Teaching the Introductory Finance Course: What Can We Learn from Student Perceptions and Expectations?

V. Sivarama Krishnan, Chenchuramaiah T. Bathala, T. K. Bhattacharya, and Robert Ritchey

This paper analyzes student perceptions and expectations about finance and the introductory finance course with a view to initiate a debate on the design, structure, and delivery of the introductory finance course. The study uses a set of two surveys, one at the beginning and another at the end of the semester, of students in three business schools to identify student perceptions about the introductory finance course. Dominant perceptions among the students include that the course is difficult, but also interesting and useful. Factor analysis of the data reveals four distinct factors relating to jobs, course content, course difficulty and indifference. The results of the surveys and suggestions offered herein should be useful to academics concerned with improving the design, structure, and delivery of the introductory finance course taught to undergraduate students. [JEL: A22, G30]

■The undergraduate introductory finance course is very important for finance departments and the academics in the finance area for a number of reasons. The course provides fundamental understanding of the basic principles of finance, which are relevant to all business majors. Typically, it is the finance course with the largest enrollment because generally it is a required course for all business majors. The course also helps in recruiting finance majors and training future finance teachers as it is often taught by finance Ph.D. students. This paper attempts to evaluate student perceptions and expectations about the introductory finance course and offers suggestions to improve the design, structure and delivery of the introductory finance course.

V. Sivarama Krishnan is an Associate Professor at Cameron University, Lawton, OK 73505. Chenchuramaiah T. Bathala is an Assistant Professor at Cleveland State University, Cleveland, OH 44114. T.K. Bhattacharya is an Associate Professor at Cameron University, Lawton, OK 73505. Robert Ritchey is an Associate Professor at Texas Tech University, Lubbock, TX 79409.

I. Overview of Previous Research

Financial education has attracted considerable research interest recently. Prior research on financial education could be broadly classified into four groups, as described below.

1) Curriculum Development—Most of the research in this area relates to structuring and designing the curriculum for finance majors. McWilliams and Pantalone (1994) provide a good review. (See also Bialaszewski, Pencek, and Zietlow, 1993; DeMong, Pettit, and Campsey, 1979; and Strickler, 1989).

2) Development and delivery of courses—This research deals with the development and delivery of individual courses in specialized areas like money and capital markets, international finance, etc. (see, for example, Esmuede, 1988; Rubash, 1994; and Sihler, 1993).

3) Pedagogic tools—A number of articles describe pedagogic tools and instructional approaches for improvement of specific courses or subject areas. Good examples include Horvath (1985) and Kochman (1986). Paulsen and Gentry (1995) empirically evaluate the role of motivation and

learning strategies of students in their academic performance.

    4) Faculty career-related topics—This area covers a range of topics relating to faculty careers. Bertin and Zivney's (1991) study on the market for new finance faculty is a good example of work in this area.

Very little work appears to have been done on the design, structure, and delivery of the introductory finance course offered as part of the undergraduate business curriculum. Two exceptions are the work by Berry and Farragher (1987) and a recent paper by Cooley and Heck (1996). Berry and Farragher (1987) surveyed FMA members to study the course content of the introductory finance courses offered by their institutions. This provided valuable information on what is being offered in the introductory finance course at a broad cross-section of schools. In an attempt to set benchmarks for this course, Cooley and Heck survey over 200 faculty who teach the course. The survey questions covered topics taught, extent and order of coverage, and structure and design details of the course. The authors report general agreement among faculty on the importance of topics and concepts covered in the course. They also find wide variations in the design and structure of the course.

As the introductory finance course is generally the first finance course taken by the students and for reasons mentioned earlier, it is important that the finance academic community puts its best efforts into designing the course in order to make it an effective, interesting, and useful introduction to finance. This study surveys students in three business schools from three states to evaluate student perceptions and expectations about the introductory finance course. We acknowledge that student perceptions on the validity and relative value of course content may be of limited value, especially at the beginning of the semester. We feel, however, that student inputs can both enable us to better understand the student needs and to evaluate the effectiveness of the course. Only students can tell us what they are getting from the course. They are the users of the course; if they do not find it effective and do not perceive it to be useful, then we are not doing a good job in exploiting the potential of the course and the students. Further, since students' perceptions play an important part on their receptivity to the course and its content, our understanding of these perceptions should enable us to design and structure a better course.

Our study includes a survey of students at the beginning and another, nearly identical, survey at the end of the course. This makes it possible to understand more clearly the impact the course had on the students. The paper analyzes the student responses before and after the course, provides valuable interpretations, and offers suggestions for improving the design and delivery of the course based partly on insights provided by the survey results.

II. Methodology

The main methodological tool for the study is a set of two surveys administered at the beginning and at the end of the semester. The research included the following steps:

    1) Survey the students at the beginning of the semester.

    2) Convey the survey results to the students and discuss specific areas of concern in class during the course of the semester.

    3) Survey the students again at the end of the semester with a survey instrument similar to the one in step one, but modified and expanded to include additional questions with a view to measure the change in student perceptions, if any.

    4) Analyze and interpret the survey responses.

The survey given at the beginning of the semester will henceforth be referred to as the pre-survey and the survey at the end of the course as the post-survey. Prior to designing the survey instrument, we reviewed student evaluations for the introductory finance courses. This review was done in each of the three schools and included analyzing both quantitative responses and comments made in course evaluation sheets. The review showed that over 60% of the students considered the introductory finance course to be one of the most difficult courses taken by them. The general quantitative orientation and the relatively high level of accounting content in the course were often cited as reasons for the difficulty associated with the course. A preliminary survey instrument was pilot tested in one of the schools during the fall semester of 1994. The responses were evaluated and discussed with the students in order to improve the structure and contents of the survey instrument.

The main questions in the survey relate: the general student perceptions about finance, perceived level of difficulty, expectations about the course content, what the student would like to see in the course, whether the student would take the course if it were not a required course, and the perceptions about the ethical behavior of people in the finance field. The survey instrument also included questions relating to the students' preparedness for the course and general demographic information. The design of the instrument

and the questions included reflected our plan to survey the students both at the beginning and at the end of the course. We were unsure of the responses to questions in the survey at the beginning of the semester about the course content, expectations and perceptions. We, however, felt that the questions needed to be included in order to provide a benchmark for comparison with responses to be received from the post-course survey. Further, we also felt that students did carry perceived notions about the course based on what they heard from their friends who had taken the course. Understanding these preconceived notions would be useful and help us improve the course.

Most of the questions were structured as statements that required responses on a five-point scale, with five indicating strong agreement and one indicating strong disagreement. In pre-testing, we tried both five-point and seven-point scales and determined that students found it easier to respond to questions on a five-point scale. The only exceptions to the five-point scale are questions seeking background information and two others, included in the post-survey, relating to the pace of delivery and relative difficulty of the course. We preferred specific word responses to these questions as these suited the questions better.

The surveys were administered to students taking introductory finance courses in three different business schools (one each from Texas, Oklahoma, and North Dakota[1]) in the spring of 1995. One school is a Ph.D.-granting institution with a very large enrollment and over 3,500 business majors. The other two schools are smaller with enrollments of about 700 students for the one in Oklahoma and 900 students for the North Dakota school. Two of the three schools offer finance majors or specialization in the undergraduate program. While participation in the survey was voluntary and was not a required part of the course, all students who were present in class participated in the surveys. Six different instructors taught the course and three different text books were used.

III. Results

The results are presented in three sub-sections—summary statistics, correlation analysis, and factor analysis.

A. Summary Statistics

Exhibit 1 lists all the questions and a summary of the responses. The number of respondents to the survey at the beginning of the semester was 386. The number of respondents at the end of the semester was 275. The

decrease in the number of respondents was mostly due to students dropping out of the course during the semester and absences on the days the post-surveys were given. Of the respondents, 35% were women and about 84% were in the 20-25 age group. Additionally, 55% were juniors, and the remaining were seniors. Of the respondents, 20% were finance majors. The average GPA of most students ranged between 2.5 and 3.0.

Initially, analysis of the survey results was done separately for responses from each school. Very little qualitative difference in the responses was identified across the three schools. We conducted ANOVA and pair-wise tests using multiple comparisons using the Tukey and Scheffe procedures to determine statistical differences among students' responses from the three schools. We found statistically significant differences only for a few variables.[2] As the differences across schools were very limited and in the interest of concise presentation, we decided to present the results for all three schools together. Exhibit 1 gives the summary of the pre- and post-responses as well as the means and standard deviations for the responses.

A summary of the responses to selected questions is given in Exhibit 2. The probability values for t-tests (between the pre- and post-surveys) for statistical significance are also given in this exhibit. The responses indicate a significant shift in the student opinions and perceptions between the two surveys. On Question 2a, 79% of the students in the pre-survey responded with a four or five (agree or agree strongly) indicating that they expected the course to be **challenging** or difficult. The mean response was 4.02. The post-survey responses have a higher mean value (4.43) and over 91% of the responses were four or five. The difference between the pre- and the post-surveys is significant at 0.01 level.

A majority of the students considered the course to be **interesting**: 69% for the pre-survey (mean of 3.7) and 62% for the post-survey (mean of 3.57) and **useful**: 81% for pre- (mean of 4.07) and 71% for post-(mean=3.81) survey. It is revealing to note that, after taking the course, students found it to be more **challenging** than what they expected before taking the course. Further, they found the course to be less **interesting** (though the difference is only marginally significant) and less **useful** than how they perceived before taking the course.

The students expected that the course would involve math applications and quantitative analysis: 94% in the pre-survey with mean of 4.31 versus a somewhat lower 65% (mean=3.63) in the post-survey. Most of the students wanted financial concepts and their implications to decision making (mean=4.03 in the pre-

Exhibit 1. Summary of Survey Results

For this survey, 1 = Strongly Disagree, 2 = Disagree, 3 = Neither Agree nor Disagree, 4 = Agree, and 5 = Strongly Agree.

	n	1	2	3	4	5	Mean	Std. Dev
1. Finance primarily deals with								
a) Strategic financial decisions in business firms.								
PRE	386	4	18	30	240	94	4.04	0.78
POST	275	3	1	10	152	109	4.32	0.67
b) Stocks, bonds, and other investment opportunities.								
PRE	385	3	17	48	227	90	3.99	0.78
POST	275	2	3	17	148	106	4.29	0.68
c) Banking, Insurance, and other financial services.								
PRE	385	4	18	53	236	74	3.92	0.78
POST	274	3	29	54	439	49	3.74	0.91
d) Making money in the stock market.								
PRE	384	16	74	128	135	31	3.23	0.99
POST	274	14	66	80	89	25	3.16	1.05
2. I expect the finance course will be								
a) Challenging.								
PRE	383	4	19	57	186	117	4.02	0.86
POST	275	2	3	19	102	149	4.43	0.73
b) Interesting.								
PRE	385	9	31	80	208	57	3.70	0.90
POST	273	17	27	61	120	48	3.57	1.08
c) Useful in day-to-day life, e.g., investing, savings, and retirement.								
PRE	382	3	9	61	193	116	4.07	0.79
POST	274	10	15	54	134	61	3.81	0.97
3. I expect the finance course will								
a) involve math applications and quantitative analysis.								
PRE	386	1	8	16	204	157	4.31	0.68
POST	275	12	17	66	147	33	3.63	0.93
b) introduce me to several financial theories.								
PRE	386	3	8	12	216	147	4.28	0.70
POST	275	10	16	43	166	40	3.76	0.90
4. I would like a finance course that emphasizes								
a) Financial concepts and their implications to decision making.								
PRE	386	3	9	57	220	97	4.03	0.75
POST	275	6	20	64	130	55	3.76	0.93
b) Problem solving through examples.								
PRE	386	7	17	51	205	106	4.00	0.86
POST	274	7	13	63	96	95	3.95	1.00
c) Case discussions and analyses.								
PRE	386	6	36	97	188	59	3.66	0.90
POST	275	8	46	92	98	31	3.36	0.98
d) Ethical issues in finance.								
PRE	386	12	36	120	173	45	3.52	0.93
POST	274	31	74	96	53	20	2.84	1.09
5. Tutoring or Lab Assistance should be available for this course.								
POST	273	6	7	32	81	147	4.30	0.93
6. The Finance course should be a required course for business majors.								
PRE	383	6	13	63	176	125	4.04	0.88
POST	273	18	18	33	93	111	3.96	1.18
7. I would not take this course if it were not required for my major.								
PRE	385	51	100	94	67	73	3.02	1.31
POST	274	38	55	42	57	82	3.33	1.44

Exhibit 1. Summary of Survey Results (*Continued*)

	n	1	2	3	4	5	Mean	Std. Dev
8. I have the aptitude for math oriented courses such as finance.								
PRE	386	17	37	80	188	64	3.63	1.01
9. The material I expect to learn in this course will be useful for my job in the future.								
PRE	386	3	18	65	183	117	4.01	0.85
POST	275	14	27	53	100	81	3.75	1.13
10. The material I expect to learn in this course will be useful for other courses in my educational program.								
PRE	386	6	29	106	173	72	3.71	0.91
POST	275	18	35	73	100	49	3.46	1.12
11. I have adequate preparation in the following pre-requisites for the finance course.								
a) Accounting.								
PRE	382	5	18	34	217	108	4.06	0.82
POST	275	13	17	27	119	99	4.00	1.06
b) Statistics.								
PRE	380	10	27	52	198	93	3.88	0.94
POST	275	14	25	52	129	55	3.68	1.05
c) Mathematics.								
PRE	381	1	15	29	219	117	4.14	0.74
POST	275	7	14	22	156	76	4.02	0.89
d) Economics.								
PRE	381	3	17	57	213	91	3.97	0.80
POST	275	15	29	48	128	55	3.65	1.08
12. Individuals working in the finance field are less ethical than those in other fields of business.								
PRE	381	52	145	168	12	4	2.39	0.80
POST	275	67	80	109	15	4	2.31	0.95
13. Individuals working in the finance field are less ethical than professors.								
PRE	382	53	128	179	16	6	2.46	0.84
POST	275	59	74	118	20	4	2.40	0.95
14. Individuals working in the finance field are less ethical than those working outside the business world.								
PRE	382	51	136	174	17	4	2.44	0.82
POST	274	55	83	120	11	5	2.37	0.91
15. After graduation, I would like a career in the finance field, e.g., banking, insurance, brokerage firms, and investment counseling.								
PRE	380	54	99	110	76	41	2.87	1.20
POST	272	72	55	57	47	41	2.74	1.40
16. I have a reasonable chance of getting a job that requires finance background.								
PRE	382	15	45	107	171	44	3.48	0.98
POST	274	30	34	65	109	36	3.32	1.18

17. The course material was presented at a _____ pace.

	n	Slow	Moderate	Fast	Mean	Std. Dev.
POST	274	4	139	131	2.46	0.53

18. Which of the following best describes the level of difficulty of this course compared to other courses that you have taken so far.

	n	Easy	Diff	More	Most	Mean	Std. Dev
POST	274	8	30	173	63	3.06	0.67

19. This course should be taught as a _____ course.

	n	3-Cr	4-Cr	2-Sem	Other	Mean	Std. Dev
POST	273	147	70	44	12	1.71	0.89

Exhibit 1. Summary of Survey Results (*Continued*)

	n	1	2	3	4	5	Mean	Std.Dev
20.Considering your future career or personal needs, indicate the importance that you would assign to the following topics in corporate finance.								
a) Financial Statement Analysis, Cash Flow, Taxes.								
POST	272	10	12	44	108	98	4.00	1.01
b) Risk and Return Analysis, Portfolio concepts,CAPM,Beta.								
POST	272	19	35	78	108	32	3.36	1.07
c) Time Value of Money: compounding, discounting,annuities.								
POST	272	7	8	40	97	120	4.16	0.96
d) Valuation: Bonds, common stock, and preferred stock.								
POST	272	10	14	54	121	73	3.86	0.99
e) The cost of capital: component costs, MCC.								
POST	270	17	44	97	94	18	3.19	1.00
f) Capital Budgeting: techniques and cash-flow estimation.								
POST	270	10	22	78	115	45	3.60	0.98
g) Capital Structure and Leverage Analysis.								
POST	270	14	40	100	87	29	3.29	0.96
h) Dividend Policy.								
POST	271	16	28	106	101	20	3.30	0.96
i) Working Capital: Cash, A/Cs Rec., Inventory, and ST Credit.								
POST	270	8	17	65	120	60	3.77	0.96
j) Financial Forecasting								
POST	271	10	21	52	120	68	3.79	1.02
k) Common Stock and the Investment Banking Process.								
POST	270	7	20	85	115	43	3.62	0.93
l) Long-Term Debt: types of bonds and bond ratings.								
POST	271	8	30	76	120	37	3.55	0.96
m) Bond Refunding Analysis								
POST	268	24	63	99	67	15	2.95	1.03
n) Lease Analysis								
POST	271	24	59	101	70	17	2.99	1.04
o) Options, Futures, and Convertible Securities.								
POST	271	11	50	105	79	26	3.22	0.99
p) Mergers, Acquisitions, Divestiture and LBO's.								
POST	269	20	49	104	67	29	3.13	1.07
q) Multinational Financial Mgmt.								
POST	270	24	50	96	72	28	3.11	1.10
r) Any other topic								
POST	37	7	1	13	11	5	3.16	1.28

21.Please furnish some background information about yourself.

a) Have you taken any finance course(s) in the past?	n	No	Yes
PRE	378	313	65
POST	270	230	40

b) Your major:	n	Acct	Bus	MIS	Other
PRE	377	87	164	33	92
POST	264	64	113	24	63

Your area of concentration (within Bus. Admn.)	n	Fin	Mktg	Mgt	Other
PRE	320	75	73	87	85
POST	194	42	56	45	51

c) Your classification:	n	Soph	Jr	Sr
PRE	378	2	207	169
POST	272	0	143	129

Exhibit 1. Summary of Survey Results (*Continued*)

d) Your sex:

	n	Female	Male
PRE	379	131	248
POST	271	101	170

e) Your course load this semester:

	n	12 hrs	15 hrs	18 hrs	21 hrs
PRE	374	99	210	61	4
POST	271	103	137	24	7

f) Your age:

	n	<20	20-25	26-30	>30
PRE	380	8	320	22	30
POST	271	2	232	16	21

g) Outside the classroom, how many hours have you spent on this course.

	n	<3 hrs	4-6 hrs	6-9 hrs	>9 hrs	Mean
POST	272	91	131	38	12	1.76

h) Your Grade on this course.

	n	A	B	C	D	F	Mean	(Std. Dev)
POST	269	43	111	97	17	1	2.66	(0.83)

i) Your Cumulative GPA:

	n	< 2.5	2.5-3.0	3.1-3.5	>3.5	Mean	(Std. Dev)
PRE	374	36	208	81	49	2.38	(0.83)
POST	268	21	137	66	44	2.50	(0.86)

survey and 3.76 in the post-survey) and preferred them to case analysis (mean=3.66 for pre- and 3.36 for post-). Problem solving through examples (mean=4.0 for pre- and 3.95 for post-) also was a high priority. On the level of difficulty of the course compared to other courses taken by the students (a question included only in the post-survey), over 86% of the respondents felt that the course was more difficult than other courses with 23% indicating that the course was the most difficult they had taken. This, perhaps, explains the overwhelming response to the question relating to tutoring or lab assistance with about 84% (mean = 4.30) indicating the need for such assistance.

In the pre-survey, 79% of respondents (74% for the post-survey) felt that the course should be **required** for all business majors. About 36% in the pre-survey (51% for the post-survey), however, stated that they would **not-take** the course if it were not required. It does appear that the level of difficulty felt by some of the students causes them to have a stronger dislike for finance after taking the course. In spite of this aversion, 78% in the pre-survey (66% for the post-survey) felt that the course would be useful to them in their jobs. In the pre-survey, 63% (54% for the post-survey) said that they expected the course would be useful for other courses in the program.

In addition to the results reported in Exhibits 1 and 2, some other survey results are worthy of mention. The students generally indicated that they were reasonably well prepared for the course in terms of prerequisites like accounting, statistics and economics.

On the three questions relating to ethics in the finance field (Questions 12, 13, and 14 in Exhibit 1), the responses indicate that the students do not perceive ethics in the field to be a problem. Less than 6% of the students feel that people in the finance field are less ethical than their counterparts in business, academia, or other fields. Only about 31% of the students expected to find employment in areas directly related to finance (not surprising, since only about 20% were finance majors). However, about 56% felt that they had a reasonable chance of finding a job that requires finance background.

These findings are interesting and revealing. We specifically address the perceptions of **challenging, interesting,** and **useful** later in the paper with the help of correlation and factor analyses. We feel that finance educators would like to take a careful note of these findings and understand what makes the course challenging, interesting and useful for the student.

A question included only in the post-survey (Question 20) asked the students to rank the different topics in order of importance, considering their career and personal interests. The primary objective of this question was to obtain relative ranking and a selection of topics, albeit subjective, in finance by the students in terms of their interests. We acknowledge that rankings are subjective and reflect their personal interests and career needs, and students' limited knowledge of finance. However,

Exhibit 2. Summary Results - Responses to Selected Questions

Survey Question (Question Number)	Percent of Students Strongly Agreeing/Agreeing (Mean In Parenthesis)		p-Value for T-Test between Pre and Post
	Pre-Survey	Post-Survey	
The course would be (was):			
Challenging (2a)	79.1 (4.02)	91.3 (4.43)	<0.01
Interesting (2b)	68.8 (3.70)	61.5 (3.57)	0.07
Useful (2c)	80.9 (4.07)	71.1 (3.81)	<0.01
I expect the Finance course will:			
involve **math applications** ...(3a)	93.5 (4.31)	65.0 (3.63)	<0.01
introduce .... **financial theories** ...(3b)	94.0 (4.28)	74.0 (3.76)	<0.01
I would like emphasis on:			
Financial Concepts (4a)	82.1 (4.03)	67.3 (3.76)	<0.01
Problem Solving (4b)	80.6 (4.00)	69.7 (3.95)	0.45
Case Analysis (4c)	64.0 (3.66)	46.9 (3.36)	<0.01
Ethical Issues (4d)	56.5 (3.52)	26.6 (2.84)	<0.01
The Finance course should be... for Business majors **required** (6)	79.0 (4.04)	74.0 (3.96)	0.26
I would … the course if it were not required **not-take** (7)	36.4 (3.02)	50.7 (3.33)	0.01
The material I expect to learn in this course will be useful for my job in the future	77.7 (4.01)	65.8 (3.75)	<0.01
The material I expect to learn in this course will be useful for other courses in my educational program	63.4 (3.71)	54.2 (3.46)	<0.01
Tutoring/Lab assistance should be available for this course (5 - post-survey only)	-	84.0 (4.30)	-
The level of **comparative difficulty** (18)[a]	-	87.6 (3.06)	-

[a]This question, included only in the post-survey, requested students to indicate the level of difficulty of the course compared to other courses they had taken on four-point scale (1 - Easy, 2- Difficult, 3 - More difficult, and 4 - Most difficult).

as our sample is relatively large and drawn from three different schools from different parts of the country, we believe it to be reasonable to assume that the students' indicated needs are broadly representative. Therefore, we do feel the student responses are of some value.[3] The topics which received fairly high rankings (better than 3.5 on a five-point scale) were:

Time value of money	4.16
Financial statement analysis	4.00
Security valuation	3.86
Financial forecasting	3.79
Investment banking	3.62
Capital budgeting	3.60

[3]We do believe that the students were more aware of the various topics in finance at the end of the course than at the beginning and in a limited sense are qualified to indicate their preferences.

We note that the students ranked lower some topics such as working capital management and cost of capital. The students' ranking compares quite favorably with the ranking given by finance faculty in Cooley and Heck (1996). Four of the above were ranked among the top six by the faculty as most important. The topics ranked lower by the faculty are financial forecasting and investment banking. The topics that were ranked high in the faculty ranking but ranked lower by the students are risk and return and cost of capital. It appears that these topics seemed too theoretical and hence of limited practical value to most students. This probably calls for improving the presentation of these topics rather than dropping them.

B. Correlation Analysis

We conducted correlation analysis to have a better understanding of the reasons for the student responses. The analysis enables grouping of students'

Exhibit 3. Correlation Coefficients (p-Value[a]) Survey at the Beginning of the Semester

Variables Challeng(ing), Interest(ing) **and** Useful **are responses to the questions 2.a, 2.b, and 2.c respectively. The other variables are responses to various questions as indicated below (question numbers in parenthesis):**

Quantit(ative)	I expect the finance course will …….. involve math applications and quantitative analysis (3.a).
Theories	I expect …………. introduce me to several financial theories (3.b).
Required	The finance course should be a required course for Business majors (6).
Nottake	I would not take this course if it were not required for my major (7).
Jobuse	The material I expect to learn in this course will be useful for my job in the future (9).
Finjob1	After graduation, I would like a career in the Finance field, e.g., banking, insurance, brokerage firms, and investment counseling (15).

Variables	Challeng.	Interest.	Useful	Quantit.	Theories	Required	Nottake	Jobuse	Finjob1
Challeng.	1.00	-0.13 (0.01)	0.07 (0.14)	0.35 (0.00)	0.25 (0.00)	0.03 (0.52)	0.24 (0.00)	0.02 (0.64)	-0.08 (0.13)
Interest.		1.00	0.49 (0.00)	0.20 (0.00)	0.22 (0.00)	0.39 (0.00)	-0.42 (0.00)	0.48 (0.00)	0.42 (0.00)
Useful			1.00	0.34 (0.00)	0.40 (0.00)	0.36 (0.00)	-0.24 (0.00)	0.55 (0.00)	0.20 (0.00)
Quantit.				1.00	0.50 (0.00)	0.24 (0.00)	0.01 (0.98)	0.28 (0.00)	-0.03 (0.59)
Theories					1.00	0.38 (0.00)	-0.01 (0.91)	0.37 (0.00)	0.04 (0.40)
Required						1.00	-0.28 (0.00)	0.46 (0.00)	0.21 (0.00)
Nottake							1.00	-0.30 (0.00)	-0.35 (0.00)
Jobuse								1.00	0.39 (0.00)
Finjob1									1.00

[a]p-values less than 0.01 are shown as 0.00.

perceptions and expectations, which are driven by same or related factors. We present the correlation matrix for responses, which showed significant correlations with other variables. Exhibit 3 presents the correlation coefficients for the pre-survey. The perception that the course would be **challenging** is driven at least partly by the impression that the course is heavily quantitative and involves financial theories. It also appears that many of the respondents who said that they would **not-take** the course if it were not required, felt that the course would be **challenging** and difficult. The response **interesting** is significantly positively correlated with **useful** and job related responses. The high negative correlation of **not-take** with other variables is not surprising. The responses which indicated the course to be **useful** are correlated with **job-use, theories**, **required,** and **quantitative**. The response that the course should be made **required**, is highly correlated to, besides **interesting** and **useful, theories** and **quantitative**. The response that student would **not-take** the course is, as to be expected, negatively correlated to the students' perception that the course would not be **interesting** or **useful**.

Exhibit 4 gives the correlation coefficients for the variables which showed significant relationship to other variables in the post-survey. The variable **difficulty** is the response to the question on relative

difficulty of the course compared to the other courses taken by the students. The relationships revealed for **challenging, useful** and **interesting** were very similar to those found in the pre-survey with some interesting exceptions. The positive association between **challenging,** and **useful** and **interesting** is higher and significant in the post-survey. The relationships revealed for the comparative **difficult**y were not surprising—the students who felt the course to be difficult would **not-take** it if it were not required; they also found limited use for the course. They also did not expect to find jobs that related to finance. The need for a **tutor** is highly correlated with the comparative **difficulty** of the course.

C. Factor Analysis

To gain further insights into the students' perceptions, we conducted an exploratory factor analysis of the data. We used the maximum likelihood estimates and varimax rotation to obtain orthogonal or uncorrelated factors. Since the objective was to find common factors, we used all the response variables common to both surveys, which showed positive association with at least three other variables. Demographic variables were excluded as they did not appear to be related to any of the differences in responses. We let the data decide the number of factors.

Exhibit 4. Correlation Coefficients (p-Value[a]) Survey at the End of the Semester

Variables Challeng(ing), Interest(ing) and Useful are responses to the questions 2a, 2b, and 2c respectively. The variable Difficulty is the response to question number 18 on comparative difficulty of the finance course relative to other courses taken by the student. The other variables are responses to various questions as indicated below (question numbers in parenthesis):

Quantit(ative)	I expect the finance course will .... involve math applications and quantitative analysis (3a).
Theories	I expect .... introduce me to several financial theories (3b).
Tutor	Tutoring or lab assistance should be available for this course (5).
Required	The finance course should be a required course for Business majors (6).
Nottake	I would not take this course if it were not required for my major (7).
Finjob1	After graduation, I would like a career in the Finance field, e.g., banking, insurance, brokerage firms, and investment counseling (15).

Variables	Challeng.	Interest.	Useful	Difficulty	Quantit.	Theories	Tutor	Required	Nottake	Finjob1
Challeng.	1.00	0.22 (0.00)	0.20 (0.00)	0.37 (0.00)	0.20 (0.00)	0.20 (0.00)	0.42 (0.00)	0.16 (0.01)	0.15 (0.01)	-0.05 (0.45)
Interest.		1.00	0.57 (0.00)	-0.18 (0.00)	0.50 (0.00)	0.46 (0.00)	-0.08 (0.00)	0.51 (0.00)	-0.37 (0.00)	0.47 (0.00)
Useful			1.00	-0.12 (0.05)	0.39 (0.00)	0.41 (0.00)	-0.01 (0.86)	0.42 (0.00)	-0.37 (0.00)	0.25 (0.00)
Difficulty				1.00	-0.16 (0.01)	-0.09 (0.14)	0.40 (0.00)	-0.12 (0.05)	0.26 (0.00)	-0.17 (0.01)
Quantit.					1.00	0.72 (0.00)	-0.03 (0.53)	0.38 (0.00)	-0.23 (0.00)	0.23 (0.00)
Theories						1.00	-0.01 (0.83)	0.36 (0.000)	-0.17 (0.01)	0.19 (0.00)
Tutor							1.00	-0.01 (0.89)	0.20 (0.00)	-0.21 (0.00)
Required								1.00	-0.41 (0.00)	0.37 (0.00)
Nottake									1.00	-0.49 (0.00)
Finjob1										1.00

[a]p-values less than 0.01 are shown as 0.00.

Four factors were retained for both the pre- and post-survey data. Exhibit 5 gives details of the factor pattern after rotation for both the pre- and post-survey data. One factor loaded on jobs and job-related variables. This factor (named **Jobs** for easy exposition) also had high factor loading on **Interesting, useful, required, not-take** (negative). The second factor had low loadings on all perception variables and had high loading only on the pre-requisite courses (Accounting, Statistics and Economics). We named this factor **Indifference.** The third factor was named **Challenging** because the response variable with this name had the highest loading from this factor. This factor also loaded on **quantitative** and **theories**. The fourth factor loaded on contents, which the students liked to see in the course such as concepts and examples involving decision making, problem solving, cases and ethics. We named this factor **Contents**. The four factors together explained nearly all of the variance of the variables used in the analysis.

For the post-survey the results were very similar. The factor pattern was nearly identical, though loadings on individual variables differed somewhat.

Exhibit 5 also gives the percent of variance explained by each factor.

We constructed factor scales using the factor loadings and compared the results of the pre- and post-surveys. The following variables were used for the different factor scales:

Jobs	Interesting + Useful + Required - Not-take + Job-use + Other-use + Finjob1 + Finjob2
Indifference	Accounting + Statistics + Mathematics + Economics
Challenging	Challenging + Quantitative + Theories
Contents	Decision + Problem solving + Cases + Ethical

In order to be included in the scale, the variable should have high loadings on both pre- and the post-survey factor patterns. We used all variables that had a loading of at least 0.35 (absolute value) for both sets

Exhibit 5. Factor Analysis

Variables with factor loadings in bold are included in the factor scales.

Variables (Question number in parenthesis)	Rotated Factor Pattern							
	Factor 1 (Jobs)		Factor 2 (Indifference)		Factor 3 (Challenging)		Factor 4 (Contents)	
	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Challenging (2a)	-0.138	-0.001	-0.082	0.096	**0.621**	**0.354**	0.055	0.119
Interesting (2b)	**0.575**	**0.620**	0.064	0.157	-0.127	0.392	0.409	0.089
Useful (2c)	**0.422**	**0.459**	0.227	0.051	0.175	0.385	0.452	0.035
Quantitative (3a)	0.064	0.291	0.165	0.145	**0.504**	**0.756**	0.402	-0.034
Theories (3b)	0.144	0.277	0.262	0.189	**0.489**	**0.755**	0.489	-0.074
Decision (4a)	0.138	0.061	0.165	0.074	0.077	0.067	**0.596**	**0.393**
Problem solving (4b)	0.157	-0.024	0.211	0.033	0.188	0.034	**0.500**	**0.381**
Cases (4c)	0.076	0.095	0.089	-0.105	0.008	0.015	**0.489**	**0.605**
Ethical (4d)	-0.029	0.026	0.052	-0.040	0.045	-0.050	0.496	0528
Required (6)	**0.381**	**0.608**	0.145	0.115	0.099	0.283	0.456	0.099
Not-take (7)	**-0.493**	**-0.617**	-0.003	0.039	0.298	-0.031	-0.218	-0.031
Job-use (8)	**0.677**	**0.773**	0.175	0.180	0.180	0.282	0.332	0.021
Other-use (9)	**0.647**	**0.759**	0.101	0.108	-0.047	0.294	0.304	-0.017
Accounting (10a)	0.108	0.063	**0.706**	**0.615**	0.016	0.246	0.173	-0.018
Statistics (10b)	0.047	0.523	**0.708**	**0.816**	0.002	0.126	0.111	0.024
Mathematics (10c)	0.135	0.114	**0.821**	**0.750**	0.039	0.154	0.181	0.005
Economics (10d)	0.118	0.117	**0.665**	**0.735**	0.040	0.005	0.142	0.004
Finjob1 (14)	**0.700**	**0.729**	0.020	0.008	-0.052	-0.041	-0.104	0.041
Finjob2 (15)	**0.674**	**0.724**	0.191	0.120	0.035	-0.041	-0.086	0.055
Variance Explained (%)	32%	42%	33%	27%	24%	24%	10%	7%

of factors. The factor scales had higher values for the pre-survey than the post-survey in all cases. T-tests showed that the differences were statistically significant in all cases.

IV. Implications and Suggestions for Change

The survey results showed that students have mixed perceptions about the introductory finance course. While one group of students found the course to be interesting and useful, many had less than positive feelings. The survey findings suggest that the negative perceptions stem from several factors. The level of difficulty, the pace of course delivery, the challenging nature of the course, and the theoretical and quantitative orientation of the course were cited in written comments in the survey. Correlation and factor analysis also indicate that the same issues are making the students less enthusiastic about the course. Nearly 48% of the respondents in the post-survey indicated that the delivery of the course was fast paced. Further, the students appeared to have turned more negative after taking the course. A majority of the students indicated that they would not take the course if it were not required. This is disturbing and perhaps calls

for changes of the structure and design of the course.

It is possible to argue that the results could be sample specific and may not be generalizable. However, we feel that the sample is large enough and the fact that three different text books, and six different instructors were involved, should make the results broadly applicable.

Our primary motivation is to initiate a debate on the best structure and coverage of the introductory finance course. We offer some suggestions to improve the appeal and efficacy of the course hoping that it would become a better and more useful window into finance for the students.

Course Structure and Coverage: Most business programs offer introductory finance as a three-semester-credit-hour course. While the extent of coverage varies widely, instructors attempt ambitious coverage of topics ranging from financial ratio analysis to capital structure theory and dividend policy (Cooley and Heck, 1996). This would mean covering about 14 to 18 chapters of a typical textbook. As most of the topics covered are new and difficult to the students it would be impossible to do justice to all the topics in a one-semester course structure. Ideally, one would wish for a two-semester, two-course structure similar to the way introductory accounting is taught in many schools. However, given resource constraints and the

overall program requirements, a more feasible approach would be to convert the course into a four-semester hour course. Alternatively, from a practical standpoint, it might be better to reduce the scope of coverage to what is manageable, important and practically relevant. The Cooley and Heck work supported by the student perceptions revealed in this study point out about eight major topics that can effectively be covered in a one-semester, three-hour course. Topics such as risk and return, cost of capital, capital budgeting, and capital structure are certainly important elements of finance to which a business major should be exposed. However, we would suggest keeping the coverage practical and simple. A descriptive, institutional framework is preferable to a formal, theoretical approach.

Course Delivery: Limiting the coverage to the more important and basic topics should enable the instructors to slow down the pace of delivery. It is felt that the objective for the course be set at a lower and attainable level to keep the course "introductory" rather than make it a comprehensive survey covering many major topics. Written comments of many students indicated that they would like more time spent on basic quantitative tools as they are introduced. Finance departments should seriously consider setting up "finance labs" along the lines of accounting labs operating in many schools. The labs can provide extra assistance with quantitative problems and tutorial help. By changing the course into a four-credit-hour course, one hour can be set aside for the finance lab to go over problems and the more difficult topics.

V. Conclusion

This study used a set of two surveys, one at the beginning and another at the end of the semester, of students in three business schools to identify student perceptions about the introductory finance course. The students found the course to be difficult but also interesting and useful. However, a majority of the students indicated that they would not take the course if it were not required. Nearly 88% of the respondents indicated the course was more difficult than other courses taken by them. The students who indicated that the course was challenging and difficult also felt that the course was highly quantitative and involved finance theories.

Factor analysis of the data revealed four distinct underlying factors. One factor loaded on responses such as useful, interesting, and job-related variables. A second factor indicated relative indifference with low loading on all perception responses, positive and negative. Surprisingly, this factor loaded on prerequisite course variables: accounting, statistics, mathematics, and economics. The third factor was one of difficulty and challenge. This factor loaded on responses indicating that the course was quantitative and involved theoretical concepts. The fourth factor indicated concern with the contents of the course and loaded on responses relating to course contents such as decision-making examples, cases and discussion of ethical issues. The four factors explained nearly all the variance in responses used in the analysis.

The best use of the results of this study would be to set a challenge to finance academics to improve the course structure and coverage. As a start, we have offered a few suggestions in the paper. Our suggestions are based on our experience, the Cooley and Heck (1996) work and student responses to the survey. The student responses are essentially supporting material and we do not believe that the students' opinions should be the final or the deciding word on the subject. We feel that limiting the scope of coverage, eschewing the more theoretical aspects of some topics in favor of a descriptive approach, and a slower and more deliberate pace of delivery of instruction would make the course more effective and practically appealing as an introductory course. While our survey was limited to students from three institutions, our discussions with colleagues from other schools lead us to believe that the survey results would be representative of the typical undergraduate student population of many schools. The results of this study should be useful for academics concerned with improving the design, structure and delivery of the introductory finance course taught at the undergraduate level. ∎

References

Berry, Thomas D. and Edward J. Farragher, 1987, "Survey of Introductory Financial Management Courses," *Journal of Financial Education* 16 (Fall), 65-72.

Bertin, William J. and Terry L. Zivney, 1991, "The New Hire Market For Finance: Productivity, Salaries, and Other Factors," *Financial Practice and Education* 1 (No. 1, Spring), 25-34.

Bialaszewski, Dennis, Thomas Pencek, and John Zietlow, 1993, "Finance Requirements and Computer Utilization at AACSB Accredited Schools," *Financial Practice and Education* 3 (No. 2, Fall), 133-139.

Cooley, Philip L. and Jean L. Heck, 1996, "Establishing Benchmarks for Teaching the Undergraduate Introductory Course in Financial Management," *Journal of Financial Education* 22 (Fall), 1-10.

DeMong, Richard F., Laurence C. Pettit, and Billy J. Campsey, 1979, "Finance Curriculum for the Future: Perceptions of Practitioners versus Academicians," *Journal of Financial Education* 8 (Fall), 45-48.

Esmuede, S. J., 1988, "Teaching Techniques and Course Content for International Finance," Paper presented at the Eighth Annual Conference on Languages and Communication for World Business and the Professions, Ypsilanti, MI.

Horvath, Philip A., 1985, "A Pedagogical Note on Inter-Period Compounding and Discounting," *Financial Review* 20 (No. 1, February), 116-118.

Kochman, Ladd M., 1986, "Intra-Year Discounting: Uses and Misuses," *Journal of Financial Education* 15 (Fall), 12-16.

McWilliams, Victoria B. and Coleen C. Pantalone, 1994, "Structuring the Finance Curriculum: A Survey," *Financial Practice and Education* 4 (No. 1, Spring/Summer) 37-46.

Paulsen, Michael B. and James A. Gentry, 1995, "Motivation, Learning Strategies, and Academic Performance: A Study of the College Finance Classroom," *Financial Practice and Education* 5 (No. 1, Spring/Summer), 78-89.

Rubash, Arlyn R., 1994, "International Finance in an International Environment," *Financial Practice and Education* 4 (No. 1, Spring/Summer), 95-99.

Sihler, William W., 1993, "Teaching Finance: Trends, Developments with Reflections on Executive Education in Finance," *Financial Practice and Education* 3 (No. 1, Spring/Summer) 47-52.

Strickler, L., 1989, "Undergraduate Financial Education Patterns," *Journal of Financial Education* 18 (Fall) 208-21.