Assessing an Undergraduate Investments Class Project

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Abstract

An assessment of learning study is undertaken in an undergraduate Finance Investments class. The focus is on a required project report that constitutes 20% of the class grade. The goal of the project is to perform Fundamental Analysis on an assigned firm and recommend whether or not to invest in its common stock at this time. The assessment endeavor starts in Summer 2007 by deciding on the rubric to use for this study. Next one section (an evening class) is analyzed with the rubric as a pilot study in Fall 2007. From the pilot, two improvements are attempted in the Fall 2008 Evening class, and the Morning section is also analyzed. The study closes with a proposed action plan for improving the learning experience in both sections of Investments in future semesters.

Keywords: assessment, investment class, project

1. Introduction

In the undergraduate Investments class that we teach, each student has to submit a written project as part of the class requirement. In the first week of class, an outline of the project expectations is handed out (see Appendix A). At the same time, each student is assigned a specific company. The only criteria for selection is the firm should be an U.S. based Fortune 500 firm, that was not assigned to a student in the prior year. In the second week, one class meeting is held in the Library. This is a mandatory attendance meeting, as at this time, the Business College Liaison addresses the class to inform them of all the resources available to help the students complete the project. While some of the students are quite well informed – for the majority – it is a revelation to realize the wealth of information that is available – especially on specific industrydata.

2. The Learning Experience

The end-goal of the exercise is for the student to recommend whether an investor should purchase the assigned firms' common stock at this time. Each student is expected to perform Fundamental Analysis, though they are permitted to use Technical Analysis to support their recommendation, if they so choose.

Since we first started teaching Investments – both at the undergraduate and graduate level – a primary learning goal for every student has been to learn how to research and value a firms' common stock. We want them to understand how a company is valued in the marketplace within the context of its industry and the economies in which it operates. The undergraduate project takes a look at only the U.S. domestic economy; the graduate project has higher expectations.

In the undergraduate class – first they have to choose 3 to 5 macroeconomic variables and using that data, report on the last year's state of the U.S. economy. Next, they have to collect financial ratios of the primary industry of their firm, as designated by NAICS codes (North American Industry Classification System). Lastly, they have to collect the last 3 years of the same financial ratios data for their firm. They have to perform a trend analysis of the firms' ratios and report on it. The last year's ratios are to be compared to the industry and the relative performance judged.

Thus, a student has to choose to either perform top-down or bottom-up analysis, and focus on the state of the economy, the state of the industry and the firm's financial performance in the recent past. After describing the past, they have to focus on the immediate future. They have to research sources, based on which they present their expectations of the conditions that will influence the performance of the economy, the industry and the firm

over the following 12 months. A few weeks in to the semester – we show the class an example of an outstanding project that has been submitted by a previous student, making sure not to have assigned any student a firm in the same industry as the demo project.

3. Assessment–The Beginning

In Summer 2007, we put together a project rubric. In all our combined years of teaching, we had always known what was an A project, what was a B and what an F! At the beginning of each semester, we would tell the students how the project report would be graded. For example, that 20% of the project report grade was for analyzing the economy – 10% for reporting on the past 12 months and 10% for their predictions of the next 12 months and so on. Thus, the rubric was just a manifestation – of how we were grading the project all along (see Appendix B). However, we had never before thought about tracking the individual components – and thus, focusing on improving the learning experience of the class. This has been, we believe, the most valuable lesson that we have learned from this assessment endeavor.

In recent years, we have generally had two sections of Investments in the Fall semester, one morning and one evening section. As with most classes, the morning section is primarily traditional students and the evening primarily non-traditional students. In looking through our class records, we realized that the evening section has been generally a smaller class size. Hence we decided to focus on the evening section of the Fall 2007 semester as our pilot study class.

4. The Pilot Study

In Fall 2007, the evening section of Investments had 22 students enrolled, 20 of whom submitted project reports for grading. Now occasionally, some student will just not hand in a project and take a zero for that part of the class. Two students not doing the project in the same class though is a rarity.

Table 1 shows the rubric data for the class. As we had not collected this kind of data before – we had to start off this assessment project with these scores as our baseline.

Table 1. Fall 2007: investments – evening section

STDT	E-P	E-F	I-P	I-F	F-P	F-F	ANL	GR	TM	TOTAL	GRADE
1	10	10	10	10	10	10	20	10	10	100	A
2	10	10	10	10	10	10	18	10	10	98	A
3	10	10	10	10	10	8	18	8	10	94	A
4	10	10	10	8	10	10	18	8	10	94	A
5	10	10	10	10	9	8	18	8	10	93	A
6	10	9	10	10	8	10	18	8	10	93	A
7	8	10	10	8	10	10	18	8	10	92	A
8	10	8	10	10	6	10	18	7	10	89	B
9	10	10	10	10	8	9	18	8	5	88	B
10	10	10	10	8	10	8	16	5	10	87	B
11	10	10	8	8	8	8	16	8	10	86	B
12	10	10	10	7	7	8	16	7	10	85	B
13	10	8	8	8	8	8	16	9	10	85	B
14	9	9	8	8	8	7	16	10	10	85	B
15	10	7	8	10	10	8	14	8	10	85	B
16	10	9	8	8	8	8	14	8	10	83	B
17	10	7	9	8	8	8	14	6	10	80	B
18	10	8	7	7	6	8	16	8	10	80	B
19	8	8	6	6	6	7	16	9	5	71	C
20	10	8	6	6	8	6	8	8	5	65	D
21	0	0	0	0	0	0	0	0	0	0	F
22	0	0	0	0	0	0	0	0	0	0	F
AVG	8.9	8.2	8.1	7.7	7.6	7.7	14.8	7.3	8.4	78.8	C

KEY:		
E-P	=	U.S. Economy - Past 12 months
E-F	=	U.S. Economy - Future 12 months
I-P	=	Industry - Past 1 year
I-F	=	Industry - Future 1 year
F-P	=	Firm - Past 3 years
F-F	=	Firm: Future 1 year
ANL	=	Analyze the data collected
GR	=	Correct spelling, grammar usage, etc.
TM	=	Whether submitted on time - or late!

The overall class average being in the range of a C+ (78% to less than 80%) matched prior class results. In looking at the individual components – some parts were obviously weaker than others. For example – an average of 74% for the analysis definitely needed improvement.

After due deliberation, we decided to focus on achieving two measures of improved learning for the next class based on the rubric assessment:

1). Improve the overall class average to a B.

2). Improve the class analysis average to 80% (demonstrated by an Average of 16 out of a possible 20 points).

Prior research, for example, Davis (1999) and Sass (1989) reinforce the fact that focusing on grades is not a laudable goal. Hence, we wish to emphasize that our attempt to raise the grade – whether the overall grade or a component within – is appropriate as it is a direct manifestation of an increase in class learning. For example – if the class grade improves to a B, it would be due to an increase in component grade points. The *only* way for a student to earn higher points – is if he or she were to have learnt how to research and report on a particular component as required by the task (refer to the scale of grading each component in Appendix B).

It is true that these above were not the only areas that could use improvement. The ultimate goal of this assessment project will be to focus on *each individual component being an average score of B* – and continuing to focus on maintaining that level of achievement going forward.

5. Closing the Loop

In Fall 2008, we decided to apply the rubric assessment to both sections of Investments that were being taught that semester. The Morning section had 41 students while the Evening section had 26 students.

While the specific goals for improvement could only be applied to the Evening class, we would have a baseline for the Morning section and could target improvements in future sections. Also, we would be able to take a closer look at whether there were components where one section was outperforming the other – and then reflect on ways and means of possible transference to improve the lagging section.

The rubric data for these two sections are presented as Table 2 for Fall 2008 Evening section and Table 3 for Fall 2008 Morning section.

Table 2. Fall 2008: investments – evening section

STDT	E-P	E-F	I-P	I-F	F-P	F-F	ANL	GR	TM	TOTAL	GRADE
1	10	10	10	10	10	10	20	8	10	98	A
2	10	10	10	10	10	10	20	10	5	95	A
3	10	10	10	10	8	10	16	8	10	92	A
4	10	8	10	10	8	10	16	9	10	91	A
5	10	10	10	10	10	10	16	9	5	90	A
6	10	8	10	8	10	8	17	8	10	89	B
7	10	10	10	10	8	10	16	8	5	87	B
8	10	10	6	10	10	10	12	7	10	85	B
9	10	10	10	10	6	8	17	9	5	85	B
10	10	10	6	10	6	10	14	8	10	84	B
11	10	10	10	10	7	8	16	8	5	84	B
12	10	8	8	8	8	8	16	8	10	84	B
13	10	10	6	10	8	10	16	6	5	81	B

14	10	10	3	8	8	8	16	8	10	81	B
15	10	10	5	10	5	10	18	8	5	81	B
16	10	10	7	8	7	8	17	8	5	80	B
17	10	10	8	8	10	8	12	9	5	80	B
18	10	10	6	8	8	8	16	9	5	80	B
19	10	8	6	8	6	6	14	8	10	76	C
20	10	8	6	6	7	7	12	9	10	75	C
21	10	0	8	6	8	6	14	9	10	71	C
22	10	4	8	8	6	8	16	10	0	70	C
23	8	0	9	7	8	7	14	6	10	69	D
24	10	2	8	0	6	7	14	9	10	66	D
25	6	6	5	6	7	8	12	3	10	63	D
26	8	0	7	5	8	8	10	5	0	51	F
AVG	**9.7**	**7.8**	**7.8**	**8.2**	**7.8**	**8.5**	**15.3**	**8.0**	**7.3**	**80.3**	**B**

Table 3. Fall 2008: investments – morning section

STDT	E-P	E-F	I-P	I-F	F-P	F-F	ANL	GR	TM	TOTAL	GRADE
1	10	10	10	10	10	10	20	10	10	100	A
2	10	10	10	10	10	10	20	10	10	100	A
3	10	10	10	10	10	10	20	8	10	98	A
4	10	10	10	10	10	10	18	10	10	98	A
5	10	10	10	10	10	10	18	10	10	98	A
6	10	8	10	10	10	10	20	9	10	97	A
7	10	10	10	10	10	10	14	10	10	94	A
8	10	8	10	10	10	10	16	10	10	94	A
9	10	10	10	10	8	10	17	8	10	93	A
10	10	10	10	10	10	10	20	8	5	93	A
11	10	10	10	10	10	10	20	8	5	93	A
12	10	10	10	10	10	10	17	9	5	91	A
13	10	10	9	10	10	10	20	6	5	90	A
14	10	9	8	8	10	10	18	7	10	90	A
15	10	10	8	10	6	10	17	9	10	90	A
16	10	10	9	8	7	10	18	8	10	90	A
17	10	10	10	10	10	10	16	8	5	89	B
8	10	8	8	10	10	10	18	9	5	88	B
19	10	10	10	10	10	7	15	9	5	86	B
20	10	10	10	10	6	10	17	8	5	86	B
21	9	10	6	10	5	8	16	10	10	84	B
22	10	10	8	8	8	8	16	9	5	82	B
23	10	10	6	10	5	9	16	6	10	82	B
24	10	10	7	6	7	6	16	10	10	82	B
25	10	6	7	8	7	8	16	8	10	80	B
26	10	7	10	10	10	10	15	8	0	80	B
27	10	10	10	10	6	8	12	9	5	80	B
28	10	10	8	7	6	7	16	6	10	80	B
29	10	7	7	8	8	7	16	8	5	76	C
30	10	9	6	8	8	10	17	8	0	76	C
31	10	7	6	8	8	8	15	8	5	75	C
32	10	8	8	7	6	6	12	8	10	75	C
33	10	10	6	8	6	8	18	9	0	75	C
34	10	3	6	10	8	8	16	8	5	74	C
35	10	9	10	10	4	6	14	8	0	71	C
36	5	5	8	6	9	9	15	8	5	70	C
37	10	10	7	6	6	6	12	9	0	66	D
38	8	8	6	6	6	6	10	6	10	66	D
39	10	8	10	6	8	6	12	6	0	66	D
40	10	3	10	3	8	4	14	5	5	62	D
41	10	8	6	2	6	6	14	8	0	60	D
AVG	**9.8**	**8.8**	**8.5**	**8.6**	**8.1**	**8.5**	**16.2**	**8.2**	**6.4**	**83**	**B**

6. Results

In examining Table 2, it is seen that the overall class average for the Evening has improved to a B, though barely. It would not be prudent to celebrate prematurely – especially given the narrow margin by which this mark has been achieved. We have to work on encouraging the class to pay attention to their work – so that this average can continuously keep improving.

The class average for analysis has failed to improve to 80%, though it has improved slightly – from 74% in Fall 2007 to 76.5% in Fall 2008 – a 3.4% improvement. We shall have to reflect on ways and means, to get the class to focus on doing a better job of analyzing the data that they have collected.

Figure 1 uses histograms to compare the 2007 performance to 2008. While a little progress has been made, we still have to work harder to help the students to help themselves.
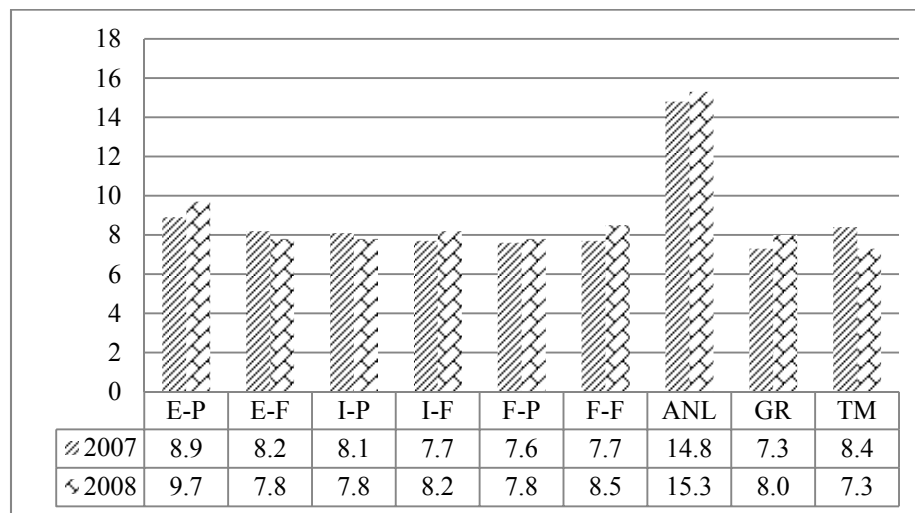
	E-P	E-F	I-P	I-F	F-P	F-F	ANL	GR	TM
2007	8.9	8.2	8.1	7.7	7.6	7.7	14.8	7.3	8.4
2008	9.7	7.8	7.8	8.2	7.8	8.5	15.3	8.0	7.3

Figure 1. Evening 2007 vs 2008

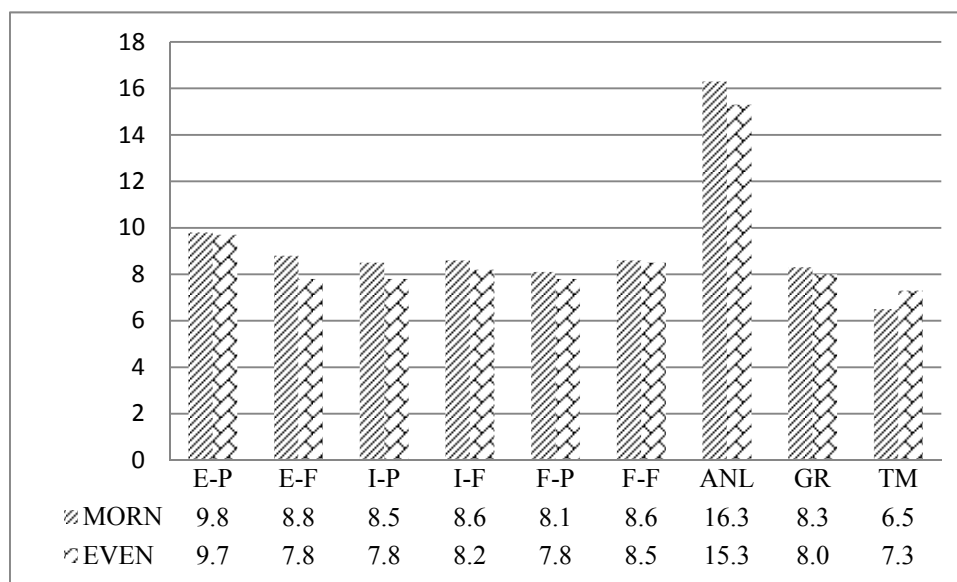|	E-P	E-F	I-P	I-F	F-P	F-F	ANL	GR	TM
MORN	9.8	8.8	8.5	8.6	8.1	8.6	16.3	8.3	6.5
EVEN	9.7	7.8	7.8	8.2	7.8	8.5	15.3	8.0	7.3

Figure 2. 2008 Morning vs evening

Key:

E-P / I-P / F-P = U.S. Economy / Industry / Firm – Past 12 months.

E-F / I-F / F-F = U.S. Economy/ industry / Firm – Future 12 months.

ANL = Analyze the data collected.

GR = Correct spelling, grammar usage, etc.

TM = Whether submitted on time.

Table 3 shows that the Morning section overall project average is higher than the Evening section - 83.4% versus 80.4% - a 3.9% higher score. The Morning section has a higher average across the board – except for the average on Timeliness of submission. This is not surprising – as typically non-traditional students are more likely to meet early deadlines.

Figure 2 emphasizes that the Morning section has outperformed the Evening section on every component – except for Timeliness of submission. Some of the scores though are very close, for example, the 12 month prediction for firm performance (F-F) is 8.6 for the Morning section and 8.5 for the Evening section. One set of data, though, is insufficient to make generalizations. We will have to continue collecting the data and build up a time-series of Morning and Evening classes project performance for comparative and evaluative purposes.

7. Continuing to Close the Loop

One of the accompanying benefits of doing this assessment has been the fact that we have spent quite some time ruminating over what else could we do as instructors – to help the class understand the requirements and improve their learning of what entails a quality company analysis report.

While the notion that we 'learn from our mistakes' is a statement that we would have agreed to and accepted as a truism, recent research that we read (Chialvo & Bak, 1999; Yerushalmi & Polingher, 2006) helped us formulate a proposed action that we intend to implement in our future Investments classes. All along we have always shown the class an example of what constitutes a great report. Then, over the course of the semester – this demo report resides in our offices and every student is welcome to stop by and visit with it. However, in future we shall also display what constitutes a **bad** project – either a C or a D effort. It is our hope – that pointing out some of the common errors and emphasizing how many points that costs – will stick in a students' mind – *such that she or he can learn from another students' mistake*!

The data provided by the 2008 rubrics leads us to focus on the following actions to continue improving the class learning experience:

Evening section:

1). Maintain the overall class average at a B.

2). Focus on improving the class analysis average to 80% (demonstrated by an average of 16 out of a possible 20 points).

Morning section:

1). Improve the overall class average to 85.0.

2). Improve the class average for Time variable to 8.0.

In the future, we will continue assessing both sections project reports with the present rubric – and work hard to energize and motivate each and every student to learn over the semester how to put together and submit an A project report.

Acknowledgement

References

Chialvo, D. R., & Bak, P. (1999). Learning From Mistakes. *Neuroscience, 90*, 1137–1148. http://dx.doi.org/10.1016/S0306-4522(98)00472-2

Davis, B. G. (1999). *Tools for Teaching.* San-Francisco, CA, Jossey-Bass.

Sass, E. J. (1989). Motivation In The College Classroom: What Students Tell Us. *Teaching of Psychology, 16*(2), 86–88. http://dx.doi.org/10.1207/s15328023top1602_15

Yerushalmi, E., & Polingher, C. (2006). Guiding Students to Learn From Mistakes. *Physics Education, 41*, 532–538. http://dx.doi.org/10.1088/0031-9120/41/6/007

Appendix A

Investments Fall 2007

PROJECT REPORT GUIDELINES:	Points
1. Economy	
a) Examine state of U.S. economy for 2006	10
b) Estimate economy for next 12 month period	10
2. Industry	
a) Look at the state of industry for 2006	10
b) Estimate industry (sales, profitability, etc.) for next 12 month period	10
3. Firm	
a) Look at firm performance for last 3 years	10
b) Estimate firm performance for next 12 month period	10
4. Analysis and data interpretation	20
5. Presentation	
Cover page, table of contents, title, introduction, headings,	
sub-headings, correct grammar and spellings, references, etc.	10
6. On-time submission (**DUE DATE: NOVEMBER 24, 2007**)	10
Total	100

Appendix B

Investments - Project Rubric

NAME:				SEMESTER:			
ASPECT							
	MISSING	ALMOST MISSING	SLIGHT BELOW	AVERAGE	ALMOST CORRECT	AS REQD.	POINTS
	0	2	4	6	8	10	
ECONOMY - PAST							
ECONOMY - FUTURE							
INDUSTRY - PAST							
INDUSTRY - FUTURE							
FIRM - PAST							
FIRM - FUTURE							
ANALYSIS * 2							
GRAMMAR ETC.							
ON TIME							
TOTAL							
GRADE							

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