

Increasing Student Responsibility And Active Learning In An Undergraduate Capstone Finance Course

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ABSTRACT

This paper focuses on the effectiveness of factors in designing and delivering a complex, capstone course in an undergraduate major in finance. The course uses an instructional delivery system that is contrasted to the standard lecture format and has a broader set of objectives than is usually specified for a finance course. An objective of the instructional design of the course is to harness student responsibility while making them more active participants in the delivery of the content. The goal is to equip them to solve the typical non-structured problems they will deal with in their professional careers.

The effect of these factors is measured by analyzing this course compared to all other finance courses taken. The outcomes of this paper show that this method is superior to the standard lecture method across a variety of scales. This provides insight into the future development of this method for this type of course, as well as ideas for developing other advanced instructional delivery systems for similar complex courses.

Keywords: Active Learning; Student Responsibility

INTRODUCTION

Most introductory finance courses focus on the elemental levels of learning by Bloom's taxonomy. Definitions, basic relationships, and algorithms (from simple to complex) to estimate returns, risk, models, and relationships form the basic content. As courses become more advanced, scenarios, forecasting, and case studies are introduced to develop students' advanced problem-solving skills. These methods were very useful until the advent of the Internet and the development of massive databases widely available to all. This gigantic expansion of information and materials has altered the role of the faculty member as the source of information and learning because it has become possible for students to accomplish learning without a textbook, classes, or a professor. Entire courses and degree programs are now available via the Internet in which students may never meet or talk with a faculty member but simply complete a series of guided lessons to a specified degree of proficiency.

It is suggested here that the next logical step in the evolution of curricula for advanced students should go beyond the skills required for case studies and other such exercises. Students should be required to learn where to acquire basic information from the Internet and other sources, how to evaluate the accuracy and applicability of that information, how to synthesize that information into a unified whole, and how to apply it to investigate a given issue, problem, institution, or relationship. Their ability to do this is demonstrated by conducting original research under the direction of qualified faculty and having to present their results to an informed peer group.

The instructional design of a delivery system must require students to be active participants in the delivery and preparation of the learning process and be individually responsible for learning course content. We have provided a framework for such a course and will demonstrate its success.

LITERATURE REVIEW

Goldstein and Fernald (1993) reviewed numerous articles that define capstone courses. Most agree that capstone courses should be a culminating experience that deepens students' understanding, appreciation, and application of their major. The course should focus less on content and more on integrating knowledge regarding their major to prepare for life after college. This general definition leads from a teaching paradigm to a learning paradigm. Barr and Tagg (1995) described the learning paradigm as creating "environments and experiences that bring students to discover and construct knowledge themselves, to make students members of communities of learners that make discoveries and solve problems" (p. 16). This shift requires students to be the chief agent in the process of learning. This changes the perspective of the instructor being responsible for student learning through lectures and solving basic problems to the student being responsible for his or her own learning. Instead, students are being held responsible for their learning and should take on that responsibility. Many studies have found that students do not read assignments before coming to class (McDougall & Granby, 1997; Trout, 1997). Furthermore, professors display several behaviors that directly contribute to the lack of student accountability. Grade inflation teaches students that performance may not correlate with grades (Gaulty & Cann, 2001; Delucci & Smith, 1997); indeed, Seligman (2002) noted that 91% of seniors graduated from Harvard with honors. Student evaluations have repeatedly shown that student learning has little correlation with student evaluations (Heck et al., 2002; Eckrich, 1990) Faculty feel pressured to allow attendance to slip, assignments to be turned in late, and extra credit to be completed because such leeway impacts student evaluations (Greenwld & Gilmore, 1997; Clayton, 1998). McKeachie (1997) found students may not have accurate expectations. Hassel and Lourey (2005) conducted a survey in which they confirmed that many students really did not understand what is expected of them and what the consequences were for not meeting those expectations.

Student Responsibility

A long-standing question in higher education is, "Who should be responsible for student learning? To what extent is the professor obligated for learning? Or, is it up to the student to be responsible for his/her own learning?" Previous surveys have shown that many faculty members believe the responsibility for learning rests solely on the student, whereas many students advocate it is the responsibility of the faculty member. Research studies have adopted the premise that instructor behavior is (or should be) a factor that influences student learning; not surprisingly, some have shown this to be a significant factor. Yet, students need to "learn how to learn" to transition successfully into the business world (McKenzie, & Swords, 2000). In a study examining student responsibility for learning, Bacon (1993) identified six categories that students viewed as being their responsibilities:

- Do the work
- Obey the rules
- Pay attention
- Learn or study
- Try or make an effort
- Understand that responsibility is something that is given or taken

Bacon (1993) concluded that:

- Students did not perceive school as only a place for learning.
- They saw school as neither challenging nor as a place that allowed them enough control to make the work challenging.
- Although students said they felt responsible for learning, they were actually just "being held responsible" rather than "being responsible."

There is a significant difference between *being responsible* and *being held responsible*. "Students who are being responsible will do the work without constant reminders or prodding. Students who are being held responsible

will do the work only when someone is somehow forcing them to do so.” (Bacon, 1993, 1991) Others who have examined aspects of being responsible include Maslow (1976), Rogers (1983), and Brown (1975).

Furthermore, being responsible for one’s professional work is a highly desirable characteristic of students exiting an undergraduate program in a specialized field. Their on-the-job performance will affect not only their reputation but also the reputation of the program they have completed.

Active Learning

Over the past 30 years, research has blossomed on the value of students being engaged in active, rather than passive, learning. Passive learning is sitting in a classroom, taking notes, reading assigned material, and passing examinations on the content covered. All information is put directly before the student and the student is expected to soak it up and repeat it later. Active learning, in contrast, is where the student is involved in generating content and ideas, sharing his/her learning with others, and drawing inferences and conclusions beyond that which were presented during the course. Active learning tended to produce higher achievement on examinations, greater involvement with the material, greater interest in the content, and a greater ability to extend the learning to situations that are similar, but not identical, to those covered in class. Shellman and Turan (2006) and Brock and Cameron (1999) argued that active learning is necessary for students to understand abstract concepts more effectively. Smith and Boyer (1996) suggested that active learning allows students to examine the motivations, behavioral constraints, and resources and interactions among various institutional participants. Also, most students tended to enjoy the content more as it offered more choice and required action (Poplin & Weeves, 1992). Indeed, the case method and case courses were developed as a technique to get students to be more active learners. In some business schools (notably Harvard and Darden), this has become the predominant instructional methodology used, almost to the exclusion of all other methods. Saunders (2001) described the “modal” instructor as “chalk and talk” with problem-solving and that few instructors discussed current business news. He concluded that although many other disciplines had shifted to a “learning paradigm” (Barr & Tagg, 1995), the field of finance has not made that change.

Factors Affecting Curricular Development

Three primary forces guide the development of curricula, in general, and the content and method of teaching a class, in particular. These factors are described below. First, the momentum of historical precedent tends to carry over from one term to another and from one year to another so that the comfortable way of teaching a course is the way the course has been taught over time. Statistics are updated, teaching materials are revised, and yet the style of teaching, content, and objectives of the course remain basically the same year after year. Second, a growing body of literature on teaching over the past 30 years indicates that the more actively students participate in the class, the better both the subjective and cognitive achievement. That is, the more students are allowed/encouraged to be active (rather than passive) participants, the more they like the course and the more content or factual material they absorb. Indeed, it has been said that to teach is to learn for the first time. The closer the students are to being “teachers” within the course, the more full-bodied the learning will be. Goldstein and Fernald (2009) stated that capstone courses should have five components, four of which are applicable to finance: 1) student-centered learning, 2) affective and experiential learning, 3) collaborative learning, and 4) writing assignments that focus on personal and professional growth.

The external environment also influences and sometimes radically alters both course content and the teaching methods used. For example, surveys of senior financial executives have found that they much more highly value the ability of their financial analysts to prepare and present reports of their findings now than they did in the past when simply doing the financial analysis was sufficient. At the same time, the growth of the Internet has opened many more avenues to financial data as well as surrounding circumstances, such that all students potentially have the ability to learn all relevant facts from a public and widely available resource. This means that the professor is no longer the sole source of information and knowledge and simultaneously means that the professor cannot possibly know all of the information needed to solve complex problems with certainty. In short, too much information is updated continuously for one person to absorb. Recently, Root et al. (2007) surveyed financial executives. The survey of CFOs, treasurers, vice presidents, and controllers reported that the most important areas that will be needed in the field of finance in the future are strategic focus, globalization of financial markets, and

communications technology. Interestingly, they ranked theoretical advances in the body of financial knowledge as relatively unimportant. In fact, academics placed much more importance on financial knowledge and much less on strategic focus (Gitman, 2003).

Additional factors also affect both the curriculum and the behavior of students in a course. First, changes in the course prerequisites alter the content, skills, and knowledge students bring to bear on the content. Second, events external to the course and the university can increase or decrease the general awareness and interest of students in the content of a course. These factors will alter the measured effectiveness of the course in achieving both a student's own course objectives as well as the course objectives stated for the class as a whole.

Impact of Information Explosion and the Internet

An overarching factor affecting the amount of information available, how it is communicated and how people communicate has been the development and explosion of the Internet and wireless communication now available to virtually everyone. Such developments have completely altered the role of the faculty member vis-à-vis the student. In the *Wealth of Nations*, Adam Smith (1776) defined the role of the faculty member as the sole source of information to students, and students should seek out and study under the faculty from whom they wish to learn. As recently as 40 years ago, faculty retained this role, although they shared the role with books and other publications that also presented facts, interpretation, and analysis. Today, given the volume of courses and supporting material posted on the Internet and freely available, students have access to that type of information without having to enter a university or a classroom. Whether by computer, smartphone, or other electronic device, students can find facts, interpretation, and analysis quickly and easily. Thus, the role of the faculty member as an information provider has all but been replaced by faster-to-access, more comprehensive databases. Even textbooks are in jeopardy in rapidly changing disciplines and may go the way that much of print media has already gone. Bale (2008) demonstrated that course coverage does not need to be changed. She researched the characteristics of the students sitting in our classes today. They are referred to as Generation Y, the Echo Boom Generation, or Millennials, among other names. This group of students was born between 1980 and 2000. A profile of Generation Y is important to understand this generation's learning needs. Teaching pedagogy can be modified to meet the attributes of this group, which can improve their learning and perception of a course (Frاند, 2000; Brown, 1997). The students of Generation Y are unique. They started using the PC in grammar school and have a life connected by technology.

Alvin Toffler (1974) told a story in an essay in *Learning for Tomorrow* about a primitive tribe that lived on a river far from civilization that educated its young by teaching them what they needed to survive - how to fish the river, how to use the river for irrigation of crops, and so on. He then raised the question, "How effective was this education if 200 miles upstream engineers were about to divert the river permanently such that it ran down another side of the mountain, thus leaving only a dry riverbed where the river once ran?" The same question could be asked today. In education today, many are grappling with the difficulty of identifying the skills and activities that should be delivered given the explosion of content and understandings available via the Internet and wireless devices.

Course Objectives in General

Conventional wisdom has been that objectives should be stated for a course. Many accreditation agencies (e.g., Association to Advance Collegiate Schools of Business, AACSB) consider course objectives mandatory. In addition, an assessment scheme must be put in place to measure how well these objectives are met. Objectives are typically stated at the course level and assumed to apply to all students in the course.

These may not, however, be the students' objectives for the course; thus, it is not clear what meaning should be inferred by these assessments. It may be that they are measuring more of the intimidation power of the institution over the student than any student learning. These general, homogeneous objectives are not truly realistic as achievable or measureable goals because each individual student will have his/her own objectives for the course. For some students, a given course is taken only to fulfill a requirement stated by the college or department. For other students, they have a great interest in the course because they see it as directly applicable to a career track they wish to pursue. Rather than doing everything possible to earn an A in a course, other students will set the course

objectives for themselves to obtain a given grade (e.g., B+ or B-) in the course because they have other obligations or courses that they feel are more important to them personally. An interesting question is, “Should a faculty member allow variations in achievement of certain skills and behavior by students that more closely provides what the student wants and needs? Or, should the faculty member be bound to drag all students down the one path specified by the course objectives set for all?”

Objectives are easy to state for individual tasks and even for low-level or introductory courses that primarily cover learning definitions and basic algorithms. As courses become more advanced, the objectives become more complex. Bloom’s (1956) taxonomy is a useful classification system to consider a hierarchy of objectives from simple to complex, yet it is insufficient to measure achievement in courses today because the breadth of goals has been expanded significantly. Bloom’s taxonomy applies most directly to learning in a given limited content area and was not designed to incorporate acquiring and applying information in unknown situations. When the scope of course objectives involves acquiring information, describing and analyzing information, applying the information to specific and general cases, and extending the information and methods to unknown situations, Bloom’s taxonomy covers only the middle and not the extreme ends of these objectives. When the objectives further include presenting results via verbal, charting, and mathematical methods, the taxonomy becomes even less able to classify the entire activity.

Capstone Courses

A capstone course in finance should not only cover the content of the sub-areas of material covered previously, but should also prepare the student to begin his/her professional work in some area of finance after graduation. Content from corporate finance, investments, financial markets, and institutions that have been previously studied are brought together in a way that the student begins to understand the relationships among them. Skills that the student may not have been exercised in individual courses are also added so that the new graduate can add strong value to a company on initial employment. Among these skills are learning where and how to gain additional information to bring to bear on decision-making, finding comparable data for other firms or processes, and after completing an analysis, present the results credibly to a group of people with varying degrees of understanding of the problems or issues involved. Key skills in doing this include documenting facts and information accurately, developing materials to present this material appropriately credentialed, presenting their own key conclusions with appropriate justification, and presenting all of the material in a logical manner.

Most individual courses will deal with some subset of this material or these skills, but nowhere are they all brought together prior to a capstone course subject. Notably, the Gates Theorem states in “every general statement is a lie.” (Gerald Gates, biology professor, University of Redlands, 1967)

In this capstone course, students are expected to incorporate all of their previous learning - remembered and not - and bring it to bear on complex, non-structured issues in a rational and well-reasoned manner. They are further expected to present the results of their research such that the results are most effectively communicated to a group of professionals in that area. Doing the basic analysis is a necessary, but no longer sufficient, condition. Communicating the results in an effective way is a major course objective.

The breadth, scope, and depth of a capstone course make it very difficult to specify expected learning outcomes in detail. Specific activities that must be accomplished may be listed (inputs and process parts), but measuring the outcomes does not easily yield specific descriptions. Thambyah (2011, p. 36) noted, “There is a general lack of instruction on designing detailed learning outcomes for the “capstone” course due to a relative dearth in the literature on the specifics on just how to design learning outcomes for courses that teach the solving of non-structured problems.” He also points out that Jonassen (1997) considered problem-solving learning and concluded:

Because problem-solving outcomes are not sufficiently acknowledged or articulated in the instructional-design literature, little advice about how to design problem-solving instruction is available. Generic recommendations about using instruction, simulations, Socratic dialogues, heuristics, and algorithms to engage and support problem-

solving are common, but no instructional-design models provide any prescriptions for designing the components of instruction.

Jonassen and others (Jenkins et al., 2002; Wiley et al., 2008; and Vitner & Rozenes, 2009) have presented various models and recommendations on how to devise learning outcomes, and the common strategies are those that align the learning outcomes with 1) the prescribed graduate attributes, as determined by accreditation bodies, or 2) the expectations of . . . [professionals] in the workplace.

MAJOR COMPONENTS OF THE COURSE UNDER STUDY

The content of the course; that is; the focus of the present study, covers corporate finance, financial markets, and financial institutions. The thrust of this course is to make students responsible for their own learning by having them conduct guided research and then present it to the class. It requires students to be more active learners and researchers, as well as giving them the freedom to select topics they wish to research. Thus, both the course and the teaching of this course have evolved away from the lecture-based method on the history and characteristics of financial institutions and more recently has focused on how to manage a financial institution profitably.

In the course under investigation, students knew that 45% of their grade would be determined by their team research reports (topics selected by students), two individual cases were worth 20%, and a final examination counted for 15% and covered their research during the semester. Thus, 80% of the grade was based on their research work, with the remaining 20% based on assignments, quizzes, and class participation. While not a course purely devoted to student-generated research, the preponderance of the work was based on this aspect, much of which they had the opportunity to choose. It was expected that students would both learn more and enjoy the work more given the freedom they had to select and produce research rather than simply learn a set of algorithms and historical characteristics of financial institutions determined by the professor.

Students chose their research topics, were responsible for determining what information should be acquired, how the data should be analyzed, what other analysts concluded by looking at the same data, developing their own recommendations and conclusions, and presenting their finding effectively to the class. Each student worked with a different partner on each of the three special research reports, and both the evenness of the presentation and analytical breadth and depth of the reports improved through the term. Following each report presentation, each research team received a written report from the professor detailing the good points of the report and areas that could have been improved. Together with the benefit of watching their peers develop their analytical and presentation skills, these contributed greatly to improving student abilities in both research and presentation. It should be noted that they had full access to anything in print (via the university library), anything on the Internet in the way of public data, and the services of excellent reference librarians to acquire the basic data and information.

Differences from Other Studies

This study differs from other studies of instructional methods in several ways:

- Relevant course objectives were considered to be those set by each individual student rather than a stated set for the entire class. This places a much higher responsibility on the students to develop and direct their own learning.
- Students were required to present and defend their work to others in the class. This provided greater pressure on the students to impress others who might be a major player in their professional network in the immediate future.
- The measure of student achievement used here was not between a control group of one set of students and an experimental group of another group of students. Rather, it was determined by each student's opinion of how this course compared with other finance courses. This method is similar to that used in medicine to estimate the degree of pain a patient feels on a scale from one to ten. Each patient necessarily constructs

his/her own scale, yet the results are remarkably consistent across many patients, which allows physicians and others to use this as a valid measure.

- The onus was clearly on the student to set his/her own objectives and perform to a level of achievement each selected. All had access to the same unlimited information, data, and interpretive resources. All students were highly computer literate and had unlimited access to statistical and computer consultants to assist in their information and data analysis.

DATA ANALYSIS

Data for this study were acquired from two classes that focused on how to operate financial institutions profitably. The course is typically taken in the senior undergraduate year and is an elective in a finance major that has four required and four elective finance courses. This is the only course in the major that covers all areas of finance (financial institutions, corporate finance, and investments). As such, the course acts like a capstone course. There were 52 students enrolled in the classes and 50 useable surveys were completed. Two students were absent.

At the beginning of the course, students were given electronic access to the syllabus, with additional material made available throughout the semester. Students retained access for the entire term. The syllabus stated the background and objectives of the course, the work required, its weighting in grade determination, and other typical information. The students' primary work was researching three real-world problems and presenting their findings.

Students were asked to complete an anonymous survey at the end of the course (Table 1). The survey rated this course on multiple Likert scales to compare it with all other finance courses taken. The questions were selected to represent various learning outcomes rather than measure variables that might affect learning (although in some cases, this effect might be present). For most students in the course, "all other finance courses" included six or seven of the eight courses required for the finance major since this course was taken in their final semester before graduation. In addition, they were asked to state the course objectives and other information in their own words. They were also asked to state their expected grade in the course (at this time, they knew 75% of what their grade would be). They were not given access to the course objectives stated in the syllabus that they were given at the outset of the course. None of the student responses could be identified individually.

Table 1 contains both the survey instrument and the mean response of all students to the 11 Likert scale questions on the survey. The results are interesting.

Table 1: Survey Instrument and Summary of Means on Likert Scale Questions Compared To All Other Finance Classes

	Mean
Scale: 1 = Less , 2 3=Same, 4, 5 = More	
Did you have more or less choice in what you learned?	3.88
How hard did you work?	3.80
How interesting was the course?	3.48
How well did you get to know classmates?	3.24
Did you find topics of real interest in finance?	3.70
Do you know the decision-making process of firms?	3.46
Can you acquire real-world information on firms?	4.22
Can you analyze financial firms and their decisions?	3.80
Can you anticipate the problems of financial decisions?	3.78
How well do you feel you achieved the course objectives?	3.52
If you did this course over, would you work more?	3.36

For all 11 questions, the means were above the midpoint for all other finance courses. This assumes that students responded to these questions without bias. Given that they completed this survey anonymously, such that it could have no impact on their grade, a lack of bias is reasonable to assume. However, the fact that all of the means for this course were above the midpoints for all other finance courses should not be considered an indicator that this course is, in some measure, superior to all or indeed any other finance course. These are potential objectives for a

capstone course and, as such, would not be appropriate for most other finance courses offered. In other words, the assumption is made that previous courses have already covered (or at least exposed students to) all of the basic analytics and metrics and institutional background factors. The objectives for these courses would measure the extent to which student achievement had been successful in these areas. Given that the thrust of these courses differed from the capstone course under study, it is entirely reasonable that all of the previous courses could have been excellent at *accomplishing their objectives*, despite showing here that the capstone course achieved higher means on its objectives.

Caution should also be exercised in attempting to apply the results of this study to similar courses at other institutions. The university and finance program, in which this course is offered, is AACSB accredited and populated by students who are virtually all majoring in business. This course was taken predominantly by finance majors (or economics-finance or corporate finance-accounting majors) who had taken finance courses plus economics and accounting. Finance programs offered at a lower level, or with fewer basic courses in finance, would not be expected to produce students capable of accomplishing this kind of work or doing as well in reality or based on their own perceptions. Recently, another approach was taken to analyze finance in the curriculum. Root et al. (2007) built a database of the curriculum of U. S. undergraduate business schools. They concluded that there was no consistency in the finance curriculum at the business schools they studied. They also concluded that there were some shortcomings in certain areas, including international finance, working capital management, ethics, and an understanding of current financial products. The authors did not specifically state that the finance curriculum was not keeping up with current financial markets, institutions, and international finance and business, but this implication can be read between the lines of the study's findings.

Analysis of the Means

Of the 11 questions asked in the present study, the highest mean was on the students' perceived ability to acquire real-world information on firms (4.22). This is not typically an objective of lower-level finance courses and indicates that the institution's resources in providing access to information regarding financial firms and topics and corporate financial statements are such that the students could access them easily and find the information relevant to their research topics. Whether their capacity to do this was just more obvious to them in this course or was, in fact, a major advantage of this course, gaining this skill is very useful to emerging professionals in finance and highly valued by employers.

The next highest mean (3.88) indicated that students perceived they had more choice in what they learned. Because an objective of this course was to get students to accept responsibility and become more active learners, this mean indicates that they felt they had more control over their learning - a critical and necessary component for accomplishing these objectives.

The third highest mean (3.80) indicates that the students felt they worked more and were better able to analyze financial firms and their decisions as a result of this course. This is an expected result from students who feel they have more control over the content they are studying. Furthermore, it is interesting that even though the students felt they worked more in this course than others, they felt they would work even more if doing the course again (3.36).

The mean for anticipating the problems of financial decisions (3.78) was next highest. Again, this is not typically an objective of lower-level finance courses, so it is expected to be higher for this course. This mean was followed by the mean for "finding topics of real interest in finance" (3.70). Indirectly, this mean may indicate several things. First, it is expected to be higher here as students have more freedom in this course to seek out their own topics to study. Second, it may indicate that if the student has selected the topic to study, he/she will consider it to be of more "real" interest rather than one given to them by the professor.

Interesting information emerged concerning the course objectives. In the syllabus provided at the beginning of the course, students were given the objectives. Also, the title of the course was "Operations of Financial Institutions." On the survey, the first fill-in-the-blank question was, "What were the objectives of this course?" Reading through the student responses to this question, the admittedly subjective conclusion is that there was very

little correlation between the actual stated course objectives and the course objectives the students listed. In general, most students listed “financial institutions” – or just “institutions” - and how they worked, but virtually none listed the breadth and depth of the actual objectives stated for the course. In response to the question, “How well do you feel you achieved course objectives?”, the mean was 3.52. Since students answered this question in relation to their own stated course objectives in a class where they had some control over course content, it is surprising that this mean was not higher. Perhaps their answer reflected on the fact that they had no control over the content selected by other students.

The expectation was that because students had more control over the content of the course (as compared to other finance courses), they would find it more interesting. Yet, this only had a mean of 3.48. A possible explanation is that while they had control over what they studied and presented, they did not have control over what others in the class studied and presented.

The mean for “Do you know the decision-making process of firms?” was only 3.46. The range of topics on which students conducted research may have been too broad, or the question too general, to yield a higher mean. Finally, the mean for how well the students got to know their classmates was only 3.24. Despite the teamwork required in doing the research reports and presentations, the amount of class time devoted to discussing the topics and reports and the use of name cards for the first half of the term, this was the lowest mean of all 11 questions.

Comparing the means was also calculated by class section (there were two) and by expected student grade (A versus lower grades), and there were no significant differences. It appears that the results obtained above are rather robust and were due to the instructional methodology used rather than the influence of the specific peer group or the differing nature of students performing at the highest level versus those at a lower level. It should be noted that both sections were taught by the same faculty member; therefore, a difference in instructor characteristics should not have been a major potential explanatory variable.

CONCLUSION

It appears that there are the benefits expected from a course that provides students with more decision-making ability about what to learn. Such a course results in higher student achievement on several scales which are not usually included in explicit objectives or goals for a course. This is particularly relevant for students graduating into a profession that is undergoing rapid change at all levels and in which clear-cut objectives are rarely the rule in practice. While the analytical techniques of finance are mathematical and yield precise results, the application of these techniques to major decisions quickly becomes subjective given differences in known risks, risk tolerance, time horizon, and multiple other factors extant in the real world. To the extent that this instructional approach provided students with the perspective of a profession in finance, rather than just a toolbox of financial instruments and definitions, students should be better equipped to navigate the murky waters of applied finance successfully, whether in the areas of corporate finance, financial markets, or financial institutions - domestic or international.

It appears that the instructional design of this course has achieved the objectives set forth for the course. The increased student responsibility and the use of more active learning techniques have been accomplished by 1) challenging students to actively select research areas on which they wished to do reports, 2) having the students provide presentations on their work (taking ownership of the work product), and 3) requiring the reports to focus on individual major institutions and actions of companies and individuals within the financial industry. Although not measured by the survey for this course, it was apparent that the quality of the research reports improved from the first to the second to the third most likely due to 1) feedback received from the professor on each report and 2) watching and learning both analytical and presentation techniques from other students in the course over the semester.

Based on the present study’s results, the capstone course benefitted greatly from forcing greater student responsibility and providing opportunities for students to become more active learners. The amount of time and effort required by the professor to teach a course with these characteristics was not significantly greater than teaching the same course using the standard lecture method.

AUTHOR INFORMATION

Prof. David Nelson's teaching and research interests included financial institution management, educational innovation, and future studies. He was the academic director of the banking program developed by the New England Banking Institute and Bentley University. He served on the boards of directors for the Belmont Media Center and the Seven Seas Cruising Association. David passed away in 2012. He was a wonderful colleague, teacher, mentor, friend, father, grandfather and husband. His contributions to the Bentley University community are immeasurable. He is missed by many.

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