on a set of strong assumptions. If any of those assumptions are relaxed, the predicted minimum differentiation behavior no longer occurs (Brown, 1993). Hotelling's assumptions are: (1) only two, profit maximizing sellers; (2) both sellers sell identical products; (3) sellers' production costs are zero; (4) the market is bounded and linear (e.g. a strip shopping mall or an ocean beach); (4) Buyers pay for transportation costs (i.e. sellers charge identical f.o.b prices; (5) transportation costs are a constant function of distance travelled by buyers; (6) differences in transportation cost is the sole basis for a buyers' selection of a seller; (7) sellers initially are unable to move from their initial, fixed location in the market; and (8) buyers are evenly distributed, utility maximizing, and they have identical and completely inelastic demand (they will all buy the same quantity, regardless of price).



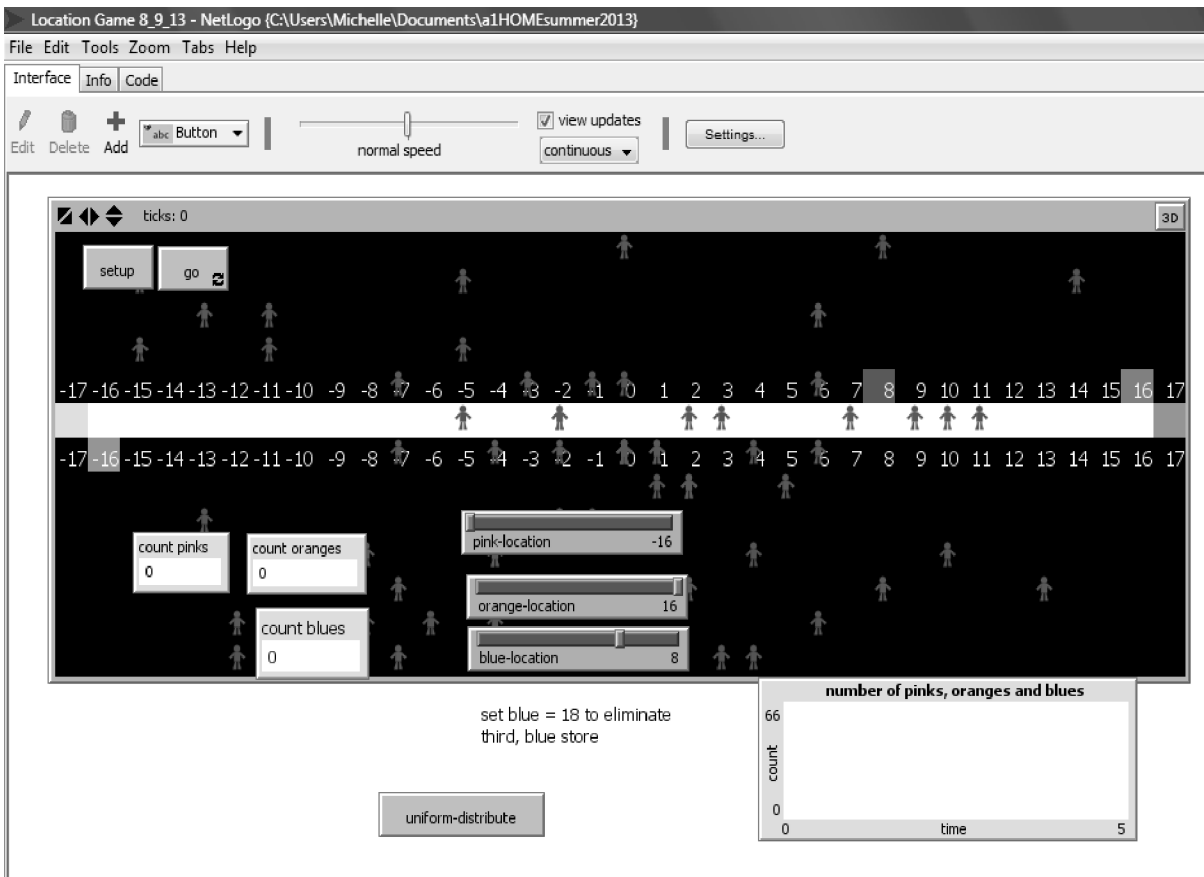
Hotelling then argued that if one of the sellers is allowed to change location, they will choose to minimize the only differentiating aspect of their product (transportation costs) and move adjacent to their competitor so that they capture the “long” side of the market. Chamberlin, (1933) showed that if both sellers are allowed to repeatedly relocate, a pattern of mutual “leapfrogging” to the longer side of the market occurs. Leapfrogging stops and equilibrium occurs when both sellers choose the same location in the middle of the market, so there is no longer a “long” side of the market. The game used in this paper allows students to participate in this leapfrogging behavior to understand how this equilibrium can occur.

## THE LOCATION GAME

Student-players of the game decide where to locate their store in a world defined by an agent-based simulation written in NetLogo (Wilensky 1999). NetLogo is available as freeware at <http://ccl.northwestern.edu/netlogo/>. NetLogo is an excellent teaching tool due to its clear, visual representation of agents following programmed strategies as they move around in an environment that can also be defined by the programmer. This paper’s Location Game is available as part of the NetLogo “community models” found at <http://ccl.northwestern.edu/netlogo/models/community/>. Models are listed in reverse chronology, The Location Game can be found under August 2013. The game can be run on the web, or it can be downloaded and run/modified on a student’s computer after they download the free NetLogo software. The Location Game simulation includes self-directed learning exercises under the “information” tab. These exercises reflect this paper’s learning outcomes.

Figure 1 shows the NetLogo interface screen for the “Location Game.” The game’s parameters, movement and results are displayed on this screen. The Figure 1 starting screen is obtained by opening the Location Game and then clicking the “setup” button. Repeatedly clicking the “go” button after setup advances the simulation one round (tick) at a time. The counters and graphs on the interface screen keep track of the game’s outcome parameters.

**Figure 1: Location Game Startup Screen**



Netlogo is based on two types of programmable agents: stationary “patches” that represent the squares that make up the game space, and “turtles” that move around the space and can interact with each other and with the patches. The Location Game defines a row of white patches in the middle of the space as an aerial view of a retail mall. The game defines two types of turtles as “buyers.” There are 33 red buyers and 33 blue buyers. Buyers are identical except that red buyers move to the right in the mall and blue buyers move to the left. Buyers go to the mall every day to buy lunch. Hotelling’s starting assumption of “evenly distributed” buyers is obtained by clicking the “uniform” button after clicking setup. This changes the starting distribution to an evenly distributed set of 33 red buyers on one side of the mall and 33 blue buyers on the other side. This distribution will result in identical simulation outcomes. The Location Game setup default is a more realistic assumption of a random distribution of 33 red and 33 blue buyers throughout the game space.

Student-players are sellers of lunch. The only difference between sellers is their location, represented by a pink and an orange patch along the mall. Players choose where to place their stores using the “pink-location” and “orange-location” sliders on the interface screen. Slider numbers correspond to the labeled patch locations on the screen. Player location choices are reflected after setup has been clicked. While the option for a third (blue) seller is built into the program, the blue seller is initially eliminated from the game by setting their location at a point beyond the end of the mall (i.e. > 17).

At noon every day, individual buyers in the mall’s neighborhood all begin to move toward the mall to buy lunch. To initiate this movement, the “go” button is clicked. The simulation stops after each round, so repeated clicking of the “go” button progresses the simulation to its conclusion. The mall is accessible at all points so the individuals move in a straight line until they reach the mall. Multiple buyers can occupy the same patch simultaneously; in that case, only the top buyer can be seen. Once they reach the mall, red buyers begin to move to the right and blue buyers begin to move to the left. Each individual moves forward one square or patch, looks left and right (random sequence) and enters the first seller they see for lunch. When a buyer enters a seller, they are counted as that seller’s customer and they exit the game. If the buyer reaches the end of the mall, they turn around and begin to move back down the mall. When this happens, they switch to the other color so that they will move in the correct direction. This means that a seller will capture all buyers between themselves and the end of the mall. Even though the end-of-the-mall buyers may first myopically move away from the nearest seller, they will eventually reach the end of the mall, turn around, and head back to the closest seller. A seller can expect to also capture one-half of the buyers who start in the area of the mall between the two sellers. This occurs because while all the buyers of one color in this area move away from a buyer, all the buyers of the other color move toward that buyer. With the uniform distribution, this expected equal sharing always occurs. With the more realistic random distribution, repeated simulations will average this outcome; however, significant variation can occur between simulations.

If needed, the initial settings can be returned to by simply re-opening the program. When the model is open, clicking on the “information” tab at the top of the interface screen will bring up a description of the simulation, as well as the questions which support the series of games described below. The “code” tab at the top of the interface screen brings up the NetLogo programming. Students are asked to modify this programming in Game 6 described below.

### **Game 1: Socially Optimal (Uniform Distribution)**

Individual students are asked to discover the socially optimal location for the two restaurants. This game familiarizes students with the simulation prior to competing with another student. Game one’s objective is to minimize the number of rounds or “ticks” of the clock needed before everyone finds a restaurant. The program keeps track of the ticks in the upper left of the game screen, just above the setup and go buttons. Students experiment with different store arrangements to determine the location that minimizes ticks. Keeping the distribution as uniform, students are asked to identify what the socially optimal location looks like, and if there is more than one socially optimal set of locations. Students test different ideas by running the simulations and noting the number of clicks (ticks) needed to have everyone find a restaurant. The unique, socially optimal arrangement is for each restaurant to be one quartile in from the edge (-8 and +8 in the simulation). The uniform distribution will result in identical outcomes for identical setups.

### **Game 2: Socially Optimal (Random Distribution)**

Individual students are asked to relax the uniform distribution assumption by *not* clicking the uniform button, thereby leaving the starting distribution as random. This is an opportunity for students to confirm that the expected

outcome is still socially optimal at (-8) and (+8); however, outcomes are not precisely the same in a more realistic, random initial distribution of buyers. This helps students begin to understand the nature of conclusions based on expected outcomes rather than absolutely predictable outcomes. Students are asked to run at least ten rounds to confirm that quartile locations are still the socially optimal locations.

### **Game 3: Principle of Minimum Differentiation**

This is the foundational game. Pairs of students are now asked to share a computer and compete with each other for the largest number of buyers. Starting with the socially optimal locations, students are then given the option to change the location of their store. Hotelling (1929) and Chamberlin (1933) predict repeated movement to a point adjacent to the competition, on the “long” side of the distribution, and that should be reflected in students’ iterative choices. To emphasize this iterative approach, students are asked to sequentially make decisions: “highest-customer player chooses first, then other player, then run simulation, then repeat.” A new equilibrium is reached where both stores are located opposite each other in the middle of the mall (both at “0”.) This central location is the point where the only thing that differentiates the sellers (location) is minimized, hence principle of minimum differentiation. To demonstrate the idea that profit maximizing competition can reduce social welfare without increasing profit, students compare this new equilibrium outcome with the socially optimal outcome from game 2 in terms of number of ticks needed for all buyers to find a seller, as well as the number of patrons each seller captures. Students are also asked to begin to step back and evaluate just how robust and realistic the principle of minimum differentiation really is at explaining the observed phenomenon of stores clustering together, given the extensive set of assumptions. This questioning segues to the next set of games where the relaxation of some assumptions is used to explore the limitations of the principle of minimum differentiation.

### **Game 4: Three Players**

Chamberlin (1933) challenged Hotelling’s contention that a third seller (and in fact any number of additional sellers) would follow the principle of minimum differentiation and choose to locate next to the first two sellers. Chamberlin predicted an unstable leapfrogging where two sellers locate at the quartiles and the third seller is somewhere in between. To demonstrate this for students, a third student-player is added to the game, represented by a blue-patch seller. All other assumptions remain the same; nonetheless, with three stores, there is no longer an equilibrium of stores minimizing differentiation by locating at the center.

### **Game 5: Unequal Market Power and Complex Competitor Behavior**

The game returns to two players; however, one of the players now controls two of the locations. One player is a start-up seller trying to decide whether or not to enter the market. The other player is an established seller that has the power to open a second location. The assumption of purely profit maximizing seller behavior is relaxed by assuming a more complex behavior. The game begins with the incumbent player’s (orange) store located at one end of the mall (16). The other two stores are initially set at 17 to move them out of the game. Run the game a few times to verify that as a monopolist, the incumbent seller captures the entire market, regardless of where they locate. Player two (pink) is now given the option of choosing a location. The incumbent (orange) seller cannot move from their starting location at the end of the mall. To create a more complex behavior, assume the incumbent is irrationally aggressive and will use their power to open an additional (blue) location to try to drive any competition out of the mall. Assume the new (pink) seller will fail if they obtain less than fifteen buyers. The incumbent’s new, blue, second-store location is chosen after the new (pink) seller chooses their location. The new-store player is asked to decide where to locate, or if they should even try. The incumbent responds aggressively with their second, blue store location. If the new seller can attract at least fifteen buyers, then the new seller wins the game. If the incumbent can prevent the new seller from attracting at least fifteen buyers on a consistent basis, the incumbent wins.

### **Game 6: Circular Mall and NetLogo Program Modification**

In this game, the assumption of a bounded, linear market is changed to a circular market. The scenario is changed so that when buyers reach the end of the mall, they “wrap” around the back of the screen and reappear at the other end of the mall, still the same color and still moving in the same direction. This is the NetLogo representation of a circular shopping mall. This is the default movement for NetLogo, so it can be created by having students download and modify the program. The only modification needed is to eliminate the part of the program that causes buyers to turn around at the edge of the mall. Code can be turned off by placing a semicolon in front of lines, thereby turning the line into a comment line. The two lines of code to be eliminated for creating a circular scenario are identified in the code tab by ELIMINATE FOR CIRCULAR CODE (START) and STOP. Elimination of this code eliminates

the creation of end-of-mall colored patches that tell the buyers to turn around. With a circular mall, any combination of locations results in the same outcome for two players, thereby creating another exception to the principle of minimum differentiation.

### **Game 7: Three Players, With Uncertainty**

With uncertainty, the validity of the principle of minimum differentiation begins to increase, even if some of Hotelling's assumptions are relaxed (Brown, 1989). To demonstrate this, three players are asked to simultaneously choose their location. (To prevent simulation program errors, the orange and the blue seller cannot choose the same location). In this scenario, players do not know where the other two players will choose to locate. Given this uncertainty, the predicted outcome is for all three players to locate in the middle of the mall, in sharp contrast to the perpetual leapfrogging observed in Game four.

## **CONCLUSION**

While Hotelling's principle of minimum differentiation as an explanation for equilibrium in a duopoly has been disproved, the principle as an explanation for observed clustering of retail sellers represents an ongoing contribution to retail location theory. While location choice is usually more complex than simple minimization of differentiation, the iterative logic that compels competing sellers to move to a central, clustered location is captured by Hotelling's principle. This paper's Location Game introduces students to the strengths and weaknesses of this "Hotelling's Law" as an explanation for the observed clustering behavior by competitors in areas as diverse as retailers choosing where to locate stores and politicians in two-candidate elections choosing to move to the center of the political spectrum.

As sellers increasingly compete for internet sales, "distance travelled" can be represented by the number of clicks needed to reach a seller's page. In this market, Hotelling's assumptions may be more realistic and seller uncertainty may be significant given the speed at which competitors can change their virtual locations. As a result, the principle of minimum differentiation's iterative logic may offer a significant contribution to an understanding of the evolving world of internet sales.

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# Creating Entrepreneurial Learning Communities in Higher Education

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## ABSTRACT

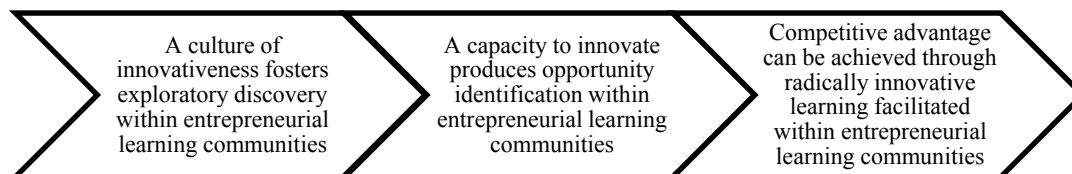
The Kauffman Foundation reported in 2006, “Increasingly, universities themselves are agents of entrepreneurship.” According to the University of Michigan, “entrepreneurship promotes, implements, and rewards innovation,” and is the catalyst behind the creation of the university’s entrepreneurial learning community. This community is a university-wide network designed to “enable the free flow of ideas between students” and “concentrate students in a culture of innovation.” By connecting academic disciplines, entrepreneurial learning, and business opportunities, this web of innovation facilitates the creation of interdisciplinary learning, creative initiatives, and market-focused entrepreneurship. A proposed framework of entrepreneurial learning (Lugar-Brettin, 2013) provides a starting point for creating university-based entrepreneurial learning communities by identifying objectives for these innovation networks based on research on market-driven innovation.

**Keywords:** centers for creative collaboration, centers for entrepreneurship and innovation, centers for experiential learning, culture of innovation, entrepreneurial learning communities, exploratory learning, opportunity identification, radical innovation

## A MODEL FOR ENTREPRENEURIAL LEARNING COMMUNITIES

Extant literature in the areas of market learning, entrepreneurship, and market-driven innovation provide a starting point for creating entrepreneurial learning communities across disciplines. Hurley and Hult (1998) identified a model of market-driven innovation by which a firm’s culture of innovativeness, combined with a capacity to innovate, could result in a competitive advantage. This model can be adapted to create entrepreneurial learning communities in firms, in university classrooms, and through university joint ventures among colleges or external stakeholders.

**Figure 1: Market-driven innovation process and characteristics, adapted for entrepreneurial learning communities**



## CREATING A CULTURE OF INNOVATIVENESS THROUGH EXPLORATORY LEARNING

The first step in creating an entrepreneurial learning community is to identify the type of innovative network in which collaborative learning, entrepreneurship and innovation, and experiential learning will occur. The community needs to be designed to cultivate a culture of innovativeness that enables openness to new ideas and a strong support of innovation (Hurley & Hult). This culture provides an organizational framework in which individuals and groups can conduct ideation, explore opportunities to learn and create in an entrepreneurial context, and conduct market discoveries using varying methods of research.

In order to create entrepreneurial learning communities, networks should be designed to facilitate the identification, recognition, and creation of entrepreneurial joint ventures throughout the university and its stakeholder groups. Examples of these exploratory learning communities include:

- Entrepreneurial learning ventures between engineering and business, such as the University of Michigan’s Entrepreneurial Learning Community and Stanford University’s Biodesign program;
- Collaborative learning in business and healthcare, such as Arizona State University’s Healthcare Innovation program;

- Creative platforms for learning in performing arts and business, such as Arizona State University’s Performing Arts Venture Experience;
- Technology and business entrepreneurship education, such as the University of Maryland’s ACTiVATE program (Achieving the Commercialization of Technology in Venture through Applied Training for Entrepreneurs).

Adapting the market-driven innovation process to university entrepreneurial communities would require a focus on exploratory market learning (Lichtenthaler, 2009) designed to “recognize opportunities” in order to “pursue new ventures” (Lumpkin & Lichtenstein, 2005, p 451). These opportunities could include creating innovative processes for idea development across the disciplines, development and commercialization of new products and processes to create intellectual property across the university, and incubation of innovative businesses for which the university is well-positioned to assist. Vitale, Giglierano, & Miles (2004) provide exploratory market learning characteristics that may be adapted to establish objectives for the creation of entrepreneurial learning communities with cultures where innovation is cultivated; implementation will vary based on universities’ stakeholders (students, academically-qualified faculty, administrators, and professionally-qualified experts).

**Table 1: Exploratory market learning characteristics adapted to design entrepreneurial learning community objectives**

Exploratory learner firms excel at:	Suggested exploratory learning-focused objectives for designing entrepreneurial learning communities:
Detecting and analyzing emerging technological trends and market shifts	Communities should be designed to facilitate the processes of opportunity recognition and investigation of emerging technological trends and market shifts through creative collaboration.
Acquiring and utilizing market knowledge in decision making	Communities should be created to facilitate the processes of acquisition and utilization of market knowledge to make optimal decisions about opportunities.
Creating processes for knowledge management and institutional memory	Communities should be designed with processes to enable market and technology transfer* through the university, in order to create collaborative innovation between universities and market partners that result in creative solutions. *These creative solutions may or may not be commercialized innovations; the priority is on the process of entrepreneurial learning from which the solutions emerge.

### CREATING A CAPACITY TO INNOVATE THOUGH OPPORTUNITY IDENTIFICATION

Opportunity identification is a process by which entrepreneurs utilize market intelligence to recognize and evaluate the short- and long-term value of prospective market opportunities. Exploratory scanning is “the search for technology and market information that is new to the organization” intended to identify future needs of customers. This type of discovery tends to be associated with a higher risk of failure given the cost of exploration (Atuahene-Gima & Murray, 2007, pp 2-3). Exploitative opportunity scanning involves an “information search within a well-defined and limited product/market solution space closely related to the firm’s previous experience.” This type of identification is intended to detect current market needs that could be reached with incremental adjustments to the existing product/market mix. This type of identification is less likely to present significant market and financial risk in its context of a limited market space. Firms with a culture of innovativeness are open to opportunities identified through exploration and exploitation, though radical innovators tend to prefer exploration because of the profitability associated with “the ability to evaluate and utilize outside knowledge and exploit new market opportunities” to “new commercial ends” (Cohen & Levinthal, 1990, pp 128-129).

Entrepreneurial learning communities should be designed to facilitate the acquisition and analysis of exploratory and exploitative market discoveries. Examples of opportunity-focused learning communities include:

- Entrepreneurial learning ventures, such as the National Center for the Middle Market studies created by GE Capital and the Ohio State University’s Fisher College of Business;

- Collaborative learning in business and emerging markets, such as Northeastern University’s Center for Emerging Markets, and Northwestern University’s entrepreneurship network with its “dynamic ecosystem of entrepreneurship and innovation activities” in which all faculty and students are involved;
- Creative platforms for collaborating, designing, and launching creative arts ventures such as Talenhouse, which offers “free tools and potential funding to launch collaborations” through their talent search;
- Technology and business entrepreneurship education, such as Worcester Polytechnic Institute’s Bioengineering Institute where “investigators regularly collaborate across disciplines to address new technological paradigms” in intellectual property creation.

The following is a list of characteristics of opportunity-focused firms (Vitale & al.) that may be adapted to form objectives for the development of entrepreneurial learning communities with the capacity to innovate.

**Table 2: Opportunity-focused firm characteristics adapted to design entrepreneurial learning community objectives**

Opportunity-focused firms:	Suggested opportunity-focused entrepreneurial learning community objectives:
Regularly collect and update information on customers’ decision making processes (exploitation)	Communities should be designed to create and apply research and field experience on acquiring, analyzing, and utilizing customer, competitor, and channel data to design and implement market plans.
Focus on new product development and actively seek new markets to target (exploration)	Communities should be designed to create and apply research on new product development, new market creation, and increasing customer value at all levels of the market channel.
Seek to gain first-mover advantage in markets in order to focus on not missing opportunities, even if failure occurs as a result of pursuit of high-risk ventures (exploration)	Communities should be designed to create and apply research on how market innovator firms analyze the short- and long-term risk of pursuing opportunities that require a strong capacity to innovate, even if the opportunities present the risk of significant financial and market losses.

## COMPETITIVE ADVANTAGE CAN BE ACHIEVED THROUGH RADICAL INNOVATION

Radical innovation is strongly associated with a competitive advantage (Hurley & Hult). Radical innovation emerges from radically innovative thinking, defined as the ability to generate new ideas, products, services, or processes. Radically innovative thinking can produce advances that “significantly alter the consumption patterns of a market” (Zhou, Yim, & Tse, 2005, p 43). This type of thinking is best modeled by firms that are willing to cannibalize current profits for future opportunities, actively uncover market opportunities, and nurture a strong tolerance for risk (Tellis, Prabhu, & Chandy, 2009). Radically innovative firms emphasize new product development, timing and position of market entry, and operational efficiencies (Manu, 1992, and Siguaw, Simpson, & Enz, 2006).

Entrepreneurial learning communities should be designed to facilitate the creation of innovation champions, future-oriented market decision-makers, and radically innovative product and service inventors. Examples of radical innovation-focused learning communities include:

- Entrepreneurial learning in radical innovation ventures, such as Stanford University’s Center for Foresight and Innovation that provides free resources on “creating a radical idea that becomes a new business, product, or service” and “building an organization that supports the ongoing development of radical ideas” and innovation;
- Collaborative learning in business and radical innovation, such as the Innovation Center Think Tank that provides an “immersive, interactive, no-holds-barred journey” through radically creative solution development;
- Creative platforms for collaborating, designing, and launching ventures such as the Ohio University’s Innovation Engine Accelerator digital media incubator program;

- Technology and business entrepreneurship education, such as Ohio University’s Biotechnology Research and Development Facility “guidance in the commercialization aspects of a technology” from research and development, to market.

The following is a list of characteristics of radical innovator firms (Vitale & al.) that may be adapted to develop objectives for the development of entrepreneurial learning communities with a radical innovation orientation.

**Table 3: Radical innovator firm characteristics adapted to design entrepreneurial learning community objectives**

Radically innovative firms:	Suggested radical innovation-focused entrepreneurial learning community objectives:
Introduce products that are significantly different from those in the current market	Communities should be designed to create and apply best practices in developing radically innovative and significantly different market offerings.
Strategically support champions of innovation at every level of the organization, and are willing to pursue new products that require cannibalization of existing product offerings and short-term profits	Communities should be designed to train innovation champions and simulate decision-making that could result in the cannibalization of existing product offerings and short-term profits, in order to introduce radically innovative product offerings.
Emphasize future market opportunities and prefer investments that results in higher returns, even at the risk of higher losses	Communities should be designed to emphasize future market higher-risk, higher-return opportunities despite the potential for failure or loss.

## CONCLUSION

A framework for entrepreneurial learning communities combines exploratory market learning, opportunity identification, and radically innovative process-based learning (Hurley & Hult). Entrepreneurial and radically innovative market opportunities largely exist within unknown solutions or undiscovered opportunities (Furr, 2011). Entrepreneurial learning ventures, collaborative learning networks, creative platforms for learning, and technology and business entrepreneurship may be facilitated through centers for creative collaboration, entrepreneurship and innovation, experiential learning, and entrepreneurial learning communities. These structured approaches to entrepreneurial discovery, research, and practice create innovative webs connecting applied research, academic discovery, and uncovered market opportunities.

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# Teaching Management Principles by Integrating Video Clips to Enhance Learning

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## ABSTRACT

This article gives management instructors a visual method to help students more clearly understand key management principles. This teaching methodology utilizes movie clips to reinforce concepts in a vivid, memorable way.

We present briefly key management principles found in popular management textbooks. With each video clip, we provide summary detail (e.g., video clip time) for instructors to help them in their decisions to integrate specific movie clips into their lectures. We have explained how management topics are emphasized in specific clips. Further, we have shared discussion questions and assignments found to be effective.

Today's students are bombarded with visual images and adapt quickly to visual presentations in the classroom. We have found video clips to be a very effective method of teaching management concepts. These video clips have helped our students gain a memorable understanding of how a management principle can be applied in business situations. We have received very positive student feedback on the use of short, powerful video clips.

**Key Words:** film, video clips, management principles, teaching methods

## INTRODUCTION

The purpose of this article is to give management instructors another tool to help students more clearly understand management principles. This teaching approach utilizes video clips and films to reinforce concepts in a vivid, memorable way. Following the background section that addresses other research regarding the use of film in the classroom, we present several management principles found in popular textbooks. Each principle is identified briefly, followed by the name of the movie and the length of time used in the clip. Lecture notes, discussion questions, and assignments are also offered. See Table 1 at the end of this article, which indicates the source information to access the video clips.

## BACKGROUND

Students are bombarded with visual devices such as desktops, laptops, cell phones, and electronic tablets. Further, students can tap into vast video repositories through the internet. Recently, a study by Hedge, Seem, and Martinez (2011) found that their business students prefer video to text; they also found video content to be more engaging than text. Reading textbooks is important, to be sure; however, viewing video clips can reinforce concepts and encourage stimulating discussion.

Using movies, video clips, and television has been used for many years in management education. Use of film can be a powerful teaching medium to show application of theories and to facilitate discussion of management concepts. Showing video clips from popular feature films and television shows was promoted by Giaio and Brass (1985) as a highly effective pedagogical method for teaching management education. Another strong proponent of video as a teaching method, Champoux (1999, 2001) promoted the use of animation films to make lasting impressions of management concepts; for example, he used the film *Lion King* to illustrate integrity in leadership, legitimate power, and referent power. He also interspersed live-action films, such as *The King and I*, to bring variety to the classroom.

Based on the 1979 movie film *Norma Rae*, Taylor and Provitera (2011) familiarized students with labor practices and attitudes toward private sector unions. Their data indicated positive student response. Harrington and Griffin (1990) used the film *Aliens* to help students better understand power and leadership principles.

Accounting instructors Holtzblatt and Tschakert (2011) received positive comments from student course evaluations for three years, indicating they found value in the use of short video clips and webcast excerpts. According to these researchers, viewing videos of renowned experts underlined the importance and credibility of the content and helped students to understand key accounting concepts.

Tyler, Anderson, and Tyler (2007) proposed another alternative in utilizing videos. Instead of the instructor choosing the videos, they had students locate video clips in teams. The researchers felt that the students better understood the specific topics when they were required to review films to find appropriate clips for management and organizational behavior concepts. These researchers promoted the theory that having students hunt for video for specific concepts forced them to see their everyday world with a different set of eyes, resulting in a more active learning experience and better retention.

These references cited above emphasize the value of film for management instruction. While movies have been useful as a teaching tool for management instructors, we offer targeted clips of movies to focus on mainstream management functions of planning, organizing, leading, and controlling. Further, we present lecture notes to set the scene for the video clips and to communicate the context and desired student “take-aways.” The “pause” button should be used whenever an instructor wants to ensure that students absorb a relevant concept.

Following the clips, we suggest our set of discussion questions regarding the particular topic viewed. Lastly, we provide possible in-class and homework assignments to reinforce the learning of specific management concepts.

## INTEGRATION OF VIDEO CLIPS AND MOVIES

At the beginning of the course, we orient the students by discussing the management functions categorized by Rue, Ibrahim, and Byars (2013) as planning, organizing (staffing), leading (directing), and controlling. These four management functions have developed and evolved since the Industrial Revolution, impacting management practices used today. Beginning with the Hawthorne Studies and following with the Peters and Waterman study, we point out how cultural and environmental factors have impacted management concepts utilized today.

The objective of the course is to help students understand these concepts so that as managers they can more effectively put them into practice within organizations. We begin with a condensed version of the “In Search of Excellence” video to help students visualize the essence and context of successful management in modern business organizations.

**Film:** “*In Search of Excellence*” (Video clip length: 6:47)

**Lecture Notes:** In response to the post-war competition from the Japanese automakers which was based on W. Edwards Deming’s “Statistical Process Control” management principles, Peters and Waterman set out to determine the characteristics of successful companies in the U.S. in the 1980s. Their landmark study analyzed companies like Disney, IBM, Boeing, and Hewlett-Packard. Their eight characteristics of excellence are still viable today. Using a video clip of selected companies, we have our students study Disney, 3M, and North American Tool & Die to determine which of Peters and Waterman’s “Eight Characteristics of Excellence” are portrayed. (Rue, Ibrahim, and Byars, 2013)

**Discussion Questions:** What were some of the characteristics and attributes of a manager in one of these highly successful companies? How has the role of management changed to be more effective as described in the video? Which one of the eight characteristics stood out for you as being most important for a manager? Among the companies highlighted in the video, which company’s management practices seemed most effective? Which manager at which company would you like to work for? Why?

**Assignment:** Successful Manager Executive Summary. Find an article written within the last three years, identifying a current successful manager’s philosophy of management principles from a business magazine or periodical, such as *Harvard Business Review*, *Forbes*, *INC\_Magazine*, etc. Identify two management principles of the manager you selected and compare or contrast them with two of the “Eight Characteristics of Excellence” from the video “In Search of Excellence.”

## Planning

One of the primary management functions is planning, often referred to as the process of setting objectives and determining overall direction for the organization. Most definitions of the planning function include crafting the mission statement and the vision for the organization. Strategic planning includes assessing strengths, weaknesses, opportunities, and threats (SWOT).

After initial lecture on these elements of the planning function, the authors use movie clips to illustrate various dimensions of planning. One especially helpful video is the “Panera Bread” clip, produced by McGraw-Hill

**Film:** “*Panera Bread*” (Video clip length: 10 minutes)

**Lecture Notes:** We stress that effective planning addresses the following questions: (1) who and where are we now; (2) who and where do we want to be; and (3) what is our plan and the management principles that will aid in getting from here to there. Before showing the video clip, we teach that upper management must focus on key principles, such as developing (1) a good mission statement that can be integrated at all levels of the company, (2) a clear plan of action, and (3) a set of effective management principles and practices that will create employee “buy-in” to achieve the goals of the company. We discuss the value of a SWOT analysis and how the tool can be used for companies and for individuals to constantly track and adapt its efforts to meet long-term objectives. They briefly mention the background history of Panera Bread and remind students what to particularly look for in the video.

**Discussion Questions:** What was Panera’s business like before management focused on improving its performance? What was the primary problem with the company? What elements were essential to Panera’s successful repositioning of the company? Can you remember their revised mission statement? What part did its vision statement contribute to the overall success of the company? What management principles did upper management adopt to create employee loyalty? Where is the company now and has management fulfilled their objectives?

**In-class Assignment:** Following the video clip, we have students critique two company mission statements in teams of five in class. Have them list two strengths and two weaknesses of each mission statement and submit one team paper by end of class time.

**Assignment:** Construct a self-SWOT analysis; include a long-term goal. Also, write your personal mission statement.

## Organizing

The management function referred to as organizing, typically defined as the process of grouping activities necessary to meet objectives and assigning a manager to supervise people performing the activities. The organizing function includes the management practice of empowering managers and employees and often utilizes teams to accomplish the planned activities to meet company objectives. Thus, effective organizing function is illustrated through these video clips. Specifically, the use of teams, value of empowerment, and staffing sub-function are illustrated through clips from “Apollo 13,” “One Smooth Stone,” and “Remember the Titans.”

**Film:** “*Apollo 13*” (Video clip length: 1:00 minute)

**Lecture Notes:** We use this clip to introduce the management function of “organizing.” This clip from the “Apollo 13” movie visually illustrates that moment in time when all the organizing and preparation procedures are completed and confirmed just prior to launch. All of the various departments, teams, and employees have been successfully organized so that all systems can report that the launch is a “go.” The scene is set as this video clip focuses on Gene Krantz, the Houston Space Center Commander who is in the final systems check for the Apollo 13 launch. In this intense moment for his decision whether to launch, he questions each of his managers to determine if each organizational segment is committed to moving forward immediately. Each element of the launch is critical. Even one “no go” would stop the launch. This one-minute clip illustrates the importance of individual managers and their responsibility to the overall organizational objective.

**Discussion Questions:** How long do you suppose each department had been working toward this moment of readiness? Consider the courage any one of the managers must have to say “no go” if he/she had determined in those last few seconds before launch that something was wrong. Discuss the trust level between managers and the Houston commander. How had Krantz, empowered his managers? What is the manager’s role in the organizing

function? How does this clip show the impact of effective organizing? In what way has Krantz used the empowerment principle?

**Film:** “*One Smooth Stone*” (Video clip length: 9:30 minutes)

**Lecture Notes:** One Smooth Stone is a company that creates media messages, trade shows, and product introductions for clients. Management and employees must be creative in addressing customer needs. This requires the company to have certain core values and fundamental principles that provide a framework, allowing employees to be free to improvise with innovative solutions for a particular client’s needs. We discuss team development, change, and outsourcing principles exemplified in the video.

**Discussion Questions:** What fundamental principles did upper management instill in the company to allow employees the freedom to think outside the box for the client’s needs? What is the definition of strategic improvising and how was it applied in the company? What are some key requirements of its outsourcing partners? What was the process management went through in their “make or buy” decision to use in-house resources or to outsource some services? Within the improvisation context, what controls were in place to protect the company?

**Film:** “*Remember the Titans*” (Video clip length: 3:15 minutes)

**Lecture Notes:** This movie illustrates vividly the forming, storming, norming, and performing stages of team evolution (Rue, 2013) as well as the characteristics of a high-performing team. The homework assignment requires the students to view the entire movie to identify the team’s progression through each of the stages. To help prepare them, we teach these four stages of team development, followed by this short video clip that focuses briefly on forming and storming.

This clip from the first few minutes of the movie portrays the volatile race relations conundrum in 1971. Integration has recently been mandated by the government; an official of a high school in Virginia attempts to deal with integration and hires a black football coach, Coach Boone, and demotes its white head coach to be Boone’s assistant coach.

The video depicts the first team meeting, held in the Titans’ school gym, of players and coaches. Initially, only black players are present in the gym, and Coach Boone explains to them that he is in charge. He informs them that a school bus will be taking them to Gettysburg College for their football camp. He is interrupted by his assistant coach and his white players in their dramatic arrival to the meeting. In this way, the video clip highlights the existing racial tension and illustrates clearly an example of the forming stage and the quick shift to the storming stage.

In the last few years, there has been a trend in businesses to create teams. Since most teams do not have the full responsibility for a project, management must be skilled in the lynchpin function to be able to coordinate the various team efforts to meet agreed-upon target dates.

**Discussion Questions:** What is management’s role in facilitating the team building process? Is it a good or a bad idea for management to interfere or dictate behavior boundaries as the team members go through the team building stages? What is the effect on a team if a member leaves and a new member joins the team? How did some of the players’ actions make a significant impact on the Titan’s performance?

**Assignment:** View the entire movie. Discuss how the Titans moved through each stage of forming, storming, norming, and performing. What specific aspects of each stage were evident in the Titans? Refer to at least one incident for each stage to support your answer. At what point would you consider the Titans to be a pseudo team? When did the Titans achieve all of the elements of a high-performing team?

### Leading

The management function referred to as “leading” is typically defined as the ability to motivate others to willingly follow his/her direction. Thus, a good leader understands the needs of each individual served and uses the appropriate motivation tool. We introduce the topic of leading by asking the students what characteristics they feel a leader should possess in order to be an effective leader. This student-generated list helps students to see that there is no one set of attributes that defines an effective leader. In this context, class discussion can then be directed toward effective leader characteristics.

**Film:** “*The Crossing*” (Video clip length: 8:08 minutes)

**Lecture Notes:** This video clip from “The Crossing” illustrates George Washington’s vision of how and when his small force of 1,500 American troops would cross the Delaware River on December 26, 1776 to march on Trenton, New Jersey to surprise and capture a unit of Hessian soldiers hired by the British along with their guns, food, and equipment. We invite students to identify Washington’s leadership characteristics, e.g. vision and trust.

**Discussion Questions:** Based on historical accounts of the Revolutionary War, General Washington was a very charismatic leader. What does it mean to be a charismatic leader? Are there common leadership characteristics that define an effective leader? If so, what are they? Was General Washington’s leadership based on his political position, his wealth and prestige, or his innate characteristics? What are the effects of position, wealth, or innate characteristics in defining a leader’s ability to lead?

**Film:** “Apollo 13” (Video clip length: 1:14 minutes)

**Lecture Notes:** Researchers Robert Tannenbaum and Warren Schmidt contend that there is not one leadership style that will be effective for all situations. On the contrary, they emphasize that different combinations of situational elements require different styles of leadership (Rue, 2013). These two researchers argue that there is a continuum of behaviors the leader can use, depending on the situation. A successful leader accurately evaluates the organizational forces at work in any situation and reacts with the appropriate leader behavior in the specific situation

In this Apollo 13 video clip, the scene opens with the flight surgeon excitedly informing the Houston commander that there is a CO2 problem in the cockpit of the lunar module. The three astronauts will die shortly if the problem is not resolved quickly at Houston Command Center.

This clip dramatically illustrates that the Houston commander cannot make a quick decision.. Instead, he wisely hands the complex problem to his subordinate manager to solve. He correctly assesses the situation and “permits his subordinate manager to solve the problem within certain limits,” including the amount of time before the astronauts will be without CO2. The manager then turns to his R&D team of experts and spills onto a table everything in the lunar module that can be used to construct a CO2 filter. His parting shot before he turns them loose to solve the problem illustrates the complex problem requiring his experts to think outside the box. The problem, he tells them, like “putting a round peg in a square hole.”

**Discussion Questions:** Which one of the seven sectors of Tannenbaum and Schmidt’s “Continuum of Leader Behavior” did the Houston commander use. Why? How much freedom did the manager give his subordinates? In your opinion, how much team training and relationship building went into preparing the R&D team to successfully complete this complex task in such a short time? Under what circumstances is a manager able to delegate his leadership responsibility?” Define the characteristics of such a leader. What are the key differences between a laissez-faire leader and a leader that delegates?

**Film:** “*The Pygmalion Effect: Managing the Power of Expectations*” (Video clip length: 6 minutes)

**Lecture Notes:** This video, produced for management training in organizations, illustrates the impact of a manager’s expectations of an employee—whether positive or negative. The producers first explain what Pygmalion means and then moves to how the theory has been validated with research in several settings, such as classroom settings and business organizations. Students can see the positive impact on an individual in business as well as visualize how an employee feels and performs given the manager’s high or low expectation of his/her ability.

We teach that just as the Hawthorne Studies and the Peters and Waterman’s study showed the impact of attention shown to an employee, the attitude of the manager can either positively or negatively affect the ultimate performance of an employee.

**Discussion Questions:** What role does a manager’s expectation play in the performance of an employee under the manager’s leadership? Is it a form of improper manipulation for a manager to use the Pygmalion Effect on employees? Is there a place for a manager to show anger in the course of helping employees accomplish an assigned task?

**Assignment:** [Due: one month after giving the assignment]. Select someone upon whom you want to practice the Pygmalion Effect. Preferably, select a peer or work colleague. For the experiment to be most successful, you should not disclose that you are doing the experiment with that person. You should document (1) the situation prior to the experiment, (2) the process you used to start the process and what you did to set the climate for the experiment, and (3) the process you used to give appropriate input. Also, explain how the subject responded and was given an opportunity to speak and offer opinions. Further, explain how you gave positive reinforcement and constructive criticism.

**Film:** “*Motivation—the Classic Concepts*” (Video clip length: 19 minutes)

**Lecture Notes:** We use this clip to introduce the historical and developmental history of renowned motivation theories. The producer of this made-for-business training video utilizes the setting of a business to identify motivation theories espoused by McClelland, Herzberg, Maslow, and other well-known management theorists. Using voice-over to note elements of motivation theories is effective to better understand the theories.

**Discussion Questions:** Do these classical concepts fit on a developmental continuum or are they unrelated? What may these theories have in common? Are these theories mutually exclusive? What role does the work environment play in an employee’s job performance? How can a manager’s personal reward preference influence a manager’s decision on how to motivate a non-performing employee? Of the various forms of motivation techniques, which is the most effective today’s business environment?

**Film:** “*Gettysburg*” (Video clip length: 6:34 minutes)

**Lecture Notes:** One of the aspects of leadership defined above is getting others to willingly follow your vision. One of the leading motivation theorists detailed in popular textbooks for several years is Frederick Herzberg. His Motivation-Maintenance Theory counsels leaders to first take action to make hygiene factors at least satisfactory (e.g. safety and food, safety). This video clip provides a mirror example of Herzberg’s theory in action.

The clip begins at the beginning of the pivotal battle in the Civil War. A Maine regiment led by Colonel Lawrence Chamberlain is presented with 120 soldiers, under guard, from another Maine regiment who have decided they will not fight another day. The Union captain who delivers these troops tells Col. Chamberlain to “shoot them if you want!” The 120 quitters had not eaten for some time as the previous officer had tried to break them.

Col. Chamberlain’s speech to these malcontents illustrates Herzberg’s hygiene (maintenance factors) followed by his use of Herzberg’s motivator factors. Before he talks with them about the reasons for fighting, Col. Chamberlain immediately dismisses guards and orders his subordinate officer to feed them in the shade out of the hot summer sun. His leadership is evident within minutes: he cares about their wellbeing and tells them he has no intention of shooting them.

**Discussion Questions:** What actions of prior leaders caused the soldiers to dissent? Describe the trust level of the dissenters when they were delivered to Col. Chamberlain. How effective was that prior treatment? What leadership style did Col. Chamberlain use? Why did he take care of the hygiene factors (to a satisfactory level) before he attempted any motivators? After his speech, 114 of the 120 accepted Col. Chamberlain’s offer to fight with his unit and to have mutiny charges dropped. Why do you think he was so successful?

**Assignment:** After viewing the video clip, compare Col. Chamberlain’s actions and words with Herzberg’s Hygiene-Motivation Theory. In your executive summary, specify two hygiene factors and two motivation techniques that Col. Chamberlain used. Be clear and concise by specifying word or actions used by Col. Chamberlain.

### **Controlling**

The controlling/evaluating function of management mainly encompasses two main parts: (1) members of the organization and (2) processes in the organization. Upper management clearly sets the tone for the culture of the organization. They establish the formal system of employee performance evaluation. Likewise, they are ultimately responsible for the process controls in place, which helps to determine if the organization is keeping to its planned objectives.

Keeping employees on track will first be discussed with an accompanying video clip from the movie “Gettysburg.” Next, the “DHL” video clip will illustrate how management controls company processes from pick-up to delivery in order to meet client objectives through on-time delivery and package tracking systems. Also, company culture values and norms can be viewed as part of their system to achieve company goals.

**Film:** “*Gettysburg*” (Video clip length: 4:18 minutes)

**Lecture Notes:** Regular six-month or annual performance evaluation systems assist greatly in helping an employee to stay focused on department (and company) objectives. However, in between regular appraisals, an employee may wander off course and may need course correction—prior to the next formal performance appraisal. Conversely, an employee appreciates manager recognition when he/she is noticed doing something very positive.

We discuss the various reasons why managers resist reprimanding employees. Kenneth Blanchard, noted management theorist, offers an easy-to-remember reprimand technique: the “One Minute Reprimand.” He identifies four steps of effective manage reprimands: (1) tell person as soon as possible what was done incorrectly, (2) communicate how this makes you (manager) feel, (3) communicate that this incident is over but it will never happen again, and (4) show support to the individual.

This management reprimand concept is vividly portrayed by General Robert E. Lee in the film “Gettysburg,” the pivotal battle of the Civil War. In this video clip, General Lee, Commander of the Confederate troops, orders General Stuart, Lee’s cavalry officer, to report to his headquarters in the field immediately when he arrives in camp. Lee’s forces were surprised by Union cavalry and other Union regiments because Stuart had not kept Lee informed of the enemy’s movements. Lee is very upset because of this and the resulting lives lost. The scene opens when Stuart arrives at Lee’s quarters.

**Discussion Questions:** How do you feel General Lee handled the problem? Did General Lee’s “One Minute Reprimand” work? Was there a reason why General Lee did not allow General Stuart to defend himself? Explain how he followed the steps of Blanchard’s “One Minute Reprimand.” What do you imagine General Stuart thought when he left General Lee’s quarters?

The second part of the controlling management function focuses on controlling the organization’s processes. Ineffective processes can bring an organization to its knees.

**Film:** “*DHL Global Delivery System*” (Video clip length: 13:13 minutes)

**Lecture Notes:** To reinforce effective use of controls, we underscore DHL’s success through its use of controlling processes to ensure the company’s plans and objectives are being achieved. The following video clip particularly illustrates the use of effective controls.

**Discussion Questions:** What types of control systems did DHL implement in the process of acquiring a client’s package, and why? What types of control systems did DHL implement in the process of sorting and routing the client’s package, and why? What types of control systems were used in the delivery of a package? What is one example of how DHL solved a “log-jam” problem? What kinds of coordination activities were used to transfer a package from the client to the client’s addressee? Where do you see a potential weakness or problem in the system? What are some of the key aspects of their company culture?

Company culture plays an enormous role in the success of a company. As discussed earlier, top management sets the tone for the values they choose to promote throughout the company. The final video clip shown in the course, New Belgium Brewery, helps the authors pull together several management functions in one example.

**Film:** “*New Belgium Brewery*” (Video clip length: 11:01 minutes)

**Lecture Notes:** New Belgium Brewery exemplifies a company starting as an idea. Through wise use of effective and creative management principles, New Belgium Brewery has become a successful business enterprise with a stable, energized employee base that competes well in its market segment.

**Discussion Questions:** How much have the founders’ ideas influenced the company’s success? How effective is the company’s mission statement? What are the company’s values and how are they integrated into the company



culture? What management principles have the founders established to create employee and customer loyalty? What are the pros and cons of open book management? What are the pros and cons of employee ownership in the company?

### STUDENT FEEDBACK ON VIDEO CLIPS

This past spring semester, one of the authors used these movies and video clips shown above in his Management Principles lecture class. His 42 students were asked to complete the following survey question:

*Directions: Rate (circle) the value of movies and video clips used in class and in homework assignments to your understanding of management concepts discussed this semester:*

1	2	3	4	5
<i>Very low</i>	<i>Low</i>	<i>Adequate</i>	<i>High</i>	<i>Very high</i>

Overall, the average score was “4” or “High.” The instructor’s use of film helped students to learn the concepts. One of the students who circled “Very high” stated: “The videos helped bring in real world aspects to the class. Discussion of theory is great, but when we can see it being utilized in a business model it feels more relevant.”

Another student in the class approached the instructor outside of his classroom to tell him that she had won first place in a University-sponsored business club competition that focused on management principles. She was excited because she would represent the university in additional rounds of regional and potential national competition. She explained that she had been preparing for final examinations and had no time to study for the competition. She expressed her appreciation for his course and stated that she knew the management principles “cold” as a result of the combination of video clips, lectures, and meaningful assignments. In her opinion, the video clips and movies were particularly valuable to her learning experience.

These are only two examples of numerous students’ written and oral feedback we have received over several years. Acquiring feedback from students has been helpful in the determination of the best movies and video clips to use in class and in homework assignments.

### CONCLUSIONS

We believe the more a student can get involved in the classroom, the greater the opportunity for the student to learn. The combination of lecture-targeted video clips, thoughtful discussion questions, and meaningful assignments combine to help students understand the key management principles while enjoying the visual dimension of learning

This visual medium helps to bring management principles to life in a variety of organizational settings. Viewing a video is comfortable in students’ everyday lives. We believe that the video clips discussed in this article have helped students to gain a greater understanding of how a management principle can be applied than in a strictly lecture format.

The “DHL” and “New Belgium Brewery” clips, used towards the end of the semester, are particularly useful in tying together many of the management principles and concepts discussed throughout the semester. These two video clips vividly illustrate the way in which company management established the tone and employee behaviors needed to create a successful company.

The “One Smooth Stone” video helps students understand that when a company develops a solid understanding of fundamental management principles, the employees can be empowered to work effectively in teams and to adapt concepts to create new solutions for their clients.

### SUMMARY

The effect of classroom use of movies and video clips to help students understand management principles cannot be overemphasized. Each of the four functions of management—planning, organizing, leading, and controlling—were portrayed through film, enabling students to see the particular principle in action within an organization. Positive

student feedback has been continuous over several years of using film. We encourage management instructors to utilize movies and video clips to reinforce concepts.

**Table 1: Video Clips Reference Information** (in order as discussed in article)

<b>Video Clip</b>	<b>Start</b>	<b>Stop</b>	<b>Duration</b>	<b>Distribution + Contact Information</b>
In Search of Excellence	0:00	88:00	88 min	Video Arts Inc., 8614 W. Catalpa Ave., Chicago, IL 60656. (800) 553-0091 YouTube - "In Search of Excellence with Tom Peters and Bob Waterman" 6:47 min
Panera Bread	0:00	10:00	10 min	McGraw-Hill Instructor Video DVD, ISBN 978-0-07-3366414-8, <i>Principles of Management</i> , Volume 1, Disc One: Part 2, Clip 1. mhhe.com (800) 338-3987
Apollo 13	35:53	36:53	1 min	70 Universal City Plaza, Universal City, CA 91608 ["Go for Launch"] DVD – ISBN 0-7832-2573-3 [Available on Amazon.com for under \$6] YouTube – Apollo 13 – "Go For Launch" 1:00 minute
One Smooth Stone	0:00	9:30	9:30 min	McGraw-Hill Instructor Video DVD, ISBN 97800733664148, <i>Principles of Management</i> , Volume 1 Disc One: Part 3, Clip 1. mhhe.com (800) 338-3987
Remember the Titans	15:20	18:05	2:45 min	Buena Vista Home Entertainment, Burbank, CA , 91521 "Zero Fun, Sir" DVD – Disney ISBN 0-7888-2857-6 [out-of-class assn. – entire video] (114 min.) [Available on Amazon.com for under \$6] YouTube –Remember the Titans "Gym Scene" 3:15 min.
The Crossing	25:49	34:16	8:27 min	A&E, 126 Fifth Ave., New York, NY 10011.DVD – ISBN 0-7670-5076-2 [Available on Amazon.com for under \$6] YouTube – The Crossing - 26:08 - 34:12 8:08 min.
Apollo 13	1:22:11	1:23:25	1:14 min	70 Universal City Plaza, Universal City, CA 91608 ["CO2 Problem"]DVD – ISBN 0-7832-2573-3 [Available on Amazon for under \$6] YouTube – Apollo 13 – "Square Peg in a Round Hole" 1:10 min.
Pygmalion Effect: Managing the Power of Expectations	0:00	22:00	22 min	(Theory explained and Business applications) Entire video CRM Learning, 2218 Faraday Ave., Ste. 110, Carlsbad, CA 92008 (800) 421-0833 DVD YouTube -Mini (Pygmalion Effect--theory only) 6 min.
Motivation: Classic Concepts	0:00	20:00	20 min	crmlearning.com (800) 421-0833
Gettysburg	16:15	29:22	13:07 min	Warner Home Video, 4000 Warner Blvd, Burbank, CA, ["Prisoner Delivery" –Disc A] 91522. DVD - ISBN 078063277.[Available on Amazon.com for under \$6] YouTube – "Col. Joshua Chamberlain Speech" 6:34 min.
Gettysburg	15:50	19:31	3:41 min	Warner Home Video, 4000 Warner Blvd, Burbank, CA, "Lee Admonishes Stuart" (Disc B) 91522, DVD - ISBN 078063277. [Available on Amazon.com for under \$6] YouTube – Gettysburg- "Lee Chews Out Stuart" 4:18
DHL Global Delivery System	0:00	13:13	13:13 min	McGraw-Hill Instructor Video DVD ISBN 97800733664148. <i>Principles of Management</i> , Volume 1 Disc Two: Part 5, Clip 3. mhhe.com (800) 338-3987
New Belgium Brewery	0:00	11:01	11:01 min	McGraw-Hill Instructor Video DVD ISBN 97800733664148. <i>Principles of Management</i> , Volume 1 Disc Two: Part 6, Clip 1. mhhe.com (800) 338-3987

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# Developing Undergraduate Construction Management Students' Abilities to Manage Projects Through a Computer-Based Simulation

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## ABSTRACT

Construction management is a relatively young profession with a curriculum that is continually evolving. The multiple accreditations that are sought by universities in Australia mean that curricula are frequently overcrowded and financial management is a subject that is challenging to deliver. This paper describes the approach adopted at one university where final year students' knowledge, skills and abilities about financial management are developed by simulating the operations of a hypothetical construction company. The paper describes the way it is delivered and the challenges experienced over the years.

**Keywords:** Financial management, construction industry, simulation

## CONTEXT

The discipline of construction management has evolved in response to changes in the ways construction projects are procured, designed and constructed. The traditional role of architects as leaders of construction teams has changed, with other professionals taking overall responsibility for steering projects to completion. Before the introduction of construction management degrees, the professionals who managed construction projects were predominantly drawn from the architecture and civil engineering disciplines. Several factors have driven the development of degree programs that target the management of construction processes. These include shortages of architects and civil engineers who specialise in managing construction projects, and a lack of focus in architecture and civil engineering degree programs on management-related topics (such as finance and accounting, economics, management principles and construction law). Construction management degree programs have evolved to meet this need. Construction management curricula are designed to enable graduates to manage the multitude of operations involved in procuring, designing, constructing, commissioning, maintaining and eventually deconstructing modern buildings.

One of the challenges facing those developing construction management curricula is which subjects to include. Construction managers have much in common with the disciplines of architecture and civil engineering, but focus on different aspects. For example, engineers need to be able to predict the forces that a structure needs to accommodate and for ensuring that structural members are adequately sized. By way of contrast, construction managers are not responsible for establishing the size of structural members. They are, however, expected to maintain safe working conditions on site. As such they need an appreciation of structural theory so that they would know, for example, where to expect to find reinforcement in a reinforced concrete beam. They need to be able to identify when reinforcement is incorrectly positioned or missing, rather than the size and number of steel bars required. These nuances present academics with dilemmas when trying to rationalise the curricula to be taught to students from multiple disciplines.

In many Commonwealth countries the development of these curricula are informed by the requirements of the various professional institutes that accredit these degrees. A particular challenge facing those developing these curricula in Australia is the number of professional institutes that accreditation is sought from. Relevant institutes include the Australian Institute of Building (AIB, 2004), the Australian Institute of Quantity Surveying (AIQS, 2008), the Royal Institute of Chartered Surveyors (RICS, 2008) and the Chartered Institute of Building (CIOB, 2008). Most construction management programs are accredited by more than one institute, and some are accredited by more than ten (Sher, 2012). It is understandable then, that most academics in this discipline consider their curriculum to be overcrowded and, in some cases, fragmented (Williams, Sher, & Simmons, 2010).

This paper describes how students enrolled in the Bachelor of Construction Management (BCM) degree in the School of Architecture and Built Environment at the University of Newcastle, Australia learn about the financial management of construction companies. It starts with by providing brief background to the BCM degree, and the

rationale and architecture of the course, a description of the way in which it is delivered, followed by student evaluation and observations for future developments.

## BACKGROUND

The University of Newcastle is the largest regional university in Australia, with a student population of over 37 000. Over 85 undergraduate programs are available across five faculties. The BCM degree is offered in the School of Architecture and Built Environment (one of three Schools within the Faculty of Engineering and Built Environment). The first cohort of BCM students graduated in 1994. The degree continues to be delivered based on problem-based learning principles, having drawn on the University's medical faculty's early engagement with this approach. It is offered to on-campus as well as to distance-learning students. Starting with a modest intake of 17 students, the program has grown considerably with over 600 students enrolled in 2013. Class sizes vary from approximately 80 to over 300 (where courses are delivered to the architecture discipline and as general electives).

In line with the increased capacity of the Internet to support teaching and learning, the BCM program has embraced digital methods of delivery. Use of paper-based course materials for distance learners ceased in 2006. Courses are delivered in blended-mode with face-to-face activities being recorded using a variety of approaches and made available to on-campus and distance learners alike.

BCM students are recruited from a wide range of backgrounds. Some are school leavers, whilst others are of mature age and working in industry. In line with many higher degree students in other disciplines and countries (Curtis & Williams, 2002), many BCM students work part-time.

The BCM is a four year embedded Honours program. The early years of the program focus on technology-related topics, equipping students for the management-related challenges they experience during the latter courses (The University of Newcastle, 2013a). The course described in this paper is taken during the final year of students' studies and is described below. It targets the development of their knowledge of, skills in and attitudes about the financial management of construction companies.

It is relevant to note that the construction industry in Australia is plagued by insolvencies. Heaton (2013) highlights this, noting that "in 2010/11 alone, an analysis of data from the Australian Securities and Investments Commission... reveals that no fewer than 1,862 construction firms went into insolvency, accounting for a whopping 23 per cent of all insolvencies throughout Australia." Responding to the recent Collins inquiry into insolvency, the New South Wales Government has recommended (NSW Government Finance and Services, 2013, Recommendation 43) that industry works to develop the financial and management skills of construction personnel. The course described below illustrates one of the ways this need is being addressed.

## COURSE CONTENT

Whilst construction managers are not expected to be accountants, they are expected to be able to make informed decisions about the financial management of construction companies. This course introduces students to the principles of financial management and then requires them to apply what they have learned by simulating the running of a construction company. Students take on the management of a hypothetical construction company and are required to trade for a period of two years using a computer-based simulation package. The learning outcomes of the course relevant to this paper are set out in Table 1.

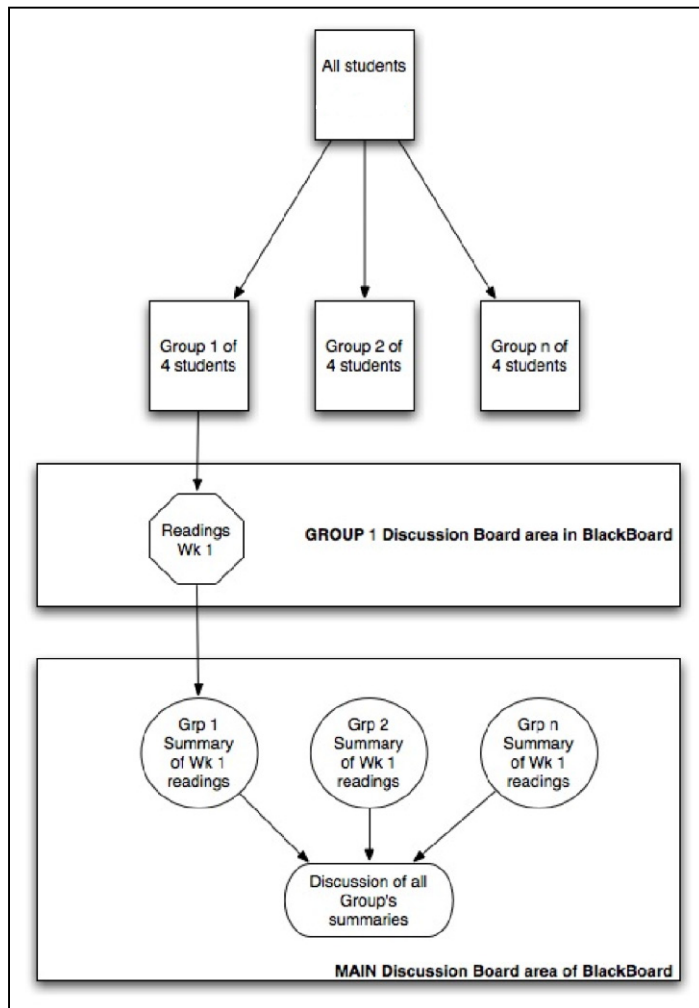
**Table 1: Learning outcomes**

On successful completion of this course, you will be able to:

- apply the principles underpinning the financial management of construction companies.
- develop and appraise strategic management plans for construction companies.
- simulate the management of a construction companies.
- develop effective communication skills related to working in teams in virtual environments.
- justify the strengths and weaknesses of your learning experiences about managing construction companies

Students are introduced to the principles of financial management through a textbook (Peterson, 2013). They allocate themselves into groups, and then review and discuss selected chapters with their peers on a weekly basis. The chapters are supplemented with additional readings, sourced from newspapers, trade journals and podcasts (e.g. Factoring.org.uk, 2013). Collectively these emphasize the contemporary nature and importance of the subject matter. Students read the materials and then enter into discussions with their peers via a group discussion board on our Blackboard learning management system (Figure 1). They are expected to enter into dialogue with their peers, respond to the observations of others, relate topics to their own work-experience (if any), and support their statements with additional resources. At the end of a week, one member of each group is required to compile a summary of the group's efforts and post this on a discussion board accessible to the whole class (Figure 1). All students are required to review some of the summaries and offer comments of their own. Each student's postings are assessed using a rubric that rewards their engagement with their peers, evidence of familiarity with the readings, their style of communication and evidence of further research.

**Figure 1: Administration of weekly readings**



On completion of the readings, students complete a summative on-line assessment before embarking on their next assignment, a computer simulation. AROUSAL (Lansley, Irwig, Hipwell, & Fitsakis, 2013), the package they use, allows them to simulate the running of a small to medium sized construction company. AROUSAL was developed in the 1980's at the University of Reading, UK, and has been refined and augmented over the years. A dataset specific to Australia has been developed based on a company operating on the outskirts of Melbourne. Students trade for a simulated period of two years by making decisions on a quarterly basis and are assessed on the financial performance of their company.

Students start by reviewing the historical data contained in the package. AROUSAL provides data about the size of projects the company has undertaken in the past, the types of construction projects that have been completed, the methods of construction involved, the location of these projects as well as indicators of market demand at the time. They are also provided with data about the existing management structure of their company and the staff it employs. Students are required to work in groups to consider these data and develop a strategic plan for their company for the next two simulated years of trading. Their plan is assessed in accordance with the follow criteria: analysis of historical data, feasibility of their strategic plan, depth and justification of their financial plan, depth and justification of their staffing plan as well as their communication style.

Students then work individually to put their strategic plans into practice through the simulation application. AROUSAL allows them to review the existing commitments of their workforce and bid for new projects. Should they wish to bid for a particular project, they do so by entering a mark-up they feel will win the job. Where necessary, students can recruit new staff by reviewing the résumés of applicants available at the time. Students are also able to terminate the employment of staff they no longer require, target specific geographic locations for future work, reallocate the responsibilities of their staff and so on. They are provided with an overview of the aggregated workload of the staff of their company (Figure 2) which enables them to identify the capacity of individuals to take on extra work (In Figure 2, 100 represents a full workload).

**Figure 2: Workload allocation**

Allocation of Staff													
Workload allocation according to Function and Person													
Project	estimator	quantity surveyor	project manager	site manager	managing director	contract admin.	office admin.						
Management			Wally 10 Godwin 20		Frank 25								
Management Training													
Technical Training													
500 admin.					Frank 20						Sammy 13		
501 personnel	Michael 2		Wally 2								Sammy 17		
502 marketing	Michael 10				Frank 25								
503 accounting											Sammy 23		
504 purchasing	Michael 1										Sammy 24		
505 proj. strat.					Frank 16								
65 tender	Michael 19												
66 tender	Michael 24												
59 start		Edwina 9	Godwin 27	Tony 52		Goofy 43							
61 start		Edwina 10	Godwin 30	Arthur 57		Goofy 48							
56 execute		Edwina 20	Godwin 19	Gerry 101		Goofy 25							
58 execute		Edwina 22	Wally 21	Tony 113		Alfred 28							
50 finish		Edwina 23	Godwin 23	Elaine 79		Goofy 11							
67 d+b tender			Wally 39			Alfred 14							
68 d+b tender			Wally 33			Alfred 12							
Total	Michael 56	Edwina 84	Wally 105 Godwin 119	Tony 165 Gerry 101 Arthur 57 Elaine 79	Frank 86	Alfred 54 Goofy 127	Sammy 87						

After each simulation, AROUSAL generates reports that show, inter alia, progress, cashflow analyses, financial data, staff allocation and issues, and problem activities. Students are required to evaluate the financial health of their company by calculating five financial ratios (net worth, net cashflow, gross profit margin, current ratio, and debtors collection period vs. creditors payment period). These ratios provide the basis on which this part of the course is assessed. Students' ratios are ranked in turn and a score is attached to each ranking. A value of one is given to the strongest ratio with successive rankings attracting progressively higher numbers. When each ratio has been ranked and scored, the scores are totalled, and the lowest score is awarded 100%. Marks are apportioned to the remaining students on the basis of their accumulated score, with 50% being awarded to the student whose results were worst but which represented a serious attempt at running the simulation.

## REFLECTIVE PRACTICE

Most students take the simulations seriously as their results are assessed. Pleasingly, they generally find running the simulations to be an engaging experience. Students rated their overall satisfaction with the quality of the course at 4.0 (out of 5) and the challenge the course provided at 4.25 (out of 5) (The University of Newcastle, 2013b). Whilst it is possible that the competitive manner in which the simulations were organised contributes to their satisfaction, it was pleasing to note that some students continued the simulation for several additional years. Their motivation was to see what would increase the health of their company. This underscores the strengths of simulation as a teaching and learning strategy. Running a profitable business is not intuitive. There are a multitude of inter-related factors that need to be considered when making decisions, and these are not immediately apparent. For example, some students do not appreciate the significance of receiving payments from their clients in a timely manner. The imaginary company the students inherit employs a part-time bookkeeper. Whilst this arrangement is initially satisfactory, the bookkeeper does not have the capacity or the background to cope when the company grows. Few students employ staff with accountancy skills to address this shortcoming. Another example is where students win projects that are a considerable distance from their imaginary home base. In such circumstances there are advantages to employing local sub-contractors. The simulation allows students to decide how much work to sub-let but few students make connections between geographic location and the complaints of their workforce when working away from home.

The reality is that students are expected to make mistakes and to learn from these mistakes. Indeed, allowing students to experience real-world challenges without real-world consequences is a prime outcome of simulation exercises (Harder, 2010). To capitalise of these opportunities, students are required to prepare a reflective report and to relate their experiences of the simulations to the theory they engaged with at the start of the course. These reflective reports are assessed in accordance with the following criteria: description of their simulations, explanation and interpretation of their simulation results, use of additional resources to supplement the aforementioned explanations and communication style.

## CHALLENGES

One of the difficulties we have experienced over the years is that of poor attendance by on-campus students at face-to-face lectures. It may be appealing to link such poor attendance with the provision of on-line lectures, but studies like those of Larkin (2010) indicate that students' motivations are more complex. Given opportunities to manage their own time, students value autonomy (Drennan, Kennedy, & Pisarski, 2005) and this may contribute to some electing to engage in other activities rather than attend lectures. Partly as a pragmatic response to the reality of poor attendance, the course is delivered entirely as distance learning.

The subject matter of this course lends itself to group work. However, facilitating group work is generally problematic (Aman et al., 2007; Graham & Crawley, 2010; Sher & Williams, 2007). Students frequently express concerns about the diligence of their peers (Hardie, 2007) and in this case, these were exacerbated by the demographic profile of the students. Approximately half were mature-age distance learners, many of whom were in full-time employment. The remainder were mainly school-leavers with minimal work experience. Attempts to harness the experience of the mature-age distance learners were compromised by the work pressures they need to cope with. These may have discouraged some of them from being supportive of their younger peers. Furthermore, the temporal priorities of distance learners rarely aligned with those of the on-campus students. Whilst many on-campus students wished to work on their group assignments during the day, distance learners generally preferred working after-hours and on weekends. Synchronous meetings were thus difficult to arrange, and this compounded the difficulties students experienced when working together.

Students were able to download and use their own version of the software. This is convenient when they work independently but problematic when students work in groups (as each group member needs to make identical decisions to receive the same results as their colleagues). As a consequence, and in addition to the challenges of facilitating group work involving distance learning and on-campus students, use of groups has been restricted to reviewing the historical data provided with AROUSAL (as described above).



## CONCLUDING COMMENTS

An understanding of financial management is essential for those managing construction projects and organisations. However, the crowded nature of many undergraduate construction management curricula in Australia makes it difficult for finance and management subjects to be delivered using traditional approaches. Furthermore, the trend in many Commonwealth countries for students to work whilst studying appears set to continue for the foreseeable future. Finding novel and effective ways of meeting the diverse needs and requirements of students is one of the challenges facing university construction management educators. Simulations are effective in exposing students to real-life situations and of engaging their interest (Beckem & Watkins, 2012). For example, virtual reality is being trialled as a means of simulating the day-to-day issues construction managers are likely to face on site (Austin & Soetanto, 2010). Simulations provide safe environments in which students and wider communities can operate. For example, nursing students practice their clinical skills using mannequins before they are allowed to treat real patients (Harder, 2010). Community members need to be similarly protected from the actions of novice construction managers. Giving students stewardship of the management of commercial construction organisations is neither desirable nor possible.

In summary, simulations address many of the challenges facing university educators trying to engage their students. They provide students “with valuable experiential learning opportunities that are easily scalable, reusable, and uniquely suited to enable instructors to assess students while simultaneously providing them with authentic student-centered learning journeys that increase student engagement.” (Beckem & Watkins, 2012, p. 61)

However, simulations can be challenging to organise and facilitate. We were fortunate to be able to arrange for a UK simulation package to be adapted to our local conditions. Locating suitable simulation applications is therefore one of the difficulties facing educators. Other challenges include familiarising staff with the chosen simulation applications and devising ways for students’ efforts to be assessed. Notwithstanding these challenges, simulations provide effective approaches that can be harnessed to meet the requirements of current cohorts of university students.

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# Student-led Consulting Projects Succeed as Experiential Learning Tool for MBA Marketing Strategy

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## ABSTRACT

In this article, information from an MBA-level marketing strategy course taught with and without a major experiential learning assignment is analyzed. Empirical analysis of data about learning outcomes, student satisfaction, and student self-efficacy are compared. The study reveals that students engaged in these projects perceived them as valuable learning exercises that: (1) supported their mastery of class materials and their ability to apply theoretical concepts to practical situations; (2) enhanced their satisfaction with the course and instructor, and (3) increased their self-confidence with regard to their own business capabilities.

**Keywords:** Experiential learning, marketing strategy, consulting, learning outcomes

## INTRODUCTION

*“One must learn by doing the thing, for though you think you know it – you have no certainty until you try it.”*  
[Sophocles, 400 BC]

Gaining practical experience working with and in businesses prior to graduation is increasingly important for undergraduate and graduate level business students. Jobs that exist in both non-for-profit and for-profit organizations generally require new employees to “hit the ground running,” which can be very challenging for business school graduates who have not been engaged in experiential learning. In fact, a significant body of research demonstrates that passive learning in the classroom rarely supports the development of adequate critical thinking and professional communication skills. Experiential learning assignments and projects in business education settings have been found to provide students the opportunity to develop these important skills, enabling them to better meet prospective employers’ expectations [Clark and White, 2010].

The need to bridge the gap between employer expectations and business school graduates’ skill sets is clearly recognized by AACSB International, which specifically refers to levels of student involvement and a need for collaborative learning within AACSB accredited institutions [2008].

## EXPERIENTIAL LEARNING: THEORETICAL FOUNDATIONS

David A. Kolb [1984] is considered by many to be the founder of current experiential learning theory and practice. According to Kolb, for an activity to be classified as experiential learning, a student assignment must consist of the following four components: concrete experience, reflective observation, abstract conceptualization, and active experimentation. Learners must engage in all four activities as components of an assignment.

Kolb asserts that having a concrete experience requires students to process stimuli, responses, and consequences via their senses and cognition. Students’ reflective observation of their assignments requires their remembering aspects of the project and elaborating on the experiences. The application of theoretical principles to what they observe in their assignment comprises the abstract conceptualization aspect of experiential learning. In this phase, students apply in-depth thought processes and problem solving. With regard to active experimentation, learners must utilize trial and error to solve an assignment’s problems so they may arrive at innovative solutions. Kolb’s framework has been frequently used for developing and assessing experiential learning projects in business education [Petkus, 2000; Wells et al., 1991; Sims et al., 1989].

Other researchers have built upon Kolb’s work, finding that students learn best when they are actively involved with concrete experiences [Gaidis and Andrews, 1990; Walters and Marks, 1981]. Ives and Obenchain [2006] concluded that experiential learning exercises should consist of the following three elements: the opportunity for learners to be

self-directed, the chance for students to connect to “real world” environments, and a component in which students critically reflect upon their learning experience. According to Kickul et al., [2010], experiential learning must “go real, go deep and get feedback” while Harsell and O’Neill [2010] defined experiential learning simply as the process of students learning through experience.

Experiential learning has long been an integral aspect of education in many fields such as medicine and other health sciences. Students in the health professions routinely “practice” their skills and gain expertise in the “real world” under the tutelage of experienced practitioners. Patients expect their physicians to be adequately trained to diagnose and prescribe proper medical treatment. To ensure this ability, medical school education includes hands-on training (experiential learning) from the very beginning of medical school. Additionally, even in the classroom, medical students are predominately taught by medical practitioners, who are supported by academics. The expectations in the field of medicine arise from the fact that a patient’s health might be at risk, and this is the rationale for why medical schools combine academia and the practical application of the concepts and techniques learned in the classroom. This type of training and teaching by experienced professionals is expected in the field of medicine; however, it is not the norm in other fields such as in business administration.

In reality, a parallel risk of failure also exists in the business field given the fact that executives or workers can put a business at risk should they fail to apply appropriate business solutions. While this may not physically jeopardize an individual, per se, it could certainly negatively affect the livelihoods of many or even a national economy. Nevertheless, having students practice their skills under the tutelage of experienced practitioners is not the norm in business schools.

### **Experiential Learning and Business Education**

Recently, there have been two driving forces behind the growing trend toward incorporating experiential learning projects in business school curricula: (1) the need to meet prospective employers’ expectations for student abilities and (2) the need to actively engage students who are usually very different types of learners than those who populated business school classrooms in prior decades. The student body of most business schools has changed tremendously in the past ten years. Classrooms are filled with “Millennials” (also called Generation Y or YouTube individuals) who are very different from Generation X students.

Millennials tend to be open to change, adopt new technologies easily, have relatively short attention spans, and are more self-confident than students from prior generations [Mohrweiss and Pitt, 2010]. The Generation Y population prefers learning through life experiences and the Internet and does not tend toward book-based learning. Students from this generation seek innovations and are quick to adopt them. It is a generation that learns through concrete examples, is very connected to the world through social media (Twitter and Facebook), and barely visits the library. Because they are so different from others from prior generations, Millennials need to be taught differently than previous generations. They need more hands-on experiences as well as more interaction with technology. To best prepare our Millennial students to succeed in the business world, we need to involve students more directly in the “real world” of business [Nunamaker, 2007].

As one means of accomplishing greater levels of student involvement in practical applications of their business learning, business schools have actively courted relationships with leading corporations. For example, Jet Blue Corp. donated \$5.4m to The University of Michigan’s Leadership Institute and its representatives maintain involvement in student activities [Clark et al., 2010]. Incorporating a greater focus on experiential learning has also occurred in business programs at other top universities around the world, including the London Business School, Columbia University, and the Harvard Business School where area businesses provide guest speakers and information for students to analyze. In fact, at Harvard recent curriculum changes include a redesigned first-year MBA level course called FIELD (Field Immersion Experiences for Leadership Development) in which case analysis is minimized in favor of more experiential learning, simulations, and field studies.

In business education at many schools, experiential learning generally includes a range of activities and student-involved learning practices such as internships [Dillon et al., 2011], student-run businesses [Robinson et al., 2010; Tompkins et al., 2010], simulations [Tompson and Tompson, 1995; Seaton and Boyd, 2008] and student consulting projects [Kunkel, 2002; Sciglimpaglia and Toole, 2010]. These types of experiential learning activities are generally regarded as more comprehensive and effective in teaching today’s learner than passive learning activities such as faculty lectures because they stimulate student awareness and involve subjective experiences, which, in turn, affect

students' perceptions, cognition, and behavior [McCarthy, 2010; McCarthy and McCarthy, 2006].

### **The Expected Benefits of Experiential Learning in Business Studies**

Research has shown that experiential learning activities positively affect student's self-confidence and self-efficacy. Self-efficacy is a construct introduced by Bandura [1986] that has been found to be a predictor of individual behavior. Indeed when people judge themselves as able to successfully perform on a professional level, they achieve greater self-confidence and self-efficacy. Conversely, when people have greater self-confidence and self-efficacy, they are more successful on a professional level. The following activities have been found to positively impact students' self-efficacy: internships, projects, job shadowing experiences, and verbal encouragement from colleagues.

Moreover, through experiential learning assignments, students learn how theoretical concepts from disparate disciplines may be interconnected as well as how concepts from these different disciplines may apply to real world settings. For example, business students who have taken both marketing research and retailing courses can integrate concepts from both classes into one experiential learning project working with an existing retailer. Other than through experiential learning activities, rarely do students have an opportunity to integrate skills and tools taught in one course with those taught in another. Rather, courses are typically taken as separate and independent subjects, and many students fail to understand important relationships among them [Bobbitt et al. 2000]. With experiential learning projects, learners put into practice skills and concepts learned in different courses from their business curriculum, which strengthens their overall skill set and enables them to make better and more robust decisions in the classroom and in the business world [McCarthy, 2010].

In addition to strengthening individual student's skills, experiential learning has also been found to be a good experience for the students at the group level. Most successful business leaders embrace team approaches problem-solving in their organizations, having moved away from traditional authoritarian-style leadership models of past decades. As a result, they value the independence, creativity, and entrepreneurial mindset that students gain from participation in experiential learning exercises in school. To support the development of students' team problem-solving abilities, business school faculty may introduce cooperative experiential learning assignments, where groups of students work together to solve businesses problems. This team-based approach emphasizes participative leadership styles among students as well as their relationships with their faculty leaders [Bobbitt et al., 2000; Holter, 1994]. Because students from different disciplines and work experience backgrounds form the teams common in cooperative experiential learning activities, students are encouraged to be more creative and collaborative in their decision-making. They also learn to respect other team members' opinions and perspectives.

### **Experiential Learning in Marketing Courses**

Marketing practitioners demand their new hires to be able to think holistically and to be solution-driven [Craciun and Corrigan, 2010], which can be challenging for recent graduates without prior work experience or who have not engaged in experiential learning. To provide students with the proper preparation, faculty in many marketing departments have attempted to move from a siloed approach to an integrative approach to teaching their marketing students [Bobbitt, Inks, Kemp and Mayo, 2000; Darian and Coopersmith, 2001; Elam and Spotts, 2004, Muniz and Huser, 2008]. One method to do this is through experiential learning projects, which have been successfully integrated in different marketing courses. Efforts by Masulka, Stout and Massad [2011] in a retail marketing course reinforced in students both conceptual frameworks as well as how to practically apply them to business situations. Experiential learning assignments may also be utilized to span concepts from different courses simultaneously. For example, O'Hara and Shaffer [1995] integrated personal selling and purchasing courses through experiential learning activities. Bobbitt et al. [2000] found experiential learning activities successful in integrating marketing principles, personal selling, and sales management courses.

At Barry University, members of the marketing faculty have also worked to integrate marketing courses and concepts through experiential learning with the goal of improving students' marketing knowledge, team-based decision-making skills, professional skills, and their ability to apply key marketing concepts to real world business problems. In order to determine whether or not efforts to integrate course concepts and skills from Marketing Strategy and Marketing Research have been effective, this paper analyzes student learning, self-efficacy, and satisfaction among Barry University's MBA marketing students who did and did not participate in experiential

learning activities. Specifics about these integration and experiential learning efforts can be found in the following sections.

#### *Experiential Learning in Marketing at Barry University's School of Business*

The Barry University School of Business is a very international place, located in a very international city. At the MBA level, international students may comprise the majority of students enrolled in any one course. Many of the MBA students at Barry University have had two or more years of professional work experience. Frequently that experience is in business; however, it is often also in technical fields such as information technology or engineering. Given the student body characteristics in Barry's MBA program, experiential learning projects can give students exceptionally rich learning experiences as they work with team members from other countries, who speak other languages, and who may have had significantly different career experiences than each other. Thus, after completion of these projects, students should be better able to apply their knowledge of business concepts to real world situations in complex international business environments.

Experiential learning takes many forms at the School of Business at Barry University, including internships, simulations, field studies, and business partnerships and projects developed through the School of Business' BICED Center (The Barry Initiative for Community Economic Development). At the MBA level, student-led consulting projects with BICED partners are the most common type of experiential learning and are designed with the goal of enhancing students' knowledge and understanding of key business concepts, improving their satisfaction with the MBA program, and increasing their self-confidence and ability to apply business concepts to real-world scenarios.

#### **Barry University's MBA Marketing Strategy's Experiential Learning Project**

##### *The Student Context*

These experiential learning exercises researched for this study were undertaken at a small, AACSB-accredited school of business at a private, Catholic university in the greater Miami, FL area. The MBA-level Marketing Strategy course in which the students completed their projects had average class sizes of 11 students, ranging in age from 25 to 40. Approximately one-half of the students worked full-time, and approximately 25% of the remaining students worked part-time on and off campus. Approximately half of the students in all sections were international students from Latin America, Europe, and the Middle East.

In 2010, curriculum for the required MBA-level Marketing Strategy course was redesigned to include comprehensive student-led consulting projects with different BICED-related businesses. Since 2010, students taking this required MBA-level marketing course have researched and developed marketing projects for several clients in the greater Miami area. These projects required students to design research instruments, conduct research, and analyze primary data so they could develop and propose marketing strategies to executives at the client organizations.

Based on the findings from the literature elaborated earlier, faculty involved with this course expected to find that MBA students completing these experiential learning assignments demonstrated greater learning of integrated concepts, were more satisfied, and experienced higher levels of self-efficacy than those who did not participate in experiential learning projects. Key measures of learning were students' ability to demonstrate their understanding of key marketing concepts and their ability to link theory with practice.

##### *The Experiential Learning Projects*

Although the client organizations differed, students in the 2010 and 2011 sections of MBA-level Marketing Strategy completed similar experiential learning projects: they were retained as external consultants to complete market research and analysis projects for businesses in the greater Miami area. Stated learning objectives for students completing these projects included:

- Understand and articulate the real problem facing the client organization
- Apply marketing knowledge in new and unpredictable circumstances
- Create a project plan and meet team and individual deadlines
- Design and apply market research instruments to gather primary data relevant to the client's strategic challenge
- Analyze primary and secondary data collected, using statistical analysis methods
- Evaluate existing and potential marketing strategies

- Develop innovative solutions that are appropriate to the client's strategic challenges
- Work successfully in interdisciplinary teams
- Prepare and deliver professional written and verbal presentations explaining the project and making marketing strategy recommendations.

Experiential learning assignments were presented and completed in the following stages, which were designed to enhance student learning.

- Stage One: During class time the professor presented the scope and nature of the consulting projects. In teams, students then gathered and analyzed secondary data about clients and their business strategies.
  - Student deliverables: client analyses.
- Stage Two: Executives from the client organizations visited the classroom. During the visits, they gave presentations about their organization, discussed their issues, and stated their business goals and objectives. During these meetings, students asked numerous questions to better define key issues and opportunities.
  - Student deliverables: project definitions and work plans.
- Stage Three: Students completed on-site visits to client facilities and surrounding areas. During these visits, they interacted with employees, customers, and other key stakeholders, as appropriate.
  - Student deliverables: SWOT analyses.
- Stage Four: Students conducted competitor analyses, using secondary data and data collected through visits with competitors.
  - Student deliverables: development of survey instruments.
- Stage Five: Students gathered and analyzed primary data about existing and potential customers.
  - Student deliverables: data analyses of trends and correlations.
- Stage Six: Inside and outside of the classroom, students created marketing plans to optimize operations and grow revenues while minimizing clients' marketing costs. Students integrated concepts from finance and operations management with what they were learning about marketing in this course.
  - Student deliverables: marketing plans.
- Stage Seven: Students prepared and delivered formal written reports and presentations.
  - Student deliverables: final written reports, PowerPoint presentations, and oral presentations to business owners, key client stakeholders, and School of Business faculty.
- Stage Eight: Students met in class with the professor to debrief about their experiential learning experience.

Throughout the 16-week, semester-long courses, students met with their professor during regular class time for lectures and class discussion about key marketing concepts. Additionally, at each week's class session, students presented their progress with their consulting projects, confirmed project deadlines, asked for advice, and discussed any and all challenges they faced in their projects.

## RESULTS

Analysis of student exam grades and information from course evaluations confirmed faculty members' anticipated improvements in student achievement, satisfaction, and self-efficacy from the addition of an experiential learning assignment to the traditional curriculum for this course. In fact, analysis of data verified improvement in three important areas, including:

1. higher levels of achievement on exams [including students' ability to apply key concepts to practical business situations],
2. higher levels of student satisfaction with the course and the professor, and
3. greater student self-confidence in their abilities to successfully perform in the business world (self-efficacy).

Data in the following tables and discussions reflect differences in student achievement, satisfaction, and self-efficacy for three sections of this MBA Marketing Strategy course taught by the same professor. The Fall 2008 course was taught using traditional pedagogy, namely reading assignments, faculty lectures, and case discussions/analyses. The sections taught during Spring 2010 and Fall 2011 included the above-described experiential learning assignments.

### Student Achievement

Comparison of grades from identical midterm exams given in the traditionally-taught section (Fall 2008) and in the sections with experiential learning projects (Spring 2010 and Fall 2011) revealed better student learning in the two experiential learning sections. Improvements were evident in several aspects of student exam performance, including students' ability to link theoretical concepts to real business scenarios, their ability to explain concepts in depth, and their success making appropriate strategic and tactical recommendations regarding marketing challenges. Aggregated student performance data from midterm and final exams in each course section can be found in Table 1 below. Copies of both midterm and final exams can be found in Appendix 1.

**Table 1: Student Learning- Results from Midterm and Final Exams**

	Fall 2008 [n = 12]	Spring 2010 [n=10]	Fall 2011 [n=11]
Midterm exam average	83%	87%	88%
Final exam average	82%	87%	89%

Midterm exam averages for the Spring 2010 experiential-learning section were 4 points higher [a 5% increase] than midterm scores for students from the traditionally taught Fall 2008 section. Improvement for students in the Fall 2011 experiential-learning section were even better at 5 points [6%] higher than Fall 2008. Grade improvements were even greater for final exam score averages, with a 5-point [6%] improvement for the Spring 2010 section and a 7-point [8.5%] improvement for the Fall 2011 students when compared with the Fall 2008 final exam average. Lower aggregate scores in Fall 2008 reflected the fact that many students in the traditionally taught section could only provide theoretical answers to exam questions and had difficulty applying the concepts they elaborated to practical situations. In both 2010 and 2011; however, most students' answers to exam questions revealed a strong ability to link theoretical marketing concepts directly to their experiential-learning projects and other practical situations. Students from the 2010 and 2011 sections demonstrated significantly greater mastery of both theoretical and practical applications of key marketing strategy concepts than students from 2008 who did not engage in experiential learning.

### Student Satisfaction

Evaluation of students' self-reported satisfaction with the course and the professor revealed higher ratings in the two experiential learning sections than for the traditionally taught section. Below is data for three elements of students' course evaluations. All questions were answered on a scale from one to five [with 1= disagree strongly and 5 = agree strongly. In Tables 2 – 4 below are results from the most relevant questions on the course evaluations completed by students in all three sections of Barry's MBA-level Marketing Strategy course.

**Table 2: Course Evaluation Item-Number 5\***

	Course Evaluation Results: Mean Scores	Change from Fall 2008
Fall 2008 [n= 12]	4.5	-
Spring 2010 [n= 10]	4.7	+4%
Fall 2011 [n= 11]	4.8	+7%

\*Item #5 wording: "This course integrates theoretical course concepts with real world applications."

**Table 3: Course Evaluation Item-Number7\***

	Course Evaluation Results: Mean Scores	Change from Fall 2008
Fall 2008 [n=12]	4.4	-
Spring 2010 [n= 10]	4.7	+7%
Fall 2011 [n= 11]	4.8	+9%

\*Item #7 wording: "The instructor encourages students to think about and apply course concepts."



**Table 4: Course Evaluation Item-Number 11\***

	<b>Course Evaluation Results: Mean Scores</b>	<b>Change from Fall 2008</b>
Fall 2008 [n= 12]	4.4	-
Spring 2010 [n= 10]	4.7	+7%
Fall 2011 [n= 11]	4.8	+9%

\*Item #11 wording: “The instructor is an excellent teacher.”

As is shown in these tables, scores for these three items of the students’ course evaluations improved by 4% to 9% when the course was taught with experiential learning assignments. For all the other items in the course evaluation, student scores either improved or remained the same when comparing the traditionally taught section with the two sections with experiential-learning projects.

### Self-Efficacy

The third area in which the researchers expected to see improvement was in student self-efficacy. Research about experiential learning concludes that students’ self-efficacy improves through involvement in experiential learning projects. Quantitative and qualitative data gathered from students in all three sections of MBA Marketing Strategy confirmed these conclusions. In their course evaluations, students in Spring 2010 and Fall 2011 reported having a greater opportunity to demonstrate their knowledge of course materials through their experiential learning assignments than students in the Fall 2008 traditionally taught section. See Table 5 below for this data.

**Table 5: Course Evaluation Item-Number 8\***

Q#8	<b>Course Evaluation Results: Mean Scores</b>	<b>Change from Fall 2008</b>
Fall 2008 [n=12]	4.5	-
Spring 2010 [n=10]	4.7	4%
Fall 2011 [n=11]	4.8	7%

Item #8 wording: “Assignments provide an opportunity to demonstrate knowledge of course materials.”

Additionally, qualitative data gathered from students’ comments on their course evaluations showed that students from the 2010 and 2011 sections appreciated their involvement in student-led consulting projects. Several students claimed that the consulting project was what they liked most about the course; no student claimed he/she did not like the project. Individual responses to the question, “Of what potential benefit do you see this course being to you in your career?” from students in the experiential learning sections included:

- “Helps to apply concepts learned to real businesses and life experiences.”
- “I acquired the knowledge to analyze data and apply it to strategy formulation.”
- “The consulting project provides experiences that simple class work couldn’t.”
- “This course is helpful to people wanting to understand their customers.”
- “It’s very important because we need to frame our message to engage our customers.”
- “I used to work in an advertising agency and that is my career path, so this class was a great tool for that field.”
- “It is a great course with many new concepts that added to my understanding of the field.”

Answers from these same students to the question, “What aspects of this course did you most enjoy?” included:

- “The project is the most interesting part.”
- “Interaction, group work”
- “I really liked doing a real life case.”

Student responses from the traditionally taught Fall 2008 section revealed that many felt it lacked in “real-world” exposure. In response to the question, “What suggestions would you make to improve the course?” students from the Fall 2008 section offered the following:

- “Maybe a practicum, real life experience to apply theory.”
- “More practical cases and the development of a real marketing plan.”
- “Include real life projects.”
- “Link theory with application so we can learn how to do it.”

## **IMPLICATIONS**

Analysis of this change to the curriculum for Barry University's School of Business MBA-level Marketing Strategy course supports findings in the business education literature that student involvement in experiential learning improves their learning and enhances their ability to apply theoretical concepts to practical situations. The student-led consulting projects incorporated in this course's materials proved to be a powerful experiential learning assignment that helped students gain the practical experience and self-confidence necessary to succeed post-graduation.

## **LIMITATIONS**

The main limitations of this study are its relatively small sample size of 33 students and the fact that its scope is limited to one course at a single university. Student enrollment in MBA courses at Barry University is usually limited to ensure small class sizes and to afford faculty time to work with students individually and in small groups throughout the term. However, a positive aspect of the small class size is that the courses are better suited to work on consulting-type projects that would be unwieldy for courses with large numbers of enrolled students. Additionally, expanding the scope of this study to include the outcomes of incorporating the same student-led consulting project in MBA-level marketing strategy courses at other universities could make the findings more robust.

## **CONCLUSIONS**

This paper contributes to the body of knowledge about the value of incorporating experiential learning activities in business education programs. Its main contribution is through the provision of conclusions drawn through the analysis of empirical data related to student learning, student satisfaction, and student self-efficacy in marketing comparing students a traditional learning environment with those whose coursework included experiential learning in the form of team-based consulting projects. Based on results of this analysis, adding student-led consulting activities to a traditional marketing strategy curriculum should improve student outcomes and satisfaction as well as better prepare students to apply the conceptual knowledge they gain in their MBA marketing courses to real world applications.

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## Appendix 1: Mid-term Exam – Marketing Strategy

Question 1: The development of marketing strategies is a complex task. Explain why. What is the role of mission statement in developing a marketing plan and how does it affect the future of an organization? Support your answer by giving examples.

Question 2: When segmenting their markets, companies should explore opportunities.

- a) Explain how a company should find those opportunities. Give examples
- b) Clayton [2007] stated that the consumer should “hire” a product to get a job done. Explain this statement.
- c) Based on Clayton article, explain [by using some examples] how certain companies can apply this segmentation strategy. [Do not use the examples used in the articles provided in class.]

Question 3: “Today, niche marketing is about narrow and not small”

- a) Explain this statement by giving examples.
- b) Explain how technology has helped in segmenting markets and targeting certain niches of the market.
- c) How should companies segment their markets internationally? Give examples to support your answer.

Question 4: Explain how using the Net Promoter Score can help companies know which customers to focus on. What are the advantages of developing such a strategy? Give examples of how companies should adopt this strategy to reach their customers.

Question 5: Branding strategy is important as a means of enabling consumers to understand and connect with a brand, since it can help consumers organize a company’s products and services in their minds.

- a) Explain the above statement.
- b) Pick a company and explain what you would do to improve its branding strategy.
- c) Explain how certain branding strategies can hurt the main brand. Give examples.
- d) Keller and Sood [2005] explain the circumstances when brand dilution could occur. Pick two of those factors and explain how they can affect brand dilution.

Question 6: As the world’s population grows and some 90 million more individuals are added to the planet each year, many marketers are questioning some of the basic tenets of marketing. Is it right to expect continued growth? Should we be marketing goods that are likely to harm the planet? Should marketing concentrate on products that are ‘green’? These and many other questions are being asked not just by marketers but also by consumers, themselves. Recent surveys show that consumers are concerned about the products that they purchase. However, cost may also be a factor in their purchasing decisions.

- a) Explain the above statement.
- b) How difficult is it for companies to embrace green marketing strategies?
- c) How can companies develop strategies for implementing green consumer behavior?

## Appendix 2: Final Exam - Marketing Strategy

Answer the questions below. Your answers should be a maximum of one page per question.

Companies should exploit an economic downturn by identifying and meeting customer needs that competitors can't or don't see. For consumers, the world is changing: fuel prices are volatile, jobs and compensation are in jeopardy, loans are harder to get, and debts are more difficult to pay off. For B2B customers, volumes and margins are shrinking, credit is tightening, and suppliers are getting tougher. Under these pressures consumers need new types of offerings.

1. Explain the above statement by giving examples.
2. Customers need change. How can companies exploit the economic downturn to get a competitive advantage? Discuss some ways to get competitive advantage and give examples of how companies can survive a recession.
3. How can a recession impact intermediaries and companies' distribution channels? Support your answer by giving examples
4. In her article, "Should you invest in the long tail," Anita Elberse offered a different view than Chris Anderson [niche strategy]. Which one of those two strategies will be more successful in a recession? Should companies invest in niche offerings or concentrate more on "hit items?" Explain why you think one strategy is better than the other in a period of recession and give examples.
5. One of the most popular solutions for companies in a recession is to cut costs. How can marketers offer an integrated marketing communication strategy while maintaining a low cost and targeting consumers effectively?
6. In light of economic hardships in the United States, Europe, and parts of Asia, US multinational companies have to rethink their strategies in markets such as India and China. Explain why. How can these companies change their strategies in those markets?
7. In times of economic uncertainty, it is difficult to retain customers. What can managers do to get customers' attention and retain them? What method should be used to know who the companies' loyal customers are? Give examples of how this could work successfully.

# Measuring Student Ethical Behavior at the Micro Level

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## ABSTRACT

Teaching students what constitutes ethical behavior and to recognize the existence of an ethical dilemma can be a challenge. But measuring the ethical behavior of students is even more challenging. This article examines how vignettes were used to measure the ethical behavior of 798 junior-level pre-accountancy majors. The results revealed that the majority of these students (1) appeared to be honest and believe in the Golden Rule, (2) were reluctant to accept responsibility for their actions, (3) used rationalizations to justify their behavior, and (4) did not believe in the existence of a universal standard of ethical behavior. Measuring ethical behavior at the micro level can be a useful approach for introducing the subject of ethics, and enabling students to calibrate and compare their ethical behavior with peers.

**Keywords:** ethics, ethical behavior, measurement, vignettes, undergraduate students, moral compass, universal standard, ethical dilemma

## INTRODUCTION

With each passing year, the need for ethical behavior in business grows while the practice of ethical behavior appears to be declining. The role higher education plays in reversing this trend continues to be critical. Academic programs are placing greater emphasis on ethics in all disciplines.

Can ethics be taught? The answer is yes, at least conceptually. But can students be taught to be ethical? That question is debatable. Students are capable of learning what constitutes ethical behavior and even to recognize the existence of ethical dilemmas. However, learning to be ethical is based on a set of values developed over an entire lifetime resulting from the influences of parents, relatives, friends, religious institutions, media, and personal experiences.

Even more challenging than teaching ethics to students is measuring ethical behavior. The primary reason for this is that very few students who potentially might engage in unethical behavior would ever acknowledge that they are unethical. This doesn't mean that these students are not being honest about themselves. Nor does it mean that they are in denial. These students might truly believe that they are ethical, or at least striving to be, using their own individual value system and set of moral standards.

This article describes how vignettes containing ethical dilemmas were used to measure ethical behavior.

## LITERATURE REVIEW

The use of vignettes, scenarios, dilemmas, and mini-cases in research on ethical behavior is a well established technique used in many research studies (Sadler & Barac, 2005). Tsalikis and Ortiz-Buonafina (1990) observed that vignettes elicit a higher quality of data than just using simple questions.

Cagle, Glasgo, and Holmes (2008) used ethics vignettes in introductory finance classes. They administered a survey of ethical attitudes to 115 students. The students were not asked about their own opinions, but rather what the ethical response "should be" and then what the typical business person's response should be. The results of the study showed that discussion of ethics vignettes was not an effective strategy in "changing" students' ethical standards. However, it did change their "perceptions" of what a typical business person should do.

Alleyne, Devonish, Allman, Charles-Soverall, and Young (2010) observed that unethical behavior may stem from lack of ethical instruction being taught in schools and universities. They conducted a study to measure the ethical

intentions and perceptions of ethical problems among undergraduate students in Barbados. They developed several vignettes with ethical dilemmas. One dealt with an auditor shredding a document to cover up a wrongdoing. The second scenario presented a marketing scenario where a salesperson exaggerated the price of an item. The final scenario involved the financial results by a controller. The study used a self-administered survey among students who were asked whether an ethical problem was involved and whether they would behave in the same manner as the individuals portrayed in the scenarios. The study found significant influence on ethical perceptions and intentions by factors such as gender, religious commitment, and academic major.

Wilhelm (2008) and Wilhelm and Czyzewski (2012) conducted studies showing how significant improvements in student moral reasoning could be obtained by introducing specific strategies and mini-cases over the semester in an undergraduate cost accounting course and measuring results by a revised version of an instrument called the Defining Issues Test-2 (DIT-2) developed by Rest (1999).

Other methods have been used to measure the ethical behavior in students. Klimek and Wenell (2011) compared the ethical reasoning abilities of accounting students in a required Ethics in Accounting course to accounting students who merely had ethics discussions integrated into their other accounting courses. They measured ethics reasoning abilities using Rest's (1999) Defining Issues Test-2 (DIT-2). The students who took the standalone course before graduation seemed to have higher ethical reasoning abilities than those students who had ethics integrated into their accounting courses. Sadler and Barac (2005) conducted a study to gauge the ethical view of future auditors and public accountants, namely final year accounting students in South Africa, in relation to specific scenarios, and to compare the results of similar studies conducted in Australia and Ireland. In particular, the study was conducted to determine whether the students have similar ethical values, whether their ethical views would be affected by the risk of getting caught, and whether they would report any illegal or unethical action to relevant authorities (i.e., blow the whistle on the offender).

## **MEASURING ETHICAL BEHAVIOR**

A few years ago, we began thinking of ways to measure the ethical behavior of our students, and using these results as a roadmap for students to assess the condition of their ethical behavior. As providers of accounting education, we consider ethical behavior to be the most important attribute our students can possess. Our goal was to quantify this attribute by measuring how students react when faced with ethical dilemmas.

One initial hurdle we encountered was when we asked students certain types of questions that could be perceived as being judgmental or somewhat threatening to their self perception, defense mechanisms might be set off. For example, asking students if they would steal would most likely elicit an obvious answer of "no." Or some students might inquire about what they are stealing or why they are stealing it. To remove the potentially threatening nature of such questions, it was necessary to use situations that focus on behavior rather than labels (e.g., stealing).

A second hurdle to measuring ethical behavior was getting students to respond to how they would really behave when confronted with an ethical dilemma. We needed students to avoid selecting the response that they thought was the right answer (i.e., what the most ethical behavior should be).

To overcome these hurdles and obtain responses that accurately captured a student's actual behavior, we disguised the questions as vignettes containing simple ethical dilemmas as the measurement tool. These vignettes described common situations that people encounter everyday and which don't require a lot of time to think about. We made these ethical dilemmas somewhat fun, humorous, and non-threatening. The vignettes were presented in class to the students by use of PowerPoint slides, projecting each question one at a time in order to obtain spontaneous responses – often times evoking laughter, which lightened the mood. The students were given Scantron Form 20-S survey forms to anonymously record their responses.

Over a three-year period, 798 junior-level pre-accountancy majors participated in this survey while enrolled in their first semester of intermediate accounting. These students had previously completed two accounting classes – introductory financial and managerial accounting. To enroll in the class, students were required to submit an application after satisfying the 3.0 GPA and prerequisite requirements. The class GPA averaged approximately 3.3 on a scale of 4.0. There was an even spread of male and female students. Approximately 80% of these students

worked at least part-time and approximately two-thirds were transfer students from community colleges. The student profile during this three-year period averaged 38% White, 21% Hispanic, 21% Asian, 13% International, 3% African American, and 4% other. Our accounting program has a very culturally diverse student population and an above average number of ESL (English as a Second Language) students.

Each semester, the results were shared with the students at their very next class meeting after the survey was given. The professor explained to the students what their responses meant in terms of ethical behavior, which was followed by a short lecture on the ethical theory behind each vignette.

**VIGNETTES OF A GENERAL NATURE**

When individuals are questioned about how they would react to a specific ethical dilemma, one response that is often made involves the use of a qualifier such as “it depends” – which means that the behavior is dependent upon how much, who benefits, who is harmed, the magnitude, justification for the behavior, or some other type of excuse. Rationalizations such as these leave the door wide open to unethical behavior. It was the potential for this kind of response that became the focus of the vignettes.

The ethical vignettes in Table 1 queried students about receiving too much change from a cashier after making a purchase of groceries. The dollar amount of the excess change made a slight difference in the student responses. Not only would 62% of the students return \$10 too much change, 52% of the students would return even 50 cents. Students were told that the most ethical response is to return the excess change, no matter how much.

**Table 1: Receiving Too Much Change**

When purchasing groceries, you notice that the cashier has given you \$10 too much change. What would you do?	
24%	Keep it.
62%	Return it.
12%	I would consider it a friendly discount if the store’s prices are too high.
2%	Something else.
When purchasing groceries, you notice that the cashier has given you 50 cents too much change. What would you do?	
32%	Keep it.
52%	Return it.
12%	It’s not worth mentioning unless I’m overcharged.
4%	Something else.

Table 2 contains the responses to whether it is right to take office supplies home for personal use. Although 51% said no, 39% responded that it depends on how much. Materiality was clearly a consideration by students in this vignette. Students were told that the most ethical response is that it’s not right to take office supplies home, no matter how much.

**Table 2: Taking Office Supplies Home**

Is it right to take office supplies home from your employer for personal use?	
10%	Yes
51%	No
39%	It depends on how much.

Table 3 provides student responses to finding \$900 on a sidewalk. When the identity of the person losing the money is known to the students, especially if it is a little old lady, 71% of the students would return what they found. Sixty-four percent of the students responded that they would keep the money if the identity of the owner is not known.



Students were told that the most ethical response is to return the money to the person who lost it, either directly or indirectly, without accepting a reward.

**Table 3: Finding Money**

You find \$900 on the sidewalk. What would you do?	
46%	Keep it.
15%	Turn it in to the local police station
18%	Keep it and feel guilty.
7%	Donate it to charity.
14%	Something else.
You saw a little old lady drop \$900 on the sidewalk. What would you do?	
2%	Pick it up and keep it.
71%	Pick it up and return it to her.
1%	Keep it and feel really, really, really guilty.
25%	Return it to her and accept a reward if offered.
1%	Something else.

Table 4 indicates how students view cheating on an income tax return. Students found it less acceptable for corporations to cheat than for individuals by a margin of 90% to 66%.

**Table 4: Cheating on an Income Tax Return**

Is it right for individuals to cheat on their income tax returns?	
9%	Yes
66%	No
25%	It depends on how much.
Is it right for a corporation to cheat on its income tax return?	
2%	Yes
90%	No
8%	It depends on how much.

However, the amount of cheating was important to 25% of the students if the taxpayer is an individual. But for a corporation, the need to know how much the taxpayer cheated dropped to 8%. It appears that materiality is dependent upon the status of the taxpayer. Students were told that the most ethical response is that cheating is not right, regardless of who is doing the cheating or how much.

The ethical vignette contained in Table 5 is similar to those contained in Table 1, except that the dollar amount of the undercharge on the bill brought by the waiter doesn't change. Even though only 19% of the students would have the waiter correct the bill, 30% of the students elected not to personally profit from this error (leaving the waiter a gratuity equal to the undercharge). This raises an interesting behavioral question. Did these students justify their behavior by the fact that they didn't profit? In other words, is there a rationalization in which individuals forgive their own unethical behavior if there is no personal gain?

**Table 5: Being Undercharged**

The waiter brings you your bill and you are undercharged by \$5. What would you do?

- 35% Pay the bill and leave.
- 19% Ask the waiter to correct the bill.
- 12% Pay the bill and leave the waiter an extra \$4.
- 30% Pay the bill and leave the waiter an extra \$5.
- 4% Something else.

A question not asked was what if the undercharge had been only fifty cents instead of five dollars. Looking at the earlier results in Table 1, it is probable that the materiality of the undercharge would not have been statistically significant. The students were told that the most ethical response is to ask the waiter to correct the bill.

### **NOT ACCEPTING RESPONSIBILITY**

The most vocal student reaction came from the vignettes in Table 6. The results indicate that more than half of the students appear to be unwilling to accept responsibility for their conduct. Not telling a roommate about dropping the roommate's toothbrush on the floor is an example. While the most ethical response is to wash the toothbrush and tell the roommate, 70% would wash the toothbrush, but 64% would not tell the roommate. Causing more than a ding to another car is also an example of not accepting responsibility. The most ethical response is to leave a note. But 46% of the students would go so far as to move their car to another parking space, while 22% would just ignore the damage.

**Table 6: Responsibility**

You drop your roommate's toothbrush on the floor. What would you do?

- 19% Pick it up and put it back.
- 34% Wash it carefully and put it back.
- 1% Leave it on the floor (Gremlins did it).
- 36% Wash it and tell your roommate.
- 10% Something else.

While opening your car door, you accidentally cause more than a ding to the car next to you. What would you do?

- 22% Ignore it.
- 46% Move your car to another parking space.
- 21% Leave a note on the dash.
- 11% Something else.

### **ACADEMIC DISHONESTY**

There is no greater incentive for students to engage in unethical behavior than grades. Table 7 contains two vignettes that involve students being passive participants in academic dishonesty. With regard to observing another student cheating, the most ethical response is to report it to the professor. However, 72% of the students would ignore the cheating.

**Table 7: Cheating and Exam Grade**

You see another student cheating in class on an exam. What would you do?	
72%	Ignore it.
7%	Send an anonymous note or talk to the professor.
3%	Also cheat in order to stay competitive.
11%	It depends if my grade is based on a class curve.
7%	Something else.
When you get your exam back, you discover that the professor has added incorrectly and given you 10 extra points. What would you do?	
51%	Ignore it.
21%	Tell the professor.
16%	Keep the points to offset my careless errors.
3%	Keep the points because of the student I saw cheating.
9%	Wait until the end of the semester to see if it affects my letter grade.

With regard to the extra points received as a result of the professor's error in grading the student's exam, the students were told that the most ethical response is to tell the professor. But 51% would ignore receiving the extra points. These students were not inherently dishonest. Yet too many of them failed these two ethical dilemmas by keeping points they didn't earn and/or failing to report the cheating by another student. Notice that over twice as many students believed that keeping 10 extra points on an exam is more acceptable than keeping \$10 too much change (See Table 1).

## EATING TIME

When a new staff accountant uses up an entire time budget after only completing half of a client's tax return, the most ethical response of those listed in Table 8 is "Tell my supervisor that I'm only halfway done and have used up the entire 10 hours." Although 56% of the students would tell their supervisor, there were still a statistically significant high percentage of students unwilling or afraid to accept responsibility for exceeding the budget.

**Table 8: Client Budget**

You are a new staff accountant at a firm and have been given your first client tax return to prepare. Your supervisor gives you a budget of 10 hours to complete the return. This is how many hours the firm expects to bill the client. After 10 hours, you have completed only half of the return. What would you do?	
38%	Charge only 10 hours and take the return home with me over the weekend to finish.
56%	Tell my supervisor that I'm only halfway done and have used up the entire 10 hours.
4%	Finish the return and charge whatever time it took me to complete it.
1%	Call in sick and finish the return at home without charging any more time.
1%	Send out my resume.

This question always leads to a class discussion about what it means to "eat time." And this might be the best lesson accounting students learn because too many new entry-level staff accountants are so anxious to please and make a good impression that they think not exceeding the budget is the highest priority. The students are told that there might be other reasons why they exceeded the budget other than being slow. Maybe the staff accountant who completed the tax return in the prior year also ate time because the budget is not realistic and the client is not being charged enough. It is carefully explained to students that eating time is one of the most unethical violations in which a new staff accountant can engage. The students were told that the correct answer (which was not one of the choices) is to keep the supervisor informed when half the budgeted hours are used up and the return is not halfway completed.

## LEVELS OF MORAL DEVELOPMENT

In addition to the vignettes, two additional questions were presented to the students. For the first question, students were asked to identify with which statement in Table 9 they most agreed. Seventy-four percent of the students selected “If what I do treats others the way I would want to be treated (truthfulness, respect, and integrity), then it is right.”

**Table 9: Levels of Moral Development**

Which of the following statements do you <u>most</u> agree with?	
1%	If what I do is beneficial <u>only</u> to my best interests, then it is right.
6%	If what I do is acceptable using the standards of my family and friends, then it is right.
6%	If what I do is acceptable using the standards of my country and its laws, then it is right.
13%	If what I do is beneficial to the greatest number of people affected by it, then it is right.
74%	If what I do treats others the way I would want to be treated (truthfulness, respect, and integrity), then it is right.

What the students didn't know until after responding to this question is that these choices define the following five levels of moral development described by Collins and O'Rourke (1994):

- Egoism: How does the action relate to me? If the action furthers my interests, then it is right. If it conflicts with my interests, then it is wrong.
- Social Group Relativism: How does the action relate to my social group? If the action conforms to the social group's norms, then it is right. If it is contrary to the social group's norms, then it is wrong.
- Cultural Relativism: How does the action relate to the national culture, particularly its laws? If the action conforms to the national culture's norms, then it is right. If it is contrary to the national culture's norms, then it is wrong.
- Utilitarianism: How does the action relate to everyone who is affected by it? If the action is beneficial to the greatest number of people affected by it, then it is right. If it is detrimental to the greatest number, then it is wrong.
- Deontology: How does the action relate to my duty to treat others in the way that I would want to be treated? Does it treat every stakeholder truthfully and with respect and integrity? If it does, then it is right. If it does not, then it is wrong.

Students with knowledge of Star Trek always recognize utilitarianism as the Vulcan philosophy of “the needs of the many outweigh the needs of the few.” Most students recognize deontology as the Golden Rule. Rather than students being told which choice is the most ethical response, it was explained that egoism is the lowest level of moral development and deontology is the highest. In-class comments by the professor about this question were followed by a short lecture that communicated the following.

The highest level of the five, deontology, approaches decisions from a human rights standpoint and develops a value system as to how other people are to be treated. Deontology evaluates a decision based on the motives for the decision rather than on the decision itself, whereas the utilitarian assesses the consequences of the decision. A deontologist does the right thing because it is the right thing to do. A utilitarian will do what is right when it is beneficial to the greatest number of people. And something less than ethical behavior is very likely to result if only egoism and relativism are practiced. (Collins & O'Rourke, 1994)

## THE EXISTENCE OF A UNIVERSAL STANDARD

A second question students were asked is contained in Table 10. This question is similar to the one posed by Zogby International, the renown polling firm, in a 2002 nationwide poll of 401 college seniors. (NAS/Zogby, 2002)

**Table 10: Does a Universal Standard Exist?**

Which of the following statements do you <u>most</u> agree with?	
26%	What is right and wrong depends on differences in individual values and cultural diversity.
16%	There are clear and uniform standards of right and wrong by which everyone should be judged.
51%	Something in between the first two statements.
7%	I don't agree with any of these statements.

The responses to this question were mixed. Fifty-one percent of the students selected “something in between” differences in individual values/cultural diversity and clear/uniform standards of right and wrong. With the “something in between” option not being offered in the Zogby poll, 73% of those students selected “differences in individual values and cultural diversity.” The 84% of our students who didn't agree that a universal standard exists were asked to consider the following explanation for what might constitute the “something in between” option:

One could certainly argue that, over time, the moral compass changes within the same society. One also could argue that in different societies at the same point in time, the moral compass varies due to cultural differences. But within the same society at the same point in time, the moral compass that guides the ethics practiced in that society should be calibrated so as to apply clear and uniform standards of right and wrong, not differences in individual values and cultures. (Stout & Weiss, 2003)

### LITMUS TEST FOR ETHICS

Following the survey, students were provided with the following list of questions to serve as a litmus test for ethical behavior:

- Could you explain your behavior to your peers without guilt or rationalization?
- Could you explain your behavior to your family without guilt or rationalization?
- Would you engage in similar behavior again?
- Would you feel the same about your behavior, if you were on the other side of the issue?
- Would you feel comfortable seeing a description of your behavior published on the front page of your local newspaper?

It was explained to the students that individuals who are unable to answer each of these questions in the affirmative about a decision or action have probably experienced an ethical dilemma that they either failed or are failing. The students were told to think about a decision they made in their adult lives in which they questioned whether it was right or wrong. And then they were asked to apply this litmus test and evaluate whether they would make the same decision again.

### CONCLUSION

What can be concluded from these results? First, measuring ethical behavior, even at the micro level, affords students with an introspective look at their ethical behavior and an opportunity to compare themselves to their peers. Second, these students appear to be honest individuals. Most of them believe in the Golden Rule. However, their unwillingness to accept responsibility for their actions and the use of rationalizations appear to negatively impact their ethical behavior. Third, a universal standard of ethical behavior does not exist for over four-fifths of the students, which supports the findings by Zogby. Finally, measuring ethical behavior at the micro level has the added advantage of serving as a useful tool for teaching ethics. Who knows, some students might actually recalibrate their moral compass as a result.

We limited our research to students who were taking the first of three courses in intermediate accounting. The results might have differed with students at other universities or in other disciplines. Furthermore, the ethical behavior of these students might change after they take more accounting classes, take one or more of the required

courses in ethics, or are exposed to real ethical dilemmas. In the future, we plan to examine whether age, gender, GPA, and the number of standalone ethics courses taken by these students are statistically significant. We also plan to obtain written comments from students or debrief them on the reasons for the choices they made. Although the results of a longitudinal study were not reported in this article, a cursory examination of the data for this three-year period revealed that the results were consistently similar from year to year.

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# Impact of Undergraduate Business Curriculum on Ethical Judgment

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## ABSTRACT

As the business news continues to be inundated with scandals, business schools must find a better way of impacting the attitudes of their graduates. While a variety of approaches can be taken, a hybrid approach appears to have the best impact. A study comparing the attitudes of freshmen and seniors reveals an improvement in their ethical awareness. However, for the most part, the impact of the curriculum was not statistically significant.

**Keywords:** ethics education, undergraduate curriculum

## INTRODUCTION

“Business ethics is defined as the study of how individuals, at all levels of an organization, try to make decisions and live their lives according to a standard of right or wrong behavior.”(Heller and Heller, 2011) As such, it doesn’t take an investigation to know the concerns about ethics in business today. The numerous corporate scandals; whether fraud, embezzlement, or insider trading, have led to a lack of faith in the manner in which business is conducted. Fortunately, the number of these occurrences (at least those uncovered) is relatively low and those involved have been prosecuted. More troubling are the more numerous instances of individuals who have not broken the law but clearly violated the standard of “doing the right thing”.

In our college, the importance of ethics can be seen through the learning goals of our undergraduate degree (see appendix I). The question is not whether ethics in business warrants attention. Rather, by what means should this issue be addressed. In this study, we examine the various approaches to business ethics education. Next, we describe our college’s approach. Finally, we evaluate the effectiveness of our efforts.

## ATTITUDES OF BUSINESS STUDENTS

A great deal of the literature has focused on the nature of business students and their attitudes toward ethics. Borkowski and Ugras (1992) explored the impact of age, sex, and experience on students’ attitudes toward ethics. Lau (2010) examined the impact of gender and religion on the receptiveness of students to ethics education. Smyth, et.al., (2009), using cheating as a surrogate for business ethics, compared results across three different institutions. They measure the impact of sex, type of institution, and whether the students were business majors or not. In a similar manner, Lau and Haug (2011) explored the impact of sex, college, and class rank relative to students’ attitudes toward ethics. In addition to these individual studies, Borkowski and Ugras (1998) performed a meta-analysis of empirical research from 1985 through 1994 to examine the impact of gender, age and major.

Several of the studies above found that business students have a lower ethical standard than other college students. Some have gone so far as to suggest that business education contributes to the problem of business ethics (Podolny, 2009). David Wilson, president and CEO of the Graduate Management Admission Council goes further in saying “Ethics cannot be taught in a business school. It has to be part of the DNA” (Bhattacharya, 2013).

## ACADEMIC RESPONSE

As the source of business education, business schools must bear some responsibility for ethical issues of today. An effort to remedy this issue has been underway for a numbers of years. The primary accrediting body of business schools, The Association to Advance Collegiate Schools of Business has recognized the need to take action. Their white paper, “Ethics Education in Business Schools”, (AACSB, 2004) highlighted their concern. Closely matched to this effort was the inclusion of ethical considerations in their accreditation standards. Their most recent version of Business Accreditation Standards includes two mentions of ethics. Standard 9 requires that “Curriculum content is

appropriate to general expectations for the degree program type and learning goals.” It goes into detail with the following:

- General Skill Areas
  - Ethical understanding and reasoning (able to identify ethical issues and address the issues in a socially responsible manner)
- General Business and Management Knowledge Areas
  - Social responsibility, including sustainability, and ethical behavior and approaches to management (AACSB, 2013).

As such, ethics and ethical behavior are treated like other learning outcomes of the business degree. And, as with other business outcomes, the AACSB does not prescribe how a school should accomplish the objective.

## TEACHING ETHICS

Business schools have addressed the issue of ethics in three ways. Initially, many schools simply identified ethics content in their existing curriculum. As the interest in ethics grew, many schools included an ethics course in their undergraduate programs. Finally, some have combined both of these approaches.

The initial approach, integration of ethics throughout the curriculum, is somewhat difficult to evaluate. Because the content is spread out over a number of courses, the only point at which the effort can be evaluated is at graduation. However, the advantage of this approach is the opportunity to discuss ethical considerations in the context of business decisions. Dzurinin, et al, (2013) provided a thorough investigation of an integrated program that yielded significant improvements in terms of awareness of ethical issues and improved ethical decision making ability.

The use of a stand-alone ethics course allow for the analysis of the specific content and a direct measure of the course’s impact. However, a number of studies have examined such courses with mixed results. Duska (1991) argued that the value of an ethics course comes from providing ethical knowledge. Jewe (2008) found that taking an ethics course had no impact on ethical attitudes. Warnell (2010) found a single course had significant impact on a student’s ability to identify ethical issues but may needed reinforcement through an integrated curriculum to reach the level of making ethical decisions. Cloninger and Selvarajan (2010) found that students who had completed Business and Society course demonstrated better ethical judgment than those that had not taken the course. Finally, Waples, et al, (2009) conducted a meta-analytic investigation of 25 business ethics course studies. They concluded that courses had minimal impact on changing ethical perceptions, behavior, or awareness.

Finally, a hybrid approach involves both a dedicated course and the integration throughout the curriculum. Ritter (2006) suggested that “...the ideal situation occurs when students learn basic philosophical theories underlying ethical decision-making in a required ethics class (e.g., normative ethical theories, deontological theories, etc.) and ethics is further integrated throughout additional business classes to apply the concepts to specific contexts that the students may face in their careers.” Altmeyer, et al, (2011) studied such a hybrid approach to determine the impact of the curriculum on ethical awareness. They found that students’ progression through the curriculum had no significant impact on their awareness of ethical situations in a business setting.

## APPROACH

In our college, we have taken the hybrid approach. First, we imposed a required ethics course. Initially, this course was a generalized Professional Ethics course that required by a number of majors. More recently, the course has been specialized to a Business Ethics course. While the theory aspects are the same for both courses, the narrowing of interest allows for use of cases and examples that are exclusively in the business realm.

In addition, we recognize that the impact of this course would be limited if the importance of ethics was not embedded in the business curriculum. As such, we sought to inform all areas of business with the ethical considerations involved. Table 1 shows the coverage of ethics in our required business courses. While each major contains elements of ethics in their program, the content here reflects that which is common among all business students.

Finally, as other studies have indicated, we recognized that background my impact students’ attitudes towards ethics. But, whether the factor is based on gender, religion, or predisposition of business students, it is a factor



beyond our control. Our goal is to produce ethical business leaders. We have little control over what beliefs or attitudes the students bring with them when they arrive in our institution. The objective of our curriculum must be to have a positive impact on their ethical reasoning.

**Table 1: Coverage of Ethical Issues in Undergraduate Curriculum**

Required Tool & Core Courses		Ethical Issues
Course Title	Course Code	Level of Coverage
Exploring Business	BUS 1500	U
Financial Accounting	ACCTG 2602	U
Managerial Accounting	ACCTG 2603	U
Marketing Concepts	MKTG 3703	A
Principles of International Business	BUS 3715	U
Fundamentals of Management	MGT 3725	U
Operations Management	MGT 3789	U
Strategic Management & Leadership	MGT 4850	E
U = Recognition/Understanding: Assignments that test students' ability to recognize or recall relevant course material.		
A = Apply/Analyze: Assignments that test problem-solving skills or decomposition based on similarities or differences.		
E = Evaluate: Assignments that require student judgment regarding performance or compliance with norms.		

## STUDY

Our study examined the attitudes of students at both the freshman level and as graduating seniors. In this way, we can evaluate the impact of the entire curriculum, including the ethics course. The instrument used a 17 question survey utilizing a Likert scale. The survey was adapted from Ruch and Newstrom (1975). It includes a variety of ethical judgments that are common in the workplace (see Appendix II).

As our intent was to evaluate the impact of our two-pronged approach to teaching ethics, it was important that we capture the student's attitudes before their exposure to our ethics education. Students were surveyed in two courses; Exploring Business, our freshman business course, and Strategic Management and Leadership, our capstone course. In each course, the survey was conducted before any discussion of ethics. In this way, the survey was able to capture the students attitudes, rather than asking the students to provide the "correct" answer based on classroom discussion.

## RESULTS

Results (Table 2) were compared using a single-factor ANOVA by question and also on the student averages. While the only three questions showed statistically significant improvement, the overall average did show modest improvement (1.96 for freshmen vs. 1.84 for seniors).

A second measure of success of our curriculum is the result of the major field test offer by Educational Testing Service (ETS). This comprehensive exam is given to graduating seniors across the country. ETS offers comprehensive national comparative data for the Major Field Tests, enabling comparisons of program effectiveness with programs at similar institutions nationwide (ETS, 2013). While the area of ethics is grouped under the topic Legal and Social, the results demonstrate the impact of our curricular efforts. Our students earned a 65 percentile on this measure. Thus, while we can't judge their level of ethical awareness, we do know that they did score in the top 35% among all business graduates.

## LIMITATIONS, FURTHER STUDY

Given our attempt to evaluate the impact of our curriculum on the students, a longitudinal study with the same individuals evaluated as both incoming freshmen and outgoing graduates would have been ideal. However, the nature of our student body precludes such an approach. A recent review of students in our capstone business course, Strategic Management and Leadership, showed that only 30% of the graduating seniors had started at our university as business majors. The majority, 40%, had begun at our university but in a different college. The remaining 30% began their academic careers at other institutions.

**Table 2: Questions with Significant Improvement**

Question	Exploring Business	Strategic Management and Leadership	p	
1	2.63889	2.03226	0.01612	*
2	1.88889	1.80000	0.71240	
3	1.66667	1.26667	0.02966	*
4	2.22222	1.80645	0.12876	
5	2.58333	2.80645	0.44077	
6	2.30556	2.29032	0.95492	
7	1.14286	1.12903	0.91044	
8	2.19444	1.77419	0.07660	**
9	1.22222	1.38710	0.35262	
10	1.17143	1.41935	0.12331	
11	1.30556	1.20000	0.40264	
12	2.86111	2.83871	0.93557	
13	1.27778	1.35484	0.63533	
14	2.41667	2.22581	0.46849	
15	1.97222	1.74194	0.37812	
16	2.27778	2.22581	0.84574	
17	2.11111	2.00000	0.63727	
Averages	1.96201	1.84422	0.40215	

\* - significant at  $p < .05$

\*\* - significant at  $p < .10$

Finally, as with all studies of ethics, one must also recognize that there is a difference between recognizing ethical issues and taking appropriate actions when faced with the actual scenario. It is easy to do the right thing when there are no advantages or consequences.

As we move forward, this study will be replicated. In this way we will be able to examine two issues. First, and primary, is the impact of our continuously improving curriculum. Of particular interest is the impact of the required Business Ethics course vs. the more generalized Professional Ethics course. Second, as the concern for business ethics are continuously in the media, does this impact the attitudes of incoming freshmen.

## CONCLUSION

Given today's environment, it is little wonder that schools of business are looking for ways to improve the impact of ethics education. While there is evidence in the literature that our college's hybrid approach is the superior approach, our study did not find a statistically significant impact of our curriculum. However, given the studies that suggest that business graduates are prone to being unethical and/or that business education contributes to unethical behavior, a modest improvement is some measure of success. Finally, as a key learning goal of the curriculum, efforts are on-going to improve the attitudes of our graduates.

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## Appendix I: Undergraduate Business Learning Goals

1. Recognize, analyze, and solve business problems.
  - 1.1. Students will demonstrate the ability to recognize, analyze, and solve problems in the fields of accounting, finance, management, and marketing.
  - 1.2. Students will be able to recognize and understand global business issues; and, they will be able to apply this understanding in solving business problems with multinational dimensions.
  - 1.3. Students will be able to apply an interdisciplinary approach to solving problems.
2. Apply appropriate technologies to solve business problems.
  - 2.1. Students will demonstrate literacy in the use of technology for collecting, filtering, organizing, processing, and distributing business data and information.
  - 2.2. Students will be proficient in the use of spreadsheets to evaluate business information and present their results in organized graphical or tabular formats.
3. Demonstrate effective oral and written communication skills.
  - 3.1. Students will be able to deliver effective oral business presentations, using audio or visual technology where applicable.
  - 3.2. Students will be able to write clear and informative business reports, including executive summaries, case analyses, and reports involving persuasive argumentation.
4. Identify and assess ethical and social responsibility issues.
  - 4.1. Students will be able to identify ethical issues in business and respond to the resulting dilemmas.
  - 4.2. Students demonstrate literacy and understanding of the legal and social responsibility obligations at the organizational and individual levels.
5. Demonstrate professional behavior in business situations.
  - 5.1. Students will understand and exhibit professional conduct in classroom, job search, and workplace environments.
  - 5.2. Students will have a basic understanding of conflict resolution methods.
  - 5.3. Students will demonstrate knowledge of factors that contribute to the effective performance of leaders and teams.

## Ethical Behavior Survey

### How Unethical Do You Consider These Business Practices?

Please rate the following between 1 and 5 where

1=Very Unethical

2=Basically Unethical

3=Somewhat Unethical

4=Not Particularly Unethical

5=Not At All Unethical

1. Using company services for personal uses
2. Padding an expense account up to 10%
3. Padding an expense account in excess of 10%
4. Giving gifts/favors in exchange for preferential treatment
5. Taking longer than necessary to do a job
6. Doing personal business on company time
7. Divulging confidential company information
8. Concealing one's work errors
9. Passing blame for work errors to an innocent co-worker
10. Claiming credit for someone else's work
11. Falsifying time/quality reports
12. Calling in sick to take a day off
13. Authorizing a subordinate to violate company rules or policies
14. Using company materials and supplies for personal use
15. Accepting gifts/favors in exchange for preferential treatment
16. Taking extra personal time (long lunches, late arrivals, ...)
17. Not reporting others' violations of company rules and policies

# **Does Short-Term Travel Impact Student's Cross-Cultural Aptitude? A Quasi-Experimental Study of Organizational Behavior Students**

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## **ABSTRACT**

This study evaluates augmenting the organizational behavior course using short term travel as a mechanism for cross-cultural learning. Data were gathered concerning students' locus of control, tolerance of ambiguity, a self-assessment of learning outcomes of the organizational behavior course, and perceived importance of, as well as perceived accomplishment of, applied learning outcomes.

**Keywords:** Short-term travel, locus of control, tolerance of ambiguity, learning outcomes

## **INTRODUCTION**

Due to the increasingly global nature of the business environment, developing a global mindset and being able to understand and work across cultures is a critical component for company success (Gupta & Govindarajan, 2002). For this reason, global awareness and intercultural competency are important educational outcomes for business students, as they are for all university students. Since 1974 AACSB has placed an emphasis on these competencies as part of the accreditation standards for business programs.

“Contents of the learning experiences provided by programs should be both current and relevant to needs of business and management positions. This implies, for example, that present day curricula will prepare graduates to operate in a business environment that is global in scope. Graduates should be prepared to interact with persons from other cultures and to manage in circumstances where business practices and social conventions are different than the graduate's native country” (AACSB, 2012, p. 20)

One methodology for facilitating global awareness and intercultural competency is study abroad. While study abroad programs (SAPS) are long-standing practice at Ivy League institutions, “only about 2.1 percent of all American college students participate in a study abroad program of any length” (Duke, 2000, p. 15) and only 9.1% of US undergraduates studied abroad in 2010/11 (Institute of International Education, 2013), yet these programs have been found to be “one of the most important experiences students can have during their undergraduate years” (Paige, Fry, Stallman, Josie & Jon, 2009, p. S41). The popularity of short-term study abroad programs has increased more than a third over the past ten years, while the popularity of other forms of travel decreased or remained stagnant (with the exception of summer-term travel which increased slightly) (Institute of International Education, 2011).

## **THEORETICAL BACKGROUND**

Tajes and Ortiz (2010, p. 34) find that even a short-term SAP provide “a statistically significant improvement in students' knowledge and understanding of the host and home countries.” Using qualitative research techniques, Ritz (2011, p. 176) concludes, “short-term study abroad programs as course components provide significant educational value as well as opportunities to practice holistic education and promote transformative learning.” Their findings are in line with the research on cross-cultural adaption and learning in the organizational literature, which finds that experiential learning (e.g., cross cultural experiences) is a critical factor in the development of cross cultural competency (Moon, Choi & Jung, 2012). In fact, short term cross-cultural assignments have been found to improve later cultural adjustment and lower expatriate failure rates when compared to in country training (Shen & Lang, 2009).

It seems pretty clear that short-term SAP has the ability to promote increased cultural understanding and provide transformative learning experiences. Here we ask a further question – what are possible mediators for the benefits

of short-term SAP? That is, what parts of students' knowledge, attitudes, personality, etc., is SAP having an impact on?

With regard to personality and attitudes, we look to locus of control and tolerance for ambiguity, for two reasons. First, having an internal locus of control and a higher tolerance for ambiguity have been shown to be important for successful leadership (Judge, Thoresen, Pucik, & Welbourne, 1999; Ng, Sorensen, & Eby, 2006), and are believed to be important for successful cross-cultural endeavors (Flytzani & Nijkamp, 2008; Mol, Born, Willemsen & Van Der Molen, 2005). Second, there is evidence that they are malleable, that is, they can be learned (Foulds, 1971; Katsaros & Nicolaidis, 2012). Further, this type of travel experience, in conjunction with classroom training about culture, motivation, personality and behavior, would likely be just the type of teaching experience to promote this type of learning.

## **PURPOSE OF THE STUDY**

This study examines the use of short-term (10 day) intense international experiences that are directly linked to the learning outcomes of the organizational behavior (OB) undergraduate business course. The facilitating mechanism for the travel experience is the general educational requirement of our institution's curriculum for a learning community experience during the student's second year.

### **Hypotheses**

- Hypothesis 1: Short-term travel will increase the perception of internal control in traditionally-aged undergraduate OB students ( $H_1$ ).
- Hypothesis 2: Short-term travel will increase tolerance of ambiguity in traditionally-aged undergraduate OB students ( $H_2$ ).
- Hypothesis 3: Short-term travel will increase self-reported mastery of OB concepts in traditionally-aged undergraduate OB students ( $H_3$ ).
- Hypothesis 4: Short-term travel will increase interest in applied learning in traditionally-aged undergraduate OB students ( $H_4$ ).
- Hypothesis 5: Short-term travel will result in the perception that applied learning did occur in traditionally-aged undergraduate OB students ( $H_5$ ).

Additionally, there is some evidence that developmental experiences impact males and females differently (Stevenson, 2010; Swanson, Kowalski, Gettman & Lee, 2012). Therefore we will examine differences in results by gender.

## **RESEARCH METHODOLOGY**

### **Participants**

Six sections of a sophomore-level organizational behavior course were surveyed in the first and last week of the spring semester. Four sections did not involve travel and served as a control group, and two sections traveled in ten-day intensive study visits over spring break, one to Malta and Sicily, and the other to Peru. All participants were traditionally-aged students at a small New England liberal arts college. Of a total of 86 control-group students, complete data were received from 69. Of 36 students in the travel sections, 34 provided complete data.

### **Academic Program**

The short-term travel was part of a general education experience and was integrated into the organizational behavior course design through a learning community. Students in the learning community met weekly to receive pre-departure briefings on the history, culture, government, economy, and sociology of the region to be visited; they performed a team-based research task on certain aspects of that region; and they wrote a team paper about their finding and gave a briefing to other students about what they learned. The travel program included a visit to a university campus with a lecture by an indigenous expert on the influence of culture on business climate and activities in that country, visit to representative businesses in the local economy and discussions with executives

about local business practices and challenges, visits to social outreach organizations and interactions with people of mixed socioeconomic standing, and visits to important historical and cultural sites (Duke, 2000). Subsequent to the travel, all students in the class worked as a team to create a half-hour video of what they learned through their travel experience (based on the learning objectives of the learning community) and this video was shown publicly on campus. Finally, short-term travel students wrote a reflection paper describing (using the concepts of the course) what they learned through the travel experience and through their team experiences.

### Survey Instrument

Two aspects of personality were measured: locus of control ( $H_1$ ) and tolerance of ambiguity ( $H_2$ ). Locus of control (LC; Rotter, 1966) indicates the degree to which individuals perceive that they affect events as opposed to be controlled by external forces such as fate or luck. Rotter's original 26-item scale was used with lower scores indicating a more internal LC. Tolerance of ambiguity (TA) is defined by (Budner, 1962, p. 29) as "the tendency to perceive ambiguous situations as desirable." The instrument used is MSTAT-II, a 13-item measure developed by McLain (2009). Higher scores indicate a greater TA. These measures were included in the study to examine changes over the course of the semester since both locus of control and tolerance of ambiguity measures are considered to be related to ethical decision making (Chiu, 2003; Weisbrod, 2009) and to leadership (AACSB International, 2012; Hubner, 2003), with more *internal* locus of control and higher tolerance for ambiguity having positive leadership implications (Judge et al., 1999; Ng et al., 2006).

To measure self-perception of knowledge and skill in OB ( $H_3$ ), the learning objectives of the course (OB-Obj) were transformed into an eight-item instrument (see Appendix A). Higher scores indicate a greater perception of mastery.

To assess perceived importance of applied learning ( $H_4$ ) and perceived outcomes through applied learning ( $H_5$ ), the 12 item SELEB scale was used (see Appendix B) (Toncar, Reid, Burns, Anderson & Nguyen, 2006). The SELEB scale was used to assess perceived importance of service learning (indicated by PI and used pre and posttest), as well as the impact of the class team work on their educational experiences (indicated as PO and used in the posttest only). Items assess increased personal development, interpersonal skills, tolerance, social responsibility and applied learning (Eyler & Giles, 1999). The SELEB scale consists of four subscales: practical skills, interpersonal skills, citizenship interest, and personal responsibility. Higher scores indicate a greater importance given to a more broadly focused, applied learning. Students are asked to "indicate how important each of the following are to you in your educational experience" on a seven-point Likert scale from "not at all" to "very much." (Toncar et al., 2006, p. 238) This is indicated below as the PI Pre & PI Post variables ( $H_4$ ). On the posttest instrument, students are also asked to "indicate to what degree working with others in this class provided you with each of the following educational experiences" utilizing the same 12 response options (PO: $H_5$ ).

## RESULTS

Correlation matrices amongst all variables can be found in Appendix C. In order to test for differences between treatment group (short-term travel) and the control group on changes across the semester perceived importance of applied learning, course related knowledge and personality variables, we used analysis of covariance (ANCOVA). This analysis method was used in order to control for initial levels of each variable, as well as to determine if gender had an impact on our results (e.g., does treatment vs. control have different effects based on gender). In addition, we ran separate analyses for men and women to examine any gender differences in the impact of treatment on our outcomes.

### **$H_1$ : Locus of Control (LC)**

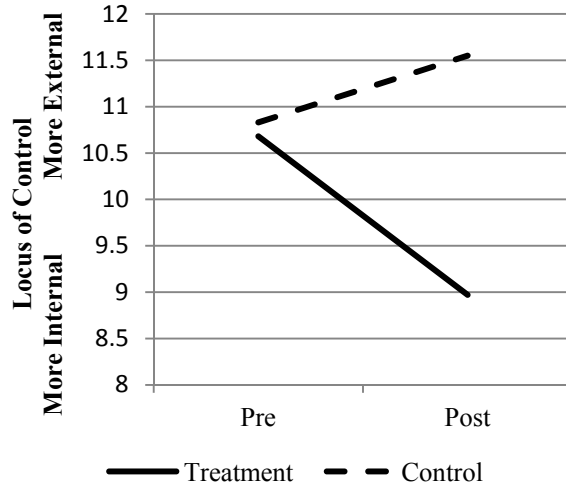
The clearest treatment effect of this study is the significant difference in LC between short-term travel students and the control group ( $F(1,98) = 14.6, p < .01$ ), providing support for the first hypothesis. As can be seen in Table 1 and Figure 1, from nearly identical initial values at the beginning of the term, the treatment group markedly decreases (decrease equates to movement towards a more *internal* LC, which is preferable), while the control group increases insignificantly.



**Table 1: Locus of Control Data for Treatment vs. Control Groups**

	N	Pre	Post	Change
Treatment	34	10.68	8.97	-1.71
Control	69	10.83	11.55	0.72
All		103	10.78	10.70

**Figure 1: Locus of Control Data for Treatment vs. Control Groups**



Further examination of the data (see Table 2 and Figure 2) indicates gender differences in the responses. While there was no effect for gender in the ANCOVA results, when we analyzed the data by gender, we saw some differences. As can be seen in Figure 2, while the direction of change is the same for both women and men in both treatment and control groups (towards more perceived internal control for the treatment group and more perceived external control for the control group) the changes for women were marginal ( $F(1,50) = 3.0, p = .09$ ), but the changes for men were significant ( $F(1,47) = 12.2, p < .01$ ). In other words, women benefited marginally from being in the treatment group while men's LC moved significantly towards internal. Interestingly, using matched pairs t-tests, we found that men in both the treatment and control groups show significant changes, pretest to posttest, but in opposite directions. Women did not show significant pre to posttest differences in either group.

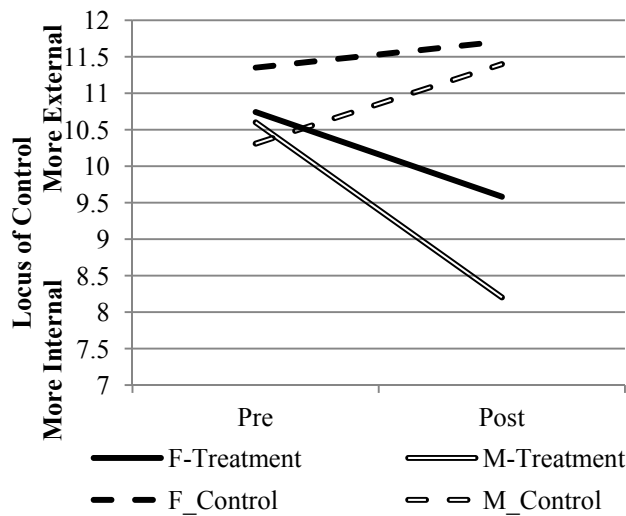
**Table 2: Locus of Control Data by Gender for Treatment and Control Groups**

	N	Pre	Post	Change
F-Treatment	19	10.74	9.58	-1.16
M-Treatment	15	10.60	8.20	-2.40*
F-Control	34	11.35	11.71	0.35
M-Control	35	10.31	11.40	1.09*

\*Matched pairs t-test significant,  $p < .05$

\*\*Matched pairs t-test significant,  $p < .01$

**Figure 2: Locus of Control Data by Gender for Treatment and Control Groups**



**H<sub>2</sub>: Tolerance of Ambiguity (TA)**

While the mean score of all students increased significantly over the term ( $t(102) = 2.24, p < 0.05$ ), the students in the treatment group improved significantly *more* than the control group did ( $F(1,98) = 4.2, p < .05$ ).

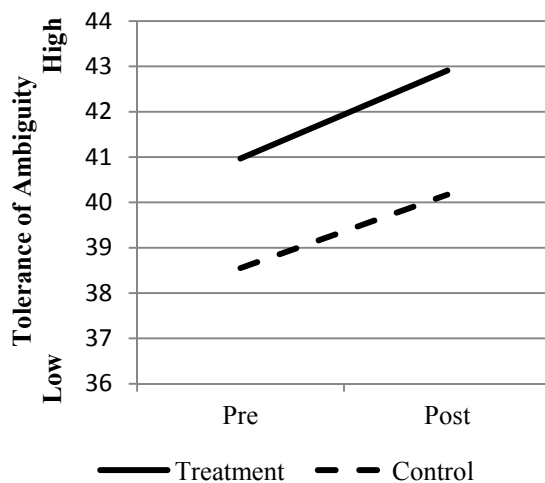
**Table 3: Tolerance of Ambiguity Data for Treatment and Control Groups**

	N	Pre	Post	Change
Treatment	34	40.97	42.91	1.94*
Control	69	38.55	40.17	1.62*
All	103	39.35	41.08	1.73*

\*Matched pairs t-test significant,  $p < .05$

While the effect for gender was marginal in the ANCOVA results ( $p = .08$ ), when we looked at the data by gender, some differences emerged. As can be seen in Figure 4 and Table 4, the men in the control group and women in the treatment group both have near significant changes in the TA ( $p = .075$  and  $.072$ ), while the women in the control group's TA remains nearly unchanged.

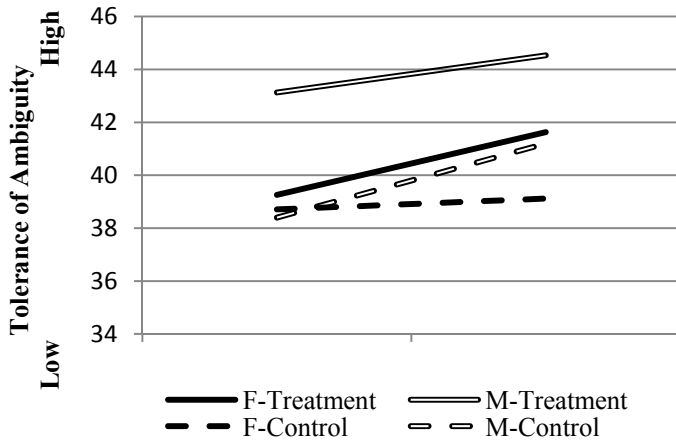
**Figure 3: Tolerance of Ambiguity Data for Treatment and Control Groups**



**Table 4: Tolerance for Ambiguity Data by Gender for Treatment and Control Groups**

	N	Pre	Post	Change
F-Treatment	19	39.26	41.63	2.37
M-Treatment	15	43.13	44.53	1.40
F-Control	34	38.71	39.12	0.41
M-Control	35	38.40	41.20	2.80

**Figure 4: Tolerance for Ambiguity Data by Gender for Treatment and Control Groups**



**H<sub>3</sub>: Self-reported Achievement on OB Learning Objectives (OB-Obj)**

While the entire group’s self-perception of their competency in course learning objectives improved over the semester ( $t(102) = 3.39, p < 0.01$ ), no significant treatment effect was found, nor was there any direct effect for gender. Lower initial self-perception of competency among the treatment group could indicate students with lower self-efficacy about organizational behavior skills are more likely to select a travel-learning experience, but these pretest means are not significantly different.

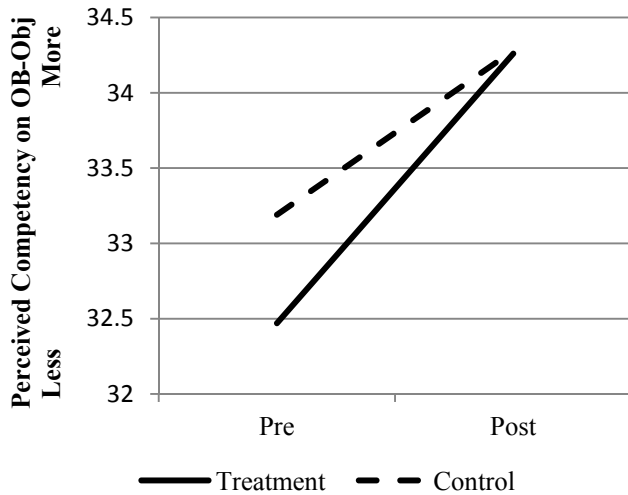
**Table 5: Self-reported Achievement on OB Learning Objectives**

	N	Pre	Post	Change
Treatment	34	32.47	34.26	1.79**
Control	69	33.19	34.28	1.09*
All	103	32.95	34.27	1.32**

\*Matched pairs t-test significant,  $p < .05$

\*\*Matched pairs t-test significant,  $p < .01$

**Figure 5: Perceived Competency on OB Learning Objectives**



There is a marginally significant interaction by gender however ( $F(1,98) = 3.0, p = .09$ ), and sorting the data by gender shows an interesting picture. The treatment group's lower pretest OB-Obj score is driven by the markedly low scores of women in that group. While the differences in the slopes of these lines aren't significant, it does show a familiar pattern of males benefiting more from treatment.

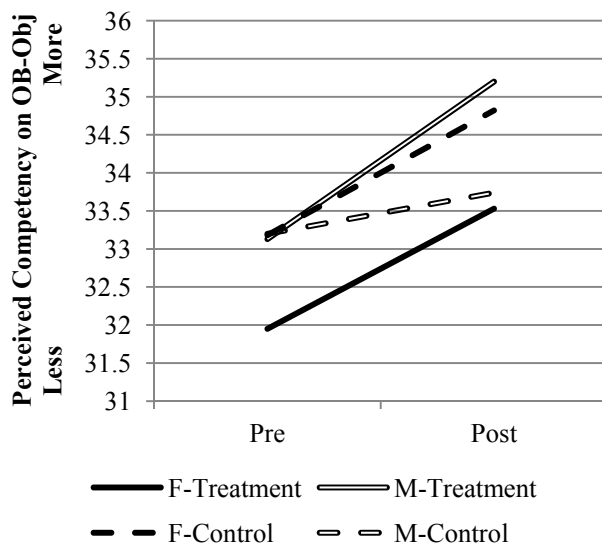
**Table 6: Perceived Competency on OB Learning Objectives by Gender**

	N	Pre	Post	Change
F-Treatment	19	31.95	33.53	1.57
M-Treatment	15	33.13	35.20	2.07**
F-Control	34	33.18	34.82	1.65*
M-Control	35	33.20	33.74	0.54

\*Matched pairs t-test significant,  $p < .05$

\*\*Matched pairs t-test significant,  $p < .01$

**Figure 6: Perceived Competency on OB Learning Objectives by Gender**



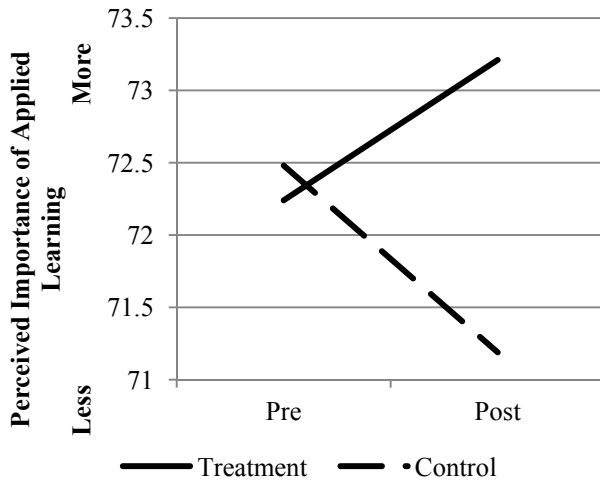
#### H<sub>4</sub>: Perceived Importance of Applied Learning (PI)

While average for all students of the perceived importance of applied learning did not change across the semester, the treatment group did have an impact ( $F(98) = 3.63, p = 0.059$ ). As can be seen in Table 7 and Figure 7, the students started with very similar scores and the treatment group's perception of applied learning's importance increased while the control group's declined, supporting our fourth hypothesis.

**Table 7: Perceived Importance of Applied Learning**

	N	Pre	Post	Change
Treatment	34	72.24	73.21	0.97
Control	69	72.48	71.19	-1.29
All	103	72.40	71.85	-0.54

**Figure 7: Perceived Importance of Applied Learning**



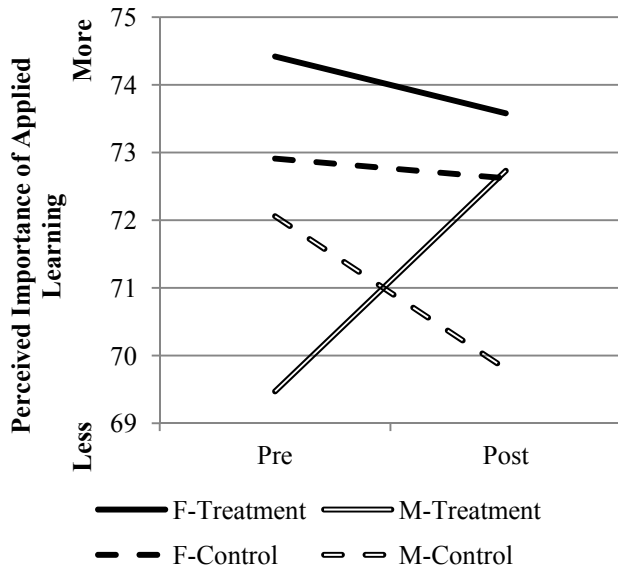
Further, we found a trend in the interaction with gender ( $F(98) = 3.47, p = 0.065$ ). As shown in Table 8 and Figure 8, we found that women's scores decreased slightly across the semester for both groups. Men however, showed marked differences between control and treatment groups, decreasing significantly ( $p = 0.03$ ) in the control group and increasing ( $p = 0.06$ ) in the treatment group. Men appear to benefit from the treatment while women do not, and it is the men driving the overall impact of the treatment.

**Table 8: Perceived Importance of Applied Learning by Gender**

	N	Pre	Post	Change
F-Treatment	19	74.42	73.58	-0.84
M-Treatment	15	69.47	72.73	3.27
F-Control	34	72.91	72.62	-0.29
M-Control	35	72.06	69.80	-2.26*

\*Matched pairs t-test significant,  $p < .05$

**Figure 8: Perceived Importance of Applied Learning by Gender**



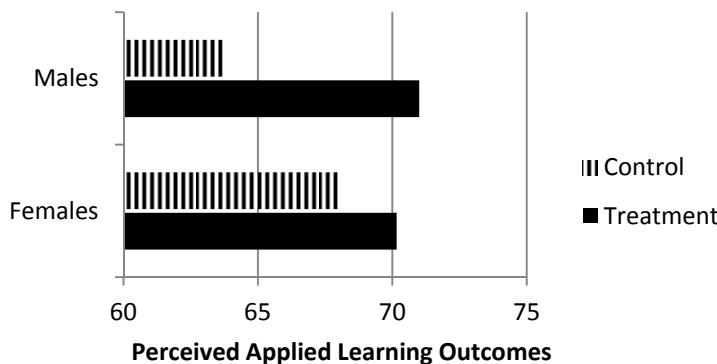
**H<sub>5</sub>: Perceived Applied Learning Outcomes (PO)**

When students were asked at the end of the term the degree to which working together during the course led to various applied learning outcomes, the treatment group significantly outscored the control group ( $p < 0.01$ ) supporting the fifth hypothesis. When gender differences were explored, males within the treatment group perceived applied learning significantly above that of males in the control group ( $p < 0.01$ ) while differences for females were in the same direction but not significant. While we can't infer causality from this data, it is consistent with the theme that males benefit more from treatment than females.

**Table 9: Perceived Applied Learning Outcomes by Gender**

	Females	Males	Mean**	Difference
Treatment	70.16	71.00	70.53	0.84
Control	67.97	63.69	65.80	4.24
Difference**	2.19	7.31		

**Figure 9: Perceived Applied Learning Outcomes by Gender**



## DISCUSSION

The interrelationship between locus of control and tolerance of ambiguity has been reported before (Lee, 2010) and here a lack of significant correlation at the beginning of the semester and significant correlation at the end of the semester for both control and treatment groups could indicate a perception of greater internal control for students with a higher tolerance of ambiguity as a result of the applied learning that is an integral component of the OB course. The correlation coefficient is somewhat larger for the treatment group.

Taking the results from the first and second hypotheses together, short-term travel appears to have a marked impact on locus of control, and it appears that students with a greater tolerance of ambiguity are selecting short-term travel courses thus increasing their internal locus of control, with the greatest impact occurring amongst males.

Results of from the third hypothesis are mixed. The treatment group begins the semester with a lower (but not significantly different) self-perceived competency in OB learning objectives, both groups improve (overall pretest-posttest means are significantly different  $p < 0.01$ ), and both end the semester with essentially the same mean score. Looking at gender differences, males in the treatment group show the greatest improvement but females in the control group also increase significantly. These mixed results indicate the need for additional study of this relationship so the third hypothesis was not supported.

From Figure 7 it would appear that students do not sort themselves into short-term travel courses on the basis of perceived importance of applied learning opportunities, but that, by the end of the term, perceived importance increases in the treatment group and decreases among the control group. However, these posttest changes are not significant and are somewhat misleading. When looking at the results sorted by gender, the impact on females was minimal (and slightly negative) while the mean scores of males in the treatment group increased significantly.

Considering the final hypothesis, the perceptions of students about the degree of applied learning resulting from the course, students appear to appreciate the intensive nature of the short-term travel experience, and this is particularly true for male students.

Overall, the most interesting finding of this study is that short-term travel integrated into the OB course appears to be more effective for male undergraduate students.

## Limitations

This study involved a limited number of students from one institution. Further, students were not randomly assigned to treatment and control groups so self-selection on the basis of increased interest in short-term travel or discomfort with applied learning could not be controlled.

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**APPENDIX A: Author-Created Instrument**

**OB Learning Objectives**

	Strongly <u>Agree</u>			Strongly <u>Disagree</u>	
1. I am able to establish effective work teams.....	5	4	3	2	1
2. I understand the process of leadership in work teams.....	5	4	3	2	1
3. I am able to lead a team effectively.....	5	4	3	2	1
4. I am able to function effectively as a team member.....	5	4	3	2	1
5. I understand how my maturity as a person impacts my ability to perform effectively in organizations.....	5	4	3	2	1
6. I am able to deal well with conflict situations in work teams	5	4	3	2	1
7. I am able to help teams reach decisions with a high degree of agreement in the team.....	5	4	3	2	1
8. When working in teams, I am able to utilize the talents of all to accomplish the task.....	5	4	3	2	1



## APPENDIX B: SELEB Scale Items

1. Applying Knowledge to the “Real World”
2. Workplace Skills
3. Organizational Skills
4. Understanding Cultural and Racial Differences
5. Social Responsibility and Citizenship Skills
6. Ability to Make a Difference in the Community
7. Social Self-Confidence
8. Ability to Assume Personal Responsibility
9. Gaining the Trust of Others
10. Ability to Work with Others
11. Leadership Skills
12. Communication Skills

(Tajes & Ortiz, 2010, p. 238)

## APPENDIX C: Correlations Amongst Variables

### Control Students (n=69)

	Mean	Std Dev	LC Pre	LC Post	TA Pre	TA Post	OB Obj. Pre	OB Obj. Post	PI Pre	PI Post	PO Post
LC Pre	10.78	3.26	0.61	0.69**	0.16	-0.23	-0.28*	-0.05	-0.15	-0.06	-0.17
LC Post	10.70	4.32		0.64	0.23	-0.31**	-0.28*	-0.05	-0.28*	-0.27*	-0.14
TA Pre	39.35	5.10			0.64	-0.45**	-0.14	0.01	-0.10	-0.26*	-0.01
TA Post	41.08	6.48				0.56	0.40**	0.27*	0.26*	0.25*	0.30*
OB Obj. Pre	32.95	3.86					0.53	0.45**	0.37**	0.28*	0.40**
OB Obj. Post	34.27	3.49						0.51	0.28*	0.44***	0.47**
PI Pre	72.48	7.99							0.49	0.62**	0.40**
PI Post	71.19	7.56								0.44	0.48**
PO Post	65.80	10.61									0.43

Note: \*  $p < .05$ ; \*\*  $p < .01$ ; Cronbach Alpha coefficients are in diagonal of matrix.

LC = locus of control; TA = tolerance of ambiguity; OB Obj = perceived competency in organizational behavior; PI = perceived importance of applied learning; PO = perception that applied learning occurred

### Short-term Travel Students (n=34)

	Mean	Std Dev	LC Pre	LC Post	TA Pre	TA Post	OB Obj. Pre	OB Obj. Post	PI Pre	PI Post	PO Post
LC Pre	10.67	3.51	0.71	0.62**	-0.12	-0.27	-0.14	-0.34	-0.17	-0.15	0.15
LC Post	8.97	4.38		0.74	-0.23	-0.40*	-0.18	-0.27	-0.23	-0.25	-0.02
TA Pre	40.97	6.39			0.60	0.64**	0.42*	0.44**	0.24	0.29	0.43*
TA Post	42.91	6.98				0.65	0.20	0.31	0.31	0.29	0.11
OB Obj. Pre	32.47	3.20					0.66	0.37*	0.15	0.35*	0.25
OB Obj. Post	34.26	3.12						0.64	0.69**	0.55**	0.48**
PI Pre	72.24	7.53							0.61	0.69**	0.41*
PI Post	73.21	7.11								0.57	0.56**
PO Post	70.53	6.90									0.59

Note: \*  $p < .05$ ; \*\*  $p < .01$ ; Cronbach Alpha coefficients are in diagonal of matrix.

LC = locus of control; TA = tolerance of ambiguity; OB Obj = perceived competency in organizational behavior; PI = perceived importance of applied learning; PO = perception that applied learning occurred

# **Energize Teaching: Get Back to Basics and Get Real**

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## **ABSTRACT**

The types of assignment that faculty members employ can make a significant difference in the engagement of students and the amount of learning that takes place. A brief review of how students learn, and what we want them to learn is presented, and an argument to move towards service learning is made. A 2X2 matrix is presented that incorporates nature of assignment (abstract to real) and primary skill orientation required of students (cognitive to experiential). The quadrants are evaluated for alignment to learning styles and level of learning according to Bloom's Taxonomy, and examples of assignments are provided for each quadrant. The paper concludes with benefits of service learning to student, instructor, institution and society.

**Keywords:** Student engagement, community engagement, experiential learning, service learning, energized teaching, innovative teaching

## **INTRODUCTION**

At a seminar on learning assessment, facilitator Dr. Douglas Eder (2007) conveyed a story about his son. The younger Eder had written a proposal as part of a job interview and asked the elder Eder to review it and provide comment. After reading, Dr. Eder thought that the paper was an extraordinary piece of writing, well organized, concise yet cogent, elegant in design and execution. Dr. Eder exclaimed, "This is brilliant! Who wrote it for you?" The younger Eder insisted he had written it entirely by himself. Dr. Eder replied, "My son, I know you, I know how you write, I've read your writing for years, and your writing is nothing like this. How could you so quickly make such significant improvement in your writing?" The younger Eder simply said, "Dad, this is real." The point is, as Dr. Eder suggested, that this paper was for a job, not a class assignment, hence, more "real" than any class assignment could ever be, and thus, worthy of greater effort and attention to detail.

This story represents a crystallizing moment, on many levels. It captured much of what Dr. Eder shared with the conference attendees about learning goals and assessment. It stimulated immediate personal reflection on performance motivation for different career activities, at different stages in life. It also created empathy for the student perspective, and what we often do as educators to students, which is often perceived by students as many leaps removed from reality. After a brief moment of inventorying assignments given over the years, there was a modicum of satisfaction in knowing that a few assignments were truly inspired which created "real" learning situations for students. There was also considerable cringing over having fallen lazily into many of the standard conventions of requiring students to write essays, answer questions at the end of a chapter, do a certain set of problems or exercises, and other assignments *ad nauseum*. In contemplation of the uninspired work that had been submitted by so many students, which for the professor resulted in hours of tortuous grading, and born of a longing to delight in exceptional student writing, the question formed, "how do we make assignments more "real" to students?"

While the query seems simple enough, developing assignments that can be justified using well grounded theoretical constructs can be a challenge. First we must identify how students best learn and identify the realm of what may be construed as "real" from a student perspective. Then, we must be cognizant of identifying learning objectives, such as gaining employable skills, teamwork, leadership, communication, critical thinking, or problem solving. We should also consider alignment of learning and teaching styles. Finally, we need to realize that real growth in teaching will not come from doing what we have always done, but instead from trying new things, some of which may not work out as planned.

## **BASICS 101: HOW STUDENTS LEARN**

Understanding the way students learn can be very beneficial in designing assignments that are perceived as being more "real." John Dewey (1938) argues convincingly that students learn in two primary ways: through cognitive

means, and through experiential means. His position is that both are needed, and one reinforces the other to ensure that the student understands and has internalized the lessons. In further exploration of how students learn, Neil Fleming (2009) offers specific ways of processing information to internalize lessons. The Neil Fleming learning styles are:

- Visual – learn best by seeing, imagining (about 30% of population)
- Auditory – learn best by listening, speaking (about 25% of population)
- Kinesthetic – learn best by doing (about 15% of population)
- Remaining 30% are mixed learning styles

Cognitive learning activities are most aligned to visual learning with some alignment to auditory, and experiential activities are most aligned to kinesthetic learning styles, but could also be partially aligned to auditory or mixed styles. In order to maximize learning outcomes, it is imperative that teaching style be well matched to dominant learning style (Wilson, 2012).

Our first “Basics 101” conclusion is that realistic learning experiences should include both cognitive and experiential components. Learning experiences should also include a variety of ways in which learning may be processed (visual, auditory, kinesthetic, or mixed) to ensure that the instructional approach matches the variety of learning styles that the instructor is likely to encounter.

The next “Basics 101” lesson for us is that we, as educators, must recognize learning as a sequential process. There are various ways of describing the process, such as approaches to topical treatment that introduce, reinforce and master. One of the seminal works on the basics of cognitive learning is Bloom’s (1956) often referenced Taxonomy of Higher Thinking Skills.

#### **Bloom’s Taxonomy of Higher Thinking Skills**

- Knowledge – Remembering previously learned material
- Comprehension – Ability to grasp the meaning of the material
- Application – Use learned material in new and concrete situations
- Analysis – Ability to break down material into component parts
- Synthesis – Put parts together to form a new whole
- Evaluation – Ability to judge the value of material for a given purpose

Our second “Basics 101” conclusion is that learning is best structured progressively. Combining Dewey’s, Fleming’s and Bloom’s frameworks, we can surmise that there is a need for cognitive and experiential materials to be introduced in multiple formats, nearly simultaneously, and in progressive ways where new learning builds on previous learning.

#### **BASICS 102: WHAT STUDENTS LEARN**

We now shift our focus from “how” students learn (process) to “what” we expect students to learn (content), or the expected learning outcomes. Student performance outcomes described as learning goals are rightfully driving curriculum changes, and many learning goals have foundations in standards promoted by accrediting organizations, such as the Association for the Advancement of Collegiate Schools of Business (AACSB, 2013), or the North Central Association Higher Learning Commission (2013). Newer standards adopted by certain accrediting bodies use terms such as “innovation”, “impact” and “engagement.” These terms are open to a certain amount of interpretation according to the mission of each institution, and may be applied differently. Moreover, because of the new standards, institutions are increasingly interested in approaches that encompass the concepts of Community Engagement, Experiential Learning, and Service Learning. All three terms are reflective of innovation in teaching, engaging of students, and have potential impact, at least on the learner. While these terms may sound as if they could be similar in application, and they are sometimes used interchangeably, each can be defined as being distinctly different from the others.

## REALISM IN LEARNING ASSIGNMENTS – EXPLORING COMMUNITY ENGAGEMENT, EXPERIENTIAL LEARNING AND SERVICE LEARNING

Community Engagement can reflect a range of activities in which students participate in service activities in their respective community (Miller and Billings, 2012). A simple example of Community Engagement is represented by a student working in a soup kitchen that serves the local indigent population. From a learning objective perspective, these activities can be problematic because learning objectives are absent, or not defined *a priori*. Therefore, learning may or may not occur, although service to the community is undeniable, and the student certainly perceives the “realness” of this activity.

Experiential learning could place the student *in situ*, or in a simulated environment, such as the computer simulations described by Beckem and Watkins (2012). While the student may be placed in a soup kitchen, alternatively, a serving line could be contrived in a laboratory setting, simulated in a computer program, or based on a case of the actual organization. This type of learning situation is grounded in specific learning objectives, which requires the student to consider circumstances or manipulate a specific set of variables, and depending on the level of learning expected, observe, report, experiment, explain results, synthesize with other parts of an operation, or evaluate a system. Such learning objectives are clearly aligned to experiential learning, and the assignment can be adjusted to reflect the stage in the learning process. While a certain amount of “realness” is captured, if the environment is anything but *in situ*, it is, nonetheless, contrived, potentially reducing the sense of “realness” for the student learner.

Service Learning is an effective combination of both Community Engagement and Experiential Learning. As in Community Engagement, students are involved in service activities that can benefit the community. However, the key differences are that Service Learning activities are tied to course or curricular objectives, there is a reflective component for the student to analyze his or her involvement and role in the process, and how concepts apply to the service function (Stringfellow and Edmonds-Behrend, 2013), all of which capture the greatest benefits of Experiential Learning. Expanding on the previous example, a student may work in the soup kitchen, but the assigned activity is related to operations management. The student may be asked to explain how forecasting is applied in setting capacity, apply queuing analysis, determine where bottlenecks in the process occurred, offer an explanation of why they occurred, and how to solve any problems experienced by servers or uses of the service line. The assignment applies to a real problem in a real organization where the student encounters a real experience. The student’s recommendations ultimately affect real people with whom the student has worked. The realness of service learning creates powerful learning assignments because the circumstances offer immediate relevance to the student.

The “Basics 102” lesson is that learning objectives grounded in real life experiences which combine cognitive, experiential, visual, auditory, and kinesthetic learning components offer the most powerful learning opportunities to students, and are naturally aligned to a variety of learning styles. Moreover, assignments can be structured by the instructor to reflect progressive mastery according to Bloom’s Taxonomy.

### THE “ASSIGNMENT TYPE MATRIX” PLANNING AID

If a primary objective of learning is to engage the student, obviously, the more realistic the experience, as opposed to an abstract exercise, the more engaged the student is likely to be. Moreover, relevance of an activity to a student’s orientation is also likely to enhance engagement. So realism and relevance are key components to creating assignments. Assignments that provide experiential learning opportunities can be enhanced by *a priori* or *post hoc* cognitive evaluation. Learning objectives should also be aligned to the academic and experiential preparation of the student. Bloom’s Taxonomy provides a useful paradigm to apply to the expectations of student readiness, and to consider in the design of assignments to prepare students for the next level of development.

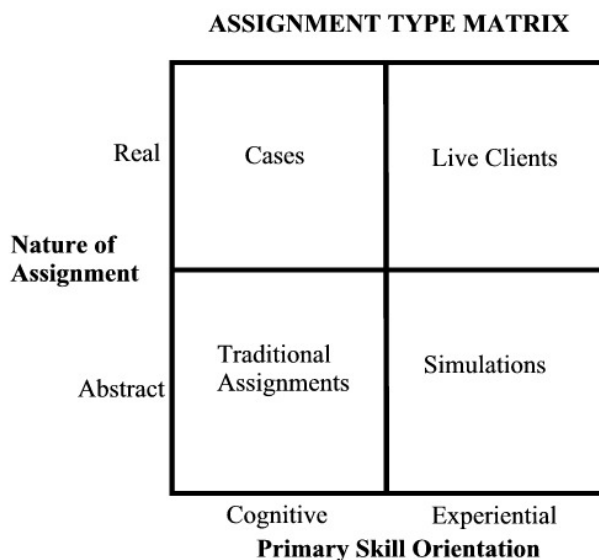
We propose a 2X2 Assignment Type Matrix to aid planning of assignments to improve student engagement through realism and experiential activities whenever appropriate. There are two continua that create the axes of this matrix. The first continuum is the nature of the primary skill orientation required by the student. This continuum is anchored by the concepts of Cognitive, which are activities that are predominantly cerebral, and Experiential, which are activities that are predominantly tactile, involve manipulation, or some combination of physical and intellectual interaction by the subject. The second continuum is anchored by the concepts of Abstract, where representations are

substituted for actual things, to Real, where actual items or things are used *in situ*. This Assignment Type Matrix is presented in DIAGRAM 1.

Traditional assignments tend to be cognitive and abstract. These are likely best for visual learners, and are often placed in the lower half of Bloom’s taxonomy. When we require students to take a test, work a problem, or answer questions at the end of a chapter, the context is usually the text, or some concept we expect them to understand. The relevance to their personal reality is very tenuous, and the exercise is very cerebral. The analogy is that this type of assignment to learning is like calisthenics is to exercise. Both can be useful, but they can be tedious chores, which reduces motivation and attention span.

Simulations are experiential and abstract. Most simulations are a distilled version of reality, and by definition are abstract in their representation, although there are often attempts to make the simulations relevant to the users. There is great value in simulations in that users can manipulate variables, and in an iterative process, determine cause and effect relationships within the parameters of the simulation. This type of activity is well suited to kinesthetic learners, and typically occupies the middle range of Bloom’s Taxonomy. Other activities in this quadrant could include role playing. In debriefing sessions of simulations students often report that participating in simulations is fun and interesting, and it can help them understand concepts presented in traditional ways.

**Diagram 1: Assignment Type Matrix**



Cases are cognitive and real. Many business cases focus on real people in real organizations and frequently there is richness of detail and a wealth of supporting material. But the process of case evaluation is essentially a cognitive exercise. Recommendations may be made, but they are typically not implemented, so students do not get to see the ultimate quality of their recommendations in action. However, cases can foster in students an ongoing interest in the organization, however passive that interest may be. Because of evaluation, presentation, and discussions surrounding cases, they are likely best for visual and auditory learning styles, and can occupy the upper half of Bloom’s Taxonomy. Other activities in this quadrant can include observing a client and preparing a report. In debriefing sessions of cases, students find cases generally interesting, some more than others. While the cases can help them understand and reinforce concepts learned in traditional ways, there is also a sense that cases can be an extension of “read the text, answer the questions at the end of a chapter, and write an essay.”

Live clients are experiential and real. These are most likely to fit into the “Service Learning” category. These assignments require face-to-face interaction. Live clients encounter real issues that can be addressed and manipulated in real time. Students have a sense that what they are doing truly matters, and that their effort is directly related to the potential success of the client. An extension of this activity would be to require students to develop a case based on the client’s situation. Assignments in this quadrant can be beneficial to all learning styles, and occupy the upper third of Bloom’s Taxonomy. In reflective debriefing sessions students have said that these

activities were among the most interesting of their college career, they believed they learned and grew more as individuals through the course than other courses, and that they worked harder in these courses than other courses. When asked why they worked so hard, they invariably reply, "Because it is 'real.'"

### **BENEFITS OF SERVICE LEARNING USING LIVE CLIENTS**

There are multiple benefits to using live clients in service learning situations. These benefits accrue to the students, faculty members, the institution, and the community.

*Students* – real world experience, building networks, job leads, engagement in learning, better performance. Learning benefits, in particular are supported by a study of community college students, where McClenney and Marti (2006) report that "one of the most consistent predictors of persistence, self reported learning gains, and GPA is 'Active and Collaborative Learning,' which includes 'participation in a community-based project as part of a regular course' and other activities commonly part of high-quality service-learning."

*Faculty* – more involved and engaged students, more interaction with students, more interaction with peers, more rewarding teaching experience, and richer experiences to use in teaching performance reviews.

*Institution* – higher retention, great commitment of students to educational institutions, greater community integration and acceptance

*Community* –potentially reduced brain drain, i.e., students choosing to stay in a community instead of leaving after graduation, economic development facilitated, local problems addressed, all with few or no taxpayer dollars used.

### **CONCLUSIONS**

If one has limited experience with experiential and service learning, a whole new world in teaching is waiting. If you are already engaged in experiential and service learning, you can gain additional benefit by seeking new activities and incorporating new classroom techniques. Consider using the "Assignment Type Matrix" to evaluate appropriateness of assignments on the dimensions of cognitive to experiential, and abstract to real. The quadrant definitions can also aid in determining if the assignment is properly aligned to the educational skill development of your students. Making the learning experience "real" for students can involve real work for you, the educator, but the real benefits to you, the students, the institution, and your community can be priceless.

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# Manuscript Guidelines, Submission and Review Process

## TOPIC AREAS (BUT NOT LIMITED TO THESE):

- Course design – current courses, new courses, new trends in course topics
- Course management – successful policies for attendance, homework, academic honesty ...
- Class material
  - o Description and use of new cases or material
  - o Lecture notes, particularly new and emerging topics not covered effectively in textbooks
  - o Innovative class activities and action-learning – games, active learning, problem based
- Major or emphasis area program design that is new or innovative.
- Assessment – all aspects including AACSB and university level assessment strategies and programs
- Integration of programs or courses with other academic disciplines
- Internship programs
- Business partnerships
- Successful student job placement strategies
- Any topic that relates to higher education business education.

## SUBMISSION AND REVIEW PROCESS:

### Copyright

- Manuscripts submitted for publication should be original contributions and should not be under consideration with another journal.
- Authors submitting a manuscript for publication warrant that the work is not an infringement of any existing copyright, infringement of proprietary right, invasion of privacy, or libel and will indemnify, defend, and hold Elm Street Press harmless from any damages, expenses, and costs against any breach of such warranty.

### Prepare your manuscript

- See the Style Guideline page for specific instructions.
- Articles must make a contribution to business education innovation.
- Manuscripts should be limited to 8 to 10 pages or less, although longer will be accepted if warranted.
- Articles can be either regular research papers, or shorter notes that succinctly describe innovative classroom teaching methods or activities.
- Manuscripts should be completely finished documents ready for publication if accepted.
- Manuscripts must be in standard acceptable English grammatical construction.
- Manuscripts should be in MS Office Word format. Word 2007 files are acceptable, as are earlier versions of Word. If you are using a new version of Word after Word 2007, save in Word 2007 format.

### Submit your manuscript

- Manuscripts may not have been published previously or be under review with another journal.
- Submit the manuscript attached to an email to **submit@beijournal.com**
- We will respond that we have received the manuscript.
- Article submissions can be made at any time.
- Submission deadlines: September 15 for December issue, March 15 for June issue.



### **Manuscript review**

- The editor and reviewers will review your submission to determine if 1) the content makes a contribution to innovative business education, 2) is of the proper page length, 3) is written in proper grammatical English, and 4) is formatted ready for publication.
- Submissions not meeting any of these standards will be returned. You are invited to make revisions and resubmit.
- If the submission meets the standards, the manuscript will be sent to two reviewers who will read, evaluate and comment on your submission.
- The editor will evaluate the reviews and make the final decision. There are 3 possible outcomes:
  - Accept as is.
  - Accept with minor revisions.
  - Not accepted.
- Reviews will be returned promptly. Our commitment is to have a decision to you in less than two months.
- If your paper is not accepted, the evaluation may contain comments from reviewers. You are invited to rewrite and submit again.

### **If your paper is accepted**

- Minor revision suggestions will be transmitted back to you.
- Revise and send back as quickly as possible to meet printer deadlines.
- Upon final acceptance, we will bill you publication fees. See [www.beijournal.com](http://www.beijournal.com) for latest per page fees. Sole author fees are discounted.
- The fees include all costs of mailing a copy of the issue to each author via standard postal ground.
- Delivery to locations outside the continental US will cost an additional \$10 per author for 5 day delivery.
- Faster delivery methods are available for US and international delivery. Contact the editor for a specific pricing.
- All publication fees should be remitted within 10 business days of acceptance, if possible.
- If you decide not to publish your paper with BEI Journal after submitting payment, we will refund publication fees less \$200 to cover costs of review and processing.
- Cancellation cannot occur after the paper has been formatted into the final printer's file.

# Manuscript Style Guide and Example

An example is providing following these instructions.

This style guide represents style guidelines in effect for future issues.

Authors are responsible for checking for correct grammar, construction and spelling. Authors are also responsible for formatting pictures, tables, and figures such that a pdf black and white file sent to the publisher will reproduce in a readable manner.

## General Setup:

- All fonts: Times New Roman. 10 point for text. Other sizes as noted below
- Margins: 1 inch on all sides of 8½x11 inch paper size.
- No headers or footers.
- Avoid footnotes unless absolutely necessary.
- Page numbering bottom centered.
- No section breaks in the paper.
- No color, including url's. Format to black. No color in tables or figures. Use shading if necessary.
- All pages must be portrait orientation. Tables and figures in landscape orientations should be reformatted into portrait orientation.
- All paragraphs should be justified left and right, single spaced, in 10 point Times font, no indent on first line, 1 line between each heading and paragraph.
- One line between each paragraph.

## Titles, Authors, and Headings:

- **Title centered 14 point bold.** One line between title and author's name.
- Authors: centered, 12 point. Name, affiliation, state, country.
- One line space to **ABSTRACT** (title 10 point, bold, all capitalized, aligned left; text of abstract 10 point, no bold)
- After **ABSTRACT**, one line space, then **Keywords**. Followed by one line space to first major heading.
- **HEADINGS, MAJOR**, 10 point, bold, all capitalized, aligned left.  
The specific headlines will be based on the content of the paper, but major sections should at a minimum include an abstract, keywords, introduction, conclusion, and references.
- **Sub-headings:** 10 point, bold, first letter capitalized, no line to following paragraph. Align left.
- *Third level headings: Italic*, 10 point, first letter capitalized, no line to following paragraph. Align left.
- **Keywords:** heading: 10 point, bold, first letter capitalized, no line to following paragraph. Align left.  
Your list of keywords in 10 point, no bold.

## Tables, Figures and Graphs:

- All fonts 10 point.
- Numbered consecutively within each category. Table 1, Figure 1 etc.
- Title: 10 point, bold, left justify title, one space, then the table, figure, etc.
- Example: **Table 1: Statistical Analysis**

## References:

- APA format when citing in the text. For example (Smith, 2009).
- References section: 8 point font, first line left margin, continuation lines 0.25 inch indent. Justify left and right. No line spacing between references. List alphabetically by first author.
- Specific references: Last name, First initial, middle initial (and additional authors same style) (year of publication in parentheses). Title of article. *Journal or source in italics*. Volume and issue, page number range.
- Example: Clon, E. and Johanson, E. (2006). Sloppy Writing and Performance in Principles of Economics. *Educational Economics*. V. 14, No. 2, pp 211-233.
- For books: last name, first initial, middle initial (and additional authors same style) (year of publication in parentheses). *Title of book in italics*. Publisher information.
- Example: Houghton, P.M, and Houghton, T.J. (2009). *APA: The Easy Way!* Flint, MI: Baker College.

*Example (note that this example represents a change from previous style guides )*  
**Evidence to Support Sloppy Writing Leads to Sloppy Thinking**

Peter J. Billington, Colorado State University - Pueblo, Colorado, USA (12 point)  
Terri Dactil, High Plains University, Alberta, Canada

**ABSTRACT (10 point, bold, all capitalized, left justified)**

(text: 10 point Times font, no indent, justified, single space, 150 words maximum for the abstract)

The classic phrase “sloppy writing leads to sloppy thinking” has been used by many to make writers develop structured and clear writing. However, although many people do believe this phrase, no one has yet been able to prove that, in fact, sloppy writing leads to sloppy thinking. In this paper, we study the causal relationship between sloppy writing and sloppy thinking.

**Keywords:** sloppy writing, sloppy thinking (10 point, bold title, first letter capitalized, left justified).

**INTRODUCTION (10 point, bold, all capitalized, left justified).**

The classic phrase “sloppy writing leads to sloppy thinking” has been used by many to make writers develop structured and clear writing. However, since many people do believe this phrase, no one has yet been able to prove that in fact, sloppy writing leads to sloppy thinking. Is it possible that sloppy writing is done, even with good thinking. Or perhaps excellent writing is developed, even with sloppy thinking.

In this paper, we study the writing of 200 students that attempts to test the theory that sloppy writing leads to sloppy thinking.

**PREVIOUS RESEARCH**

The original phrase came into wide use around 2005 (Clon, 2006), who observed sloppy writing in economics classes. Sloppy writing was observed in other economics classes (Druden and Ellias, 2003).

**RESEARCH DESIGN**

Two hundred students in two business statistics sections during one semester were given assignments to write reports on statistical sampling results. The papers were graded on a “sloppiness” factor using...

**Data Collection** (Sub-heading, bold but not all caps, 10 point, aligned left, bold, no line after to paragraph)

The two hundred students were asked to write 2 short papers during the semester...

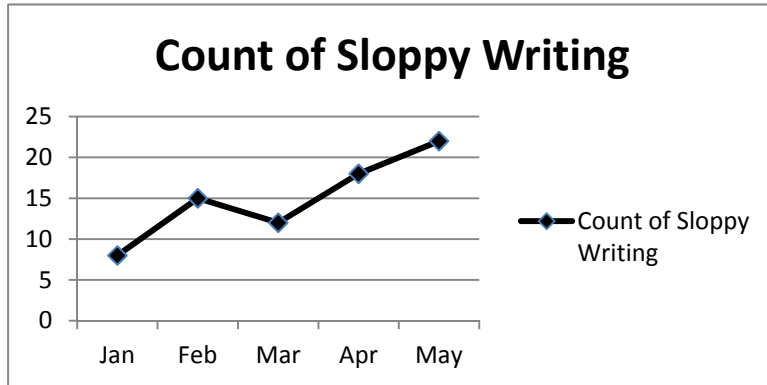
**Data Analysis**(Sub-heading, bold but not all caps, 10 point, aligned left, bold, no line after to paragraph)

The two hundred students were asked to write 2 short papers during the semester...

**DISCUSSION**

The resulting statistical analysis shows a significant correlation between sloppy writing and sloppy thinking. As noted below in Figure 1, the amount of sloppy writing increases over the course of the spring semester.

**Figure 1: Sloppy Writing During the Semester**



The count results were compiled and shown in Table 1 below.

**Table 1: Counts of Good and Sloppy Writing and Thinking (bold, 1 line after to table, left justify)**

	<b>Good Thinking</b>	<b>Sloppy Thinking</b>
<b>Good Writing</b>	5	22
<b>Sloppy Writing</b>	21	36

\*-Indicates significance at the 5% level)

As Table 1 shows conclusively, there is not much good writing nor good thinking going on.

## CONCLUSIONS

The statistical analysis shows that there is a strong relation between sloppy writing and sloppy thinking, however, it is not clear which causes the other...

Future research will try to determine causality.

## REFERENCES (title 10 point, all caps, bold, align left, one line to first reference)

**(1 line spacing)** (All references 8 point, indent second line 0.25 inch, justify left and right)

- Clon, E. (2006). Sloppy Writing and Performance in Principles of Economics. *Educational Economics*. V. 14, No. 2, pp 211-233.  
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(short bio section optional, can run longer than these examples; removed before sent to reviewers)

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