

## CHAPTER I

### INTRODUCTION

College and University instructors of finance continuously attempt to find the best way to deliver content materials to students while, at the same time, stimulating students' interest in the subject. This study seeks to compare learning outcomes and student attitudes toward the subject using two different teaching methods in introductory corporate finance courses.

All classes in the study will be primarily instructor led and lecture driven. The instructor will spend the majority of class time up front telling students basic facts and ideas. All of the classes will solve a case study project. Specifically, the case study project will examine a publicly traded corporation's financial ratios and weighted average cost of capital (WACC). In one set of classes, students will be split into groups and complete the case study as a group outside of class and then present their case study project to the class during class time. This set of classes will be referred to as the student-led out-of-class group. Another set of classes will work through the case study project during class time being led

by the instructor. This set of classes will be referred to as the instructor-led in-class group. These two groups will be examined to see if differences in learning take place and if student attitudes about the subject are different when using one approach compared to the other.

#### Background of the Study

Students coming from PhD programs in Finance and Economics are generally exposed to lecture-type classes that are heavily mathematically and statistically driven. The case method is seldom, if ever used in these types of classes (Trahan, 1993). Further, research is often a tenure criterion which continues to push the focus of professors on theory. Thus, most academically trained professors tend to prefer the lecture method (Saunders, 2001). In fact, Saunders goes on to explain that the modal finance professor does not use any other teaching method except lecture and leading classes in problem-solving (pp. 4).

Members of the business community generally believe that less theory should be taught and more emphasis should be placed on improving students' abilities to manage and solve problems (Hugstad, 1983; Joyal, 1982). A significant advantage of the case study is the ability to provide a sense of realism in approaching problems (Niland, 1954). However, it is unlikely that an experienced professor would

have an interest in totally changing a teaching style that has been developed over years.

The use of out-of-class assigned group work is not uncommon in the typical finance class. Saunders finds that forty-three percent of faculty assigns some type of group assignment that is to be done outside of class (Saunders, 2001). Thus, a case can be assigned as out-of-class work with the possibility of achieving the same learning objectives that are attributed to in-class cases.

It may therefore be possible for a professor to achieve some of the learning objectives that are usually attributed to in-class cases by assigning cases to be done as an out-of-class group project. This would require fewer changes to the way a class is taught. Lecture would still occur during class time. The only addition would be days set aside at some point for the groups to present their cases in class.

In the typical finance major there are three types of courses: the basic introductory course, the functional electives, and the capstone courses (Gitman, Lewis, and Yates, 1987). The introductory courses are intended for students who have little or no knowledge of the field and are intended to teach the vocabulary, tools, and theories that make up the discipline of finance (Gitman, Lewis, and

Yates, 1987). A further objective for this course is that a student can leave prepared for upper-level finance or other business courses.

Bloom (1956) developed a taxonomy of cognitive educational objectives. The taxonomy is presented below with brief definitions (Bloom, 1956).

<u>Level of Learning</u>	<u>Construct</u>	<u>Definition</u>
Lowest	Knowledge	Remember elements of a subject
	Comprehension	Ability to interpret, extrapolate and make inferences
	Application	Apply theory or principle to a real life situation
	Analysis	Break down a subject into parts or see relationships
	Synthesis	Construct an idea from parts
Highest	Evaluation	Ability to judge the quality of an idea.

This framework is useful for testing hypotheses about students' learning outcomes (Moore, 1999; Gitman, Lewis, and Yates, 1987). There are alternatives to Bloom's taxonomy (DeLandshere, 1988), however, Bloom's is widely known, well accepted, and serves as a basis in other

financial research (Gitman, Lewis, and Yates, 1987; Klien and Belt, 1996; Moore, 1999).

In this study involving introductory classes, the first three objectives are relevant (Gitman, Lewis, and Yates, 1987). Knowledge is the ability to remember. In Bloom's taxonomy this includes the recollection of specific symbols, terminology, dates, persons, sources of information, conventions, categories, criteria, methodology, places, and facts. This is the lowest level of knowledge, and should require no thinking processes other than remembering. It should be clear that this should happen in any introductory level course.

Knowledge involves only one step. Therefore, it would only include knowing of a process, but would not include obtaining the answer from the process. Arriving at a solution to a problem would be indicative of higher level learning. Knowledge includes methodology, but not how to use a specific methodology. Thus, a student would know of the procedures and techniques, but would not be able to apply them to a situation. The criterion for determining if a student has gained knowledge is that he or she can remember accurately a response to a specific question that requires only rote memory.

Bloom's taxonomy builds upon itself such that lower level skills are still in use when moving up the learning categories. Thus, knowledge is needed for comprehension which is the next level in Bloom's taxonomy. A student comprehends when he or she can make use of materials or ideas.

For comprehension to take place a student should be able to translate an idea or term into other language. This does not just mean students can put an idea into their own words. For example, in a finance course it could include taking a written idea and placing it in graphical form. Comprehension may also take place if students can engage in interpretation which requires going beyond rephrasing to determine the more general ideas.

Extrapolation is also involved in comprehension. A student would not only be able to translate an idea, but also determine the consequences. A student with this skill can draw conclusions and recognize trends.

Application is the final construct of Bloom's that would be appropriate for the introductory level finance courses examined in this study. At this level of learning, a student should understand ideas and theories well enough that they can be applied to real life situations. The difference between comprehension and application is that

with application, something new is added to the problem, and the student is still able to use the knowledge and comprehensive skills to apply the right tools to the solution. Instead of using facts and formulas in certain situations, the student is able to generalize concepts in order to solve a variety of problems.

Clearly, knowledge and comprehension should be included as objectives in an introductory course (Gitman, Lewis, and Yates, 1987). Further, a managerial outlook is important in the field of finance, and it is important to encourage students to think managerially early (Springate, 1974). Therefore, application is an important objective in introductory finance courses.

#### Problem Statement

There are unresolved issues about introductory students' interest in doing work on their own (Aggarwal, 1993). The possibility exists that students early in a finance program may prefer to be led by the instructor. This study will attempt to determine if there are differences in student attitudes toward the subject between the two different teaching methods.

$H_0^1$  : There is no difference in student attitudes between the student-led out-of-class group and the instructor-led in-class group.

Further, this study will attempt to determine if a professor can achieve the same learning objectives when using an instructor-led in-class case study project compared to assigning a student-led out-of-class case study project.

$H_0^2$  : There is no difference in learning outcomes between the student-led out-of-class group and the instructor-led in-class group.

#### Professional Significance of the Study

Instructors teaching finance face the problem of linking all the theories and models with the reality of the business world. The challenge is difficult in a principles-level class where students may lack a frame of reference. To use an analogy, it would be like learning theories to hit a baseball but never actually stepping up to the plate.

Finance is often treated as if it is an exact science. Students can become quite capable of plugging in numbers and doing the math. However, this does not provide the realization that the business world is not as clean as finance textbooks. Changes in interest rates and the legal environment, for example, can make variables difficult to control.

The case method is often the choice to help students get some feel for the business world. However, whether the case method or the lecture method is superior remains an

ongoing topic in financial education. The use of cases in an undergraduate, introductory level course are even more controversial than their use in higher level classes. Many infer that a basic level of knowledge is needed before a case study should even be considered.

However, producing students who would be capable managers is one of the goals of many business programs. Cases tend to encourage a managerial outlook (Springate, 1974). Solving chapter problems and listening to lecture where problems seem to have exact answers leaves students unprepared for the real world where problems are often complex and may have several solutions. Well organized cases should allow students to see the big picture and their use ought to help business students begin thinking as managers (Viscione and Aragon, 1984).

As part of learning to think like managers, students need to learn to make decisions, even if the solution to a problem is unclear. Again, cases would seem to get students in early classes used to making decisions.

A problem with a pure case method is that students in their first principles level course are not prepared to handle most cases. They are likely to be uncomfortable with accounting and financial tools which need significant explaining. Thus, lecture is needed in these classes.

Doing a case in class takes time away from lecture. The lecture is probably necessary to transmit knowledge even though it encourages memorizing facts and principles. A case can help expose students to real world situations, but it can be inefficient and leave important topics uncovered (Roulac, 1975).

However, if a case is assigned as an out-of-class project, lecture time would not need to be shortened nearly as much. Thus, combining lecture with an appropriate out-of-class assignment may be the best of both worlds.

This study will determine if there are differences in introductory corporate finance learning outcomes when using student-led out-of-class case study projects compared to using instructor-led in-class case study projects. Additionally, this study will determine if there are differences in student attitudes toward introductory finance when using student-led out-of-class case study projects compared to using instructor-led in-class case study projects.

#### Overview of Methodology

During the course of two college semesters, students participated in a study conducted at two college campuses where multiple sections of introductory corporate finance are offered during a term. Both universities are small,

four year, Christian liberal arts schools in the Midwest of the United States. The study was done during two different semesters at each university.

The sample included 130 students in 6 classes of introductory corporate finance. All classes in the study were primarily instructor led and lecture driven. All of the classes solved a case study project. Specifically, the case study project examined a publicly traded corporation's financial ratios and weighted average cost of capital (WACC). All classes were similar including the same homework assignments, tests, textbooks, material, and similar class schedule.

In three classes, students were split into groups and complete the case study as a group, outside of class and then present their case study project to the class during class time. These three classes are referred to as the student-led out-of-class group. Three different classes worked through the case study project during class time being led by the instructor. This set of classes is referred to as the instructor-led in-class group.

Each participant in the study was asked to take a pre-test during the first week of class. This was done in an attempt to see what knowledge and attitudes were brought into the upcoming finance class. During the second-to-last

week of class, a post-test was given. It was identical to the pre-test. The pre-test and post-test were analyzed using a paired-sample t-test and the Mann-Whitney test (z-score). Thus, each individual student was compared to himself or herself. This showed if learning was taking place and if attitudes about finance were better or worse. The control variables that were collected included age, hours worked per week, gender, SAT, GPA, and major.

The first five questions on each assessment were attitudinal and looked to measure changes in student perception about finance. Each attitudinal question is multiple choice and based on a Likert scale. The first two questions measure each student's likelihood of taking finance electives later in their undergraduate education and majoring in finance. The other three questions measure the perceived interest, importance, and difficulty of the subject of finance. Therefore, the study should indicate if one pedagogy has a more positive effect on student attitudes than the other.

The remaining questions were content based and taken from a test-bank of the course textbook, *Essentials of Corporate Finance*, 4<sup>th</sup> edition (Ross, 2004). Bloom provides a guideline for questions for measuring each of the six objectives in his cognitive taxonomy. The Ross textbook

does not use Bloom's taxonomy. However, they categorize questions as definition, concept, and problems. Further, they provide some framework as to the difficulty of a question.

On both the pre-test and post-test, 17 total questions were selected from the test bank in the areas of financial ratio analysis and WACC. Portions are definitions, concepts, and problems that were fitted into Bloom's categories of knowledge, comprehension, and application. Bloom's explanations and sample questions were used to help select questions that could be used to measure whether each objective was being met. This process was similar to the one used by Moore (1999), except he examined different content areas in finance.

All of the questions are multiple choice, which is consistent with Bloom's sample questions and Moore's methodology. Multiple choice questions allow for assessing knowledge, comprehension, and application.

#### Limitations of the Study

The study is tempered by several limitations. The experiment was done with undergraduate students in an introductory level finance course with students who were primarily declaring a business discipline as their major. Therefore, the results of the study would not completely

indicate how students farther along in their education or with a different major would feel or what they would achieve with either method.

Further, it should be made clear that the case study project is not the sole pedagogical tool in any of the classes, but simply part of the teaching method woven into the classes. Thus, those who may learn better with the use of cases were also exposed to lecture, making it unclear how much more some students could have potentially learned had the use of cases been the major thrust of the course.

The experiment was done in introductory level finance courses, and the cases were "arm-chair" type (described below). It is possible that the use of less structured cases may lead to different results for the study. The learning objectives obtained were measured in the short-term. The post-test was given towards the end of the semester soon after the case study projects were completed. Therefore, this study can draw no conclusion about the longer-term outcomes.

#### Definitions of Key Terms

##### *Case Categories*

There are three categories of cases. The first type of cases is usually referred to as "arm-chair" cases. An "arm-chair" case is similar to an end-of-chapter problem,

except that it may be a little longer and have slightly more depth. These cases are structured and are useful to develop skills in finance and simple decision making. Usually, there is a correct answer or narrow range of solutions to this type of case.

The second type of case involves more integration and formulation of alternatives. These type of cases are structured, but to less of a degree than "arm-chair" cases. Usually with this type of case, an attempt is made to show that problems and solutions impact other areas of a corporation.

The third type of case is the Harvard type case. These are unstructured and are useful for encouraging students to define a problem, conduct some type of technical finance techniques, determine the impact of the decision on the entire firm, come up with a list of potential alternatives as a solution to the case, and make a final decision on a course of action.

### Conclusion

This study examines the attitudes and learning outcomes of students who were instructed in an introductory level finance course using two different teaching methods. This is a relevant area of study because instructors are still trying to find the best way to deliver course content

that prepares students for the business world. This study builds on other research that will be presented in the next chapter.