EVIDENCE THAT MASTERS OF BUSINESS ADMINISTRATION (MBA) STUDENTS ARE BETTER PREPARED FOR CORPORATE STRATEGIC PLANNING THAN MASTERS OF SCIENCE IN ACCOUNTING (MSA) STUDENTS

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ABSTRACT

Numerous surveys and discussions with CEOs, CFOs and other business leaders have verified that there is a common perception that accountants are better trained for successful careers in public accounting than for successful careers inside the corporate environment. This finding is disturbing because 90% of accounting professionals operate in corporate America. Corporations make the business case that cost cutting activities and global competitive pressures intensify the need for their newly hired accountants to "hit the ground running." Using a case study employed both in the MSA and the MBA advanced managerial accounting classes, this paper provides empirical evidence that students in the MBA program outperform their MSA counterparts when analyzing a routine capital budgeting project, indicating more developed analytical skills in the MBA group. This research contributes to the literature by exposing a significant gap between the initial preparedness of MSA students for corporate America's financial departments and that of MBA students. Since the skills lacked by MSA students are sought by corporate executives, educators should focus additional attention on adding to the curricula instruction and problem sets that result in the MSA student being better prepared for success in the corporate strategic planning environment.

Keywords: Accounting student preparation, Full (Life)-cycle accounting, Capital budgeting, Net Present Value, Internal Rate of Return

Introduction

A joint research project of the Institute of Management Accountants (IMA) and the Financial Executive Institute (FEI) identified the accounting knowledge and skill areas (AKSAs) that business executives considered important to success for entry-level accountants. They also

identified the AKSAs where the executives found the entry-level accountant to be the most deficient. The IMA defined the difference between each AKSA's perceived value and the extent to which the entry-level accountants were judged to be deficient in that AKSA as a "preparation gap." The identified area with the largest perceived preparation gap was in the area of budgeting (IMA and FEI, 1994). The IMA followed up that study with a review of the changing role of the management accountant from scorekeepers to business partners. They identified the increasing need for accountants to have good long term strategic planning and analytical skills (IMA, 1999).

Albrecht and Sack (2000) under the auspices of the AAA, AICPA and the IMA surveyed accounting educators and accounting practitioners. Their survey indicated that only about 6% of them would get a Master's of Science in Accounting (MSA) degree if they could start their college careers over. These educators and practitioners indicated that they would overwhelmingly seek a Masters in Information Systems or an MBA. This result indicates that practitioners, 90% of whom do not work in public accounting, would broaden their skills rather than concentrate in Master's level accounting. Finally, in the CFO journal, a practitioner journal for CFOs, McCann finds that major CFO recruiting firms indicated that the pendulum that swung to CPAs for CFO hires during the Sarbanes-Oxley implementation, is swinging back to MBAs with broader education and finance perspectives in 2007 and early 2008 (2008).

In summary, the perception that accounting students are not as well prepared for success in Corporate America has been surveyed and discussed for at least the last 35 years. This preparation gap is especially pertinent to the companies who employ entry level accountants and expect them to be top performers in a short period of time.

This study provides empirical evidence that, at least initially, the MBA students are better prepared than the MSA students for participating in the capital budgeting decision making. Employees viewed as having the better analytical skills by management will likely have better career opportunities in the strategic planning groups. Since the skills lacked by MSA students are sought by corporate executives, they may begin to fill typical "accounting" jobs with non-accountants, such as MBA students. Although effort has been made by several institutions to add elements of analysis and critical thinking to the accounting curriculum, it appears as though these efforts have not been without their challenges. Educators should focus additional attention on adding to the curriculum instruction and problem sets that result in the MSA student being better prepared for success in the corporate strategic planning environment.

The next section describes the case study used for the empirical tests to determine if there is evidence of a "preparation gap" between the MBA and MSA students as indicated in the FEI survey. If this preparation gap exists, accountants will have a more difficult time transitioning out of the financial reporting area and into the corporate planning environment, the training ground for upper levels of management.

Literature Review

The CPA Journal (2008) discusses how the new increased hours requirements reflect the expanded role accountants play in business. The article emphasizes how educators and practitioners have traditionally disagreed on what accounting graduates should know and whether they are prepared for the business world. Susan Hamlen, Chair of Accounting at SUNY Buffalo, discusses the accounting curriculum and states that we need to develop students who can "step back and think." In addition, Sharon Burnett (2003) surveyed employers and found that analytical/critical thinking skills were among the four top professional skills desired.

Bob Hurt (2007) suggests an accounting curriculum that would include courses on essential skills, including critical thinking. He states, "The development of critical thinking skills is of primary importance for future accountants." Recent research has verified this sentiment. According to Kavanagh and Drennan (2008), employers are expecting graduates entering the accounting profession to have as the top three skills analytical/problem solving skills, a level of business awareness or real life experience and basic accounting skills. In fact, Hunton (2002) argues that many traditional accounting tasks can be reliably automated, supporting claims that an accountant's value is now increasingly reflected in higher-order skills, such as critical-thinking, problem-solving and analytical skills.

The Changing Environment Committee of the American Accounting Association (AAA) issued a report recommending that business schools prepare accounting students to have skills and knowledge of both GAAP and non-GAAP financial measures. They report that…"companies are looking for analysts, someone who can help make sense of accounting numbers, not just produce the accounting numbers" (1998). However, the Accounting Education Change Commission (AECC) of AAA reported that the increasing changes in rules, regulations, and accounting complexities resulted in accounting programs having less time to teach the conceptual application of the accounting rules (1999).

Nonetheless, several universities have embarked on a quest to alter the curriculum to better prepare the accounting student for the workforce. For example, by signing the Bologna Declaration in 1999 European Union countries took on the challenge of synchronizing their higher education systems through the establishment of the European Higher Education Area (EHEA). One of the main goals of the development process has been the reduction of the gap between higher education programs and the requirements of employers (González, J., *et al.*, 2005). Braun (2004) states that accounting educators worldwide are being encouraged to improve the curriculum to include skills outside of technical accounting. She investigates the steps that business educators are taking to improve critical thinking and the effectiveness of such methods. Braun concludes that much progress has been made in critical thinking skills development within the business curriculum but that additional work needs to be done. DeLange et al (2006) suggest that there needs to be greater emphasis in the curriculum on skills other than those that are technical to improve graduates' performance in the workplace. The

study indicates, however, that the existing accounting undergraduate program is failing to combine technical training with a nontechnical skill set needed to be successful in the accounting profession. Due to the full undergraduate accounting curriculum the authors suggest that professional accounting bodies be more involved in providing technical skill development to young accountants while university educators concentrate on a broader course structure that enhances the educational experience and the development of generic skills of accounting graduates. Supporting this observation is the evidence from this study several years later that there remains a disconnect between what employers want and what most accounting curricula provides.

This study adds to the literature by providing empirical evidence of a still existing preparation gap of entry level accountants as identified by the IMA and FEI in 1994. Although several years have passed and many institutions have implemented initiatives to reduce this gap, it remains. The case study focuses on the capital budgeting task since it is one of the many projects with which an accounting professional may regularly be involved during his/her career. In addition, the capital budgeting process is one that requires those involved to employ analytical skills to derive a successful plan for the company.

Methodology

Case Study Review

A case study was used to garner information regarding the preparedness of accounting students as they get ready to enter the workforce. Cooper and Morgan (2008) confirm case study as an effective research approach in dramatizing theoretical issues and improving communication of important insights to practitioners.

Elliott, Hodge, Kennedy and Pronk (2007) investigate the appropriateness of using of students to proxy for professionals. Specifically, they test the appropriateness of using Masters in Business Administration (MBA) students as proxies for nonprofessional investors. The authors use tenets of social psychology to examine individuals' ability to integrate acquired information into their decision-making processes. Elliott et al (2007) conclude that more experienced MBA students, specifically those taking a financial statement analysis course, reflect judgments and decisions requiring high levels of integrative complexity that are similar to those of investors. As such, they can proxy for professionals in the workforce. They also conclude that early MBA students may not be a good proxy if the task requires decision making requiring high levels of integrative complexity.

In the current study, we use graduate students to proxy for entry-level business professionals. As experienced MBA students' analysis skills are expected to be more developed than an entry level professional without the experience of an MBA program, the MBA sample in the current study only include first year MBA students. This results in biasing the study away from finding differences in performance level between the two groups. The MBA students proxy for non-

accounting background entry level professionals performing a typical accounting task. The MSA students in the current study proxy for entry-level accounting professionals. As such they all possess an accounting degree and, on average, less than one year of accounting work experience.

One of the most important annual strategic activities that takes place in large corporations is capital budgeting decision making to meet long-term strategic objectives. The divisions submit potential capital projects to the centralized corporate planning group to be rejected or recommended for ultimate approval by the board of directors. Capital projects classified such as "stay in business" or 'environmental pollution abatement" may be approved without the normal financial measures such as Net Present Value (NPV), Internal Rate of Return (IRR) and payback period calculations, but ongoing capital projects are commonly approved using these metrics. To test whether there is a difference between the analytical performance of the MSA and MBA students, part one of a three part hypothetical case study, specifically developed for first session MBA and MSA classes, is used to measure the relative performance of the two groups. The case draws on their skills to realize when NPV and IRR cash flow techniques are more appropriate for assessing economic viability rather than GAAP accounting techniques that are based on matching expenses and revenues. The case asks the students to assess the economic viability of an apartment building project. We categorize these assessments by the heuristic that the students used to make their assessments. If the student used financial measurements techniques like NPV, IRR or payback period, their assessment was categorized as "used TVM techniques". If they used GAAP accounting ROA measurement techniques, their assessment was categorized as "used GAAP accounting".

The hypothetical case, ABC company (see Appendix A), exposes the weakness of GAAP accounting's matching principle when long-lived assets have extended construction periods and uneven cash flows. The case involves full (life)-cycle accounting. Full cycle accounting refers to accounting for a project from the time the first dollar is spent until the project is sold and all cash transactions have been completed.

As such, students are provided with limited nonfinancial information about the company so that their attention is geared toward analyzing the company based on the financial information provided. The student is given very simple data to account for the opening of the business with $1 million at the beginning of yr $_t$ and the immediate transfer of the $1 million to a builder for construction of an apartment building; the building takes a full year to construct and lease. In fiscal years $t_{+1, +2, +3,}$ they operate the building for three years making $125 thousand of income and $175 thousand of cash flow each of the three years, respectively. In year t_{+4}, they sell the building on January 1. To simplify the case, the building is depreciated straight line over 20 years (no book to tax adjustments) and sold at book value (no gains or losses). Further simplifying the accounting challenge, all current year operating revenues and expenses, including taxes, are received and paid at the end of each operating year. The assumed tax rate (50%) can be calculated from the $250 thousand gross profit and $125 thousand tax expense. An accounting

student should be able to prepare the given balance sheets, income statements, and cash flow statements for ABC in the early part of their undergraduate introductory accounting course. At this point, the students are asked, "Was the apartment a good purchase for ABC?" There are no parameters given for "good." If the MSA or MBA students use GAAP income to arrive at their assessment, they will try to answer the question using a GAAP income heuristic that is more focused on matching revenues and expenses and ignores time value of money (TVM). If the MSA or MBA students use a TVM heuristic, they will discount the cash flows to arrive at an IRR and/or a proposed NPV. Hidden in the case is a test to determine if the students perceive the correct cash flow timeline: 1) The length of time between the payment to the developer in year t_1 and the first receipt and payment of cash in year t_2 is 730 days and, 2) the period between the receipt of cash in year t_3 and the sale of the building in year t_4 is one day. If the students just consider the cash flows from the GAAP cash flow statements, they will ignore the two year period between the payment of cash for construction and the receipt of cash in t_2. Also, they will discount the cash from the sale of the building in year t_4 as if it happened on the last day of year t_4.

Although not a part of the empirical tests in this paper, to help in the exposition of the weakness of GAAP income when the element of time and uneven cash flows are introduced, the companion cases to ABC Company are discussed next. The XYZ Company's (see Appendix B) asset is changed to a stadium that has the same cost, depreciation, sale, income and cash flow stream as ABC Company. The only difference between the two cases is that the ABC apartment took one year to build and the XYZ stadium took three years to build, all other parameters are the same. The GAAP capitalization rules require that all expenditures for the building and stadium be capitalized during the construction period, therefore, the GAAP accounting results show the full-cycle net cash flow and net income of the ABC and XYZ to be equal. However, from a time value of money perspective, the two projects are clearly not equal. This disconnect between GAAP and economic reality causes business planners in corporate America to develop their own systems to track the economic returns from the projects.

A third part of the case study ABCXYZ (not shown) is a scenario that combines the two projects, and asks the students about the economics of both projects. Since the students have been given a 12% discount rate to be used throughout the rest of the semester after the ABC review, the students with a better grasp of NPV will realize that both projects started on the same day, so they can simply add the two individual NPVs together to get total NPV for ABCXYZ. The students with a lesser grasp of NPV will "recreate the wheel" by calculating the NPV from scratch. The wrap-up of the three part case leads into discussions about the following:

1) Why do we depreciate buildings for public reporting when there is no long term history of them going down in value, in fact, they generally go up?
2) What is the effect of depreciation on cash flow for each year?
3) If these projects were projections, what capital budgeting financial techniques would have been used in 1997?
4) How does the Capital Asset Pricing Model (CAPM) fit into full-cycle accounting?

5) For the MSA classes, how do the fair value and impairment rules limit the time that capitalization can window dress the income statement?
6) Describe instances where GAAP discounts cash flows (notes payable, notes receivable, bonds payable, capital leases, etc.).

Demographics of Students

A sample of 274 Masters of Science in Accounting (MSA) students were drawn from students attending advanced managerial accounting classes at a southeastern university. The MSA students attended 65 different universities for their undergraduate degrees. The majority of the MSA students were completing the 150 hour requirement to sit for the CPA exam. Although they all majored in accounting as undergraduates, their concentrations are in Audit, Tax and to a lesser extent Management Accounting. They generally have less than one full year of actual work experience in accounting.

A sample of 247 Masters of Business Administration (MBA) students was also drawn from students attending advanced managerial accounting classes for non-accounting majors at the same southeastern university. Since these classes do not qualify for the 150 hour CPA requirement, they are not attended by CPA aspirants. The MBA students attended 88 different universities for their undergraduate degrees. Their undergraduate majors tend to be in finance, marketing, management and information systems. There are a small number of students from the engineering and healthcare fields, but they have taken some business prep courses. MBA students attending the Professional and Executive MBA classes were excluded from the sample. Professional and Executive MBA students were excluded since they tend to be older and have much more work experience than the MSA students. Excluding these students from the MBA sample eliminates a bias towards finding a difference in performance level between the two groups. Data for this study was collected over a three year period.

The Empirical Test

Each student was given the ABC Company case (Appendix A). They were given thirty minutes to answer the question, “Was the apartment building a good purchase.” There were no hints given for what “good” means. The goal was to determine which students would recognize that the uneven cash flows and extended time for construction require the use of financial techniques such as IRR and NPV, versus those who use an inappropriate GAAP heuristic such as return on assets that is based on GAAP’s matching requirement for revenues and expenses. The students turned in an answer sheet containing their assessment of the “goodness” of the project. These assessments were sorted into a (1) “used GAAP Accounting technique” if the student used a return on asset heuristic or (2) “used Financial Analysis technique” if the student used a discounted cash heuristic. If the student used both heuristics, the assessment was included with the financial technique results. Since there had been no discussion of an appropriate cost of

capital or discount rate at this stage, we expect the "used financial analysis student" will at least calculate the IRR, but not necessarily an assumed NPV.

The test data were captured over a three year period as part of classroom instruction. As done with all mini cases in class, the students know their responses will be summarized on the board. The open dialogue of responses is an attempt to solicit their best effort by drawing on the natural competitiveness these students bring to class; they all want to uphold their respective university, which we share as part of an ice-breaker exercise.

The nonparametric Chi. Sq. independence test statistic was used for empirical testing purposes. The Chi. Sq. independence test empirically tests the probability that two or more groups perform the same on one or more categorical variables. The resulting X^2 statistic measures the probability that the groups performed the same on a variable. The larger the X^2 statistic, the more likely the different groups did not perform the same on a variable. The Chi sq. test requires measuring the observed frequencies (see Table 1) against the expected frequencies (see Table 2). The larger the difference between the observed frequencies and expected frequencies, the larger and more statistically significant the X^2 statistic. If the calculated X^2 statistic exceeds the critical X^2 statistic, we can reject the null hypothesis of no difference in performance.

Since the "preparation gap" identified by the FEI and IMA suggest that the accounting majors (MSAs) are less prepared for capital budgeting activities than the other business majors (MBAs), our first hypothesis is that the MBAs will use the appropriate NPV, IRR financial techniques significantly more often than the MSAs. The null hypothesis tested is:

H1: There is no difference between the heuristic used by the MSA and MBA students.

When the first test results indicated that there was substantial empirical evidence that the MBA students outperformed the MSA students, a second experiment was performed to determine if a pre-treatment mini case given to a new set of MBA and MSA students would narrow the performance gap between the two groups.

For the second experiment, the pre-treatment mini case, "Which Agent Did the Best (Appendix C)" was given to the new sample of MBA and MSA students. Although not directly related to the ABC Company case required skills, it is a refresher case on how to think about NPV. The mini case involves two sport agents getting a first and second round draft choice, respectively. The student is required to focus on the relevant data which results in a basic question, "is getting $10 million today better than getting $50 million 40 years in the future. The students with the better grasp of financial analysis techniques will calculate an annual interest rate (4.2%) that makes the two parties economically indifferent. Then they will propose an expected return rate based on some prior experience. They will also realize that the $15 million in salaries is not relevant to the question. The students with a lesser grasp of financial analysis techniques will

focus on issues like the athletic dying, wasting their money, etc. The students work in teams and are aware that their answers will be summarized on the board.

Also for the second experiment, the ABC case experiment is moved back to the third class session to reduce the possibility of getting demand effects from the "Which Agent Did the Best" case. The students were told during the get acquainted moments that in-class mini cases could be about anything that they were introduced to in their undergraduate accounting classes; that there is no linear buildup of subject matter for mini cases. The students are also told they are expected to recognize what analytical tool they need to employ in the mini cases. For the second class session the students are introduced to the "Baron Coburg" case (Anthony, Hawkins and Merchant, 2007). The Baron Coburg case is about setting performance measurement metrics for one year data; a completely different subject from the ABC Company case. The ABC case is then tested in the third class session.

Also, from the post treatment data, in addition to capturing whether the students used a financial analysis (NPV, IRR) or GAAP (ROA) heuristic, we also capture data that allowed us to assess how skilled each group was in perceiving the correct cash flow timeline. We expect that the MSAs will be less skilled at calculating the correct cash flow time lines. For instance, the sale and receipt of cash for the building took place on the first day of 2001. For GAAP accounting purposes, it is appropriately recorded on the books in 2001. However, if the cash flow is entered as a separate cash flow in calculators or spreadsheet programs without making a "beginning of year" adjustment, the cash flow will be calculated as if it happened at the end of 2001. We expect that more MSAs will not make the "beginning of year" adjustment than MBAs. Also, the case indicated that there was a 760 day period between the payment to the builder and the receipt of the first rent. Again, based on the preparation gap perceived by FEI, we expect that more of the MSAs than MBAs will use the GAAP records (balance sheet) and record the first rent receipts as if they were received in 365 days. Therefore, post treatment null hypotheses are as follows:

After the mini case pre-treatment we expect that MSAs will show improvement, but will still be statistically less proficient than the MBAs in the capital budgeting task. The null hypothesis is:

H2: There is no difference between the heuristic used by the MBA and MSA students.

For the test to determine if MBAs are better able to calculate the correct timelines than the MSAs, we expect that the MBAs will be more proficient at calculating the correct timelines than the MSAs. The null hypothesis is:

H3: There is no difference between the way the MSA and MBA students calculate the cash flow timeline.

Results

The results of the H1 (Table 1, Panel A) show there is substantial empirical evidence that the MBA students outperformed the MSA students using this capital budget activity. Only 40 (30%) of the MSA students recognized that they were in a cash flow environment where discounted cash flow techniques were required; 75 (56%) of the MBA students recognized the discounted cash flow environment. The Chi sq. statistic is 18.7 and is significant at < .01. These results were so markedly different that a second experiment was run to see if a different first session mini case (pre-treatment), given two class sessions prior to testing with the ABC Company case, would improve the performance of the MSA students.

The result of the H2 (Table 1, Panel B) showed that the new mini case treatment had a positive effect on both the MSA and MBA students recognizing the need for discounted cash flow techniques. The MSA students improved to 63% recognition and the MBA students improved to 74% recognition. However, the MSA students did not entirely close the preparation gap. The Chi sq. statistic for the difference in performance is 3.8 and significant at < .05.

In Panel C of Table 1, the results of the students' ability to calculate the correct timeline is shown (students who used an undiscounted GAAP accounting heuristic are excluded). The correct cash flow timeline should be:

Yr 0	Yr1	Yr2	Yr3	Yr4
-1,000	0	175	175	1,025

The findings also indicate that the MSA students are less skilled at utilizing cash flow timeline data than the MBA students. Seven (8%) of the 88 MSA students calculated the appropriate timeline, however, 39 (44%) made an attempt but missed either the construction period adjustment or the sale period adjustment and 42 (48%) used the GAAP cash flow statement timeline thereby missing both adjustments. Of the MBA students, 25 (30%) correctly calculated the appropriate timeline, 40 (48%) made an attempt to make the adjustments (most only missed the construction period adjustment) and 19 (22%) used the GAAP cash flow statement. The Chi. sq. statistic for the difference in performance is 18.5 and is significant at < .01.

Table 1.

MSA Student Responses vs. MBA Student Responses

Pre-Treatment Study Results		
Panel A: H1		
	MSA Students	**MBA Students**
Used TVM techniques[a]	40	75
Used GAAP accounting[b]	94	59
	134	134

Note. X^2 significant at < .01

Table 1. (cont'd)

MSA Student Responses vs. MBA Student Responses

Post Treatment Study Results		
Panel B: H2		
	MSA Students	**MBA Students**
Used TVM techniques	88	84
Used GAAP accounting	52	29
	140	113

Note. X^2significant at < .05

Post Treatment Study Results Timeline Usage		
Panel C: H3		
	MSA Students	**MBA Students**
Used TVM with correct timeline	7	25
Used TVM with timeline errors[c]	39	40
Used GAAP accounting timeline[d]	42	19
	88	84

Note. X^2significant at < .01

[a] Students who used discounted cash flows techniques.

[b] Students who used undiscounted ROA heuristics.

[c] Students who used discounted cash flows, but missed either the construction period adjustment *or* the beginning of year apartment sale adjustment.

[d] Number of students who used discounted cash flows, but missed both the construction period adjustment *and* the beginning of year apartment sale adjustment.

Table 2.

Expected Frequencies for Observed Responses

Pre-Treatment Study Results			
Panel A: H1			
	MSA	**MBA**	**Total**
Used TVM techniques[a]	57.5	57.5	115
Used GAAP accounting[b]	76.5	76.5	153
Total	134	134	268

Note. X^2=18.7, significant at < .01

Post Treatment Study Results			
Panel B: H2			
	MSA	**MBA**	**Total**
Used TVM techniques	95.2	76.8	172
Used GAAP accounting	44.8	36.2	81
Total	140.0	113.0	253

Note. X^2=3.8, significant at < .05

Table 2. (cont'd)

Expected Frequencies for Observed Responses

Post Treatment Study Results			
Panel C: H3			
	MSA	**MBA**	**Total**
Used TVM with correct timeline	16.4	15.6	32
Used TVM with timeline errors[c]	40.4	38.6	79
Used GAAP accounting timeline[d]	31.2	29.8	61
Total	88.0	84.0	172

Note. X^2=18.8, significant at < .01

[a] Students who used discounted cash flows techniques.

[b] Students who used undiscounted ROA heuristics.

[c] Students who used discounted cash flows, but missed either the construction period adjustment *or* the beginning of year apartment sale adjustment.

[d] Number of students who used discounted cash flows, but missed both the construction period adjustment *and* the beginning of year apartment sale adjustment.

Conclusions

The fact that most MSA students used a GAAP accounting heuristic to analyze what was clearly a cash flow case, requiring the use of discounted cash flow techniques, support the industry observations that the entry level accountants have a more difficult time identifying when they are in a business analyst environment versus a GAAP accounting environment. MBA students proxying for the non-accounting entry-level employees performed better on a capital budgeting task than those with an accounting background (MSA students proxying for entry-level accountants). The capital budgeting task is one that requires effective strategic planning and analytical skills. This evidence should be of interest to accounting educators since 80% to 90% of CPAs will leave the CPA firms within three to five years, and most will enter the accounting or finance department of a corporation. This coupled with the fact that 90% of practicing accountants do not work in the public accounting profession long term (Dutta and Lawson 2007) should encourage educators to incorporate more lessons focusing on the accountants' long-term success in the classroom, including improving their strategic planning and analytical skills. Further, a controller of a Fortune five firm indicated that, of their 2,000 accountants, only about 20 are associated with public reporting. If this work load split is indicative of the work load split between GAAP accounting duties and analytical analysis duties, the entry level accountant with the best skills in the financial analysis area would seem to have the best career opportunities.

A possible partial solution to closing the preparation gap is to expose and emphasize to the MSA students those industries where using GAAP's income matching principle is not an effective method of communicating with operating management; those industries that have long asset life cycles; those areas where cash flow analysis is more important than GAAP income. The exposure of the undergraduate accountants to these non-GAAP industries could easily be worked into the existing curricula. If the result of this small change is that the accounting

students are less likely to be mentally locked into the GAAP matching principle and instead consider using discounting cash flows, we have improved their chances of being seen as competent business partners by senior management.

Limitations

A major limitation of this study is that it does not represent all the corporate finance activities that management face. Therefore, findings may be limited to capital budgeting TVM issues. In addition, the improvement noted in the post-treatment group could be attributed to the demand effect of the mini case given two weeks earlier. It is possible that the mini case alerts the students to be on the lookout for a case requiring the knowledge from the mini case.

Another limitation is the use of MBA and MSA students as subjects. It is possible that the MBA and MSA students are not representative of the average business or accounting major graduate since the students that participated in this study were graduate students. In addition, participants were from one southeastern university's graduate program. It is possible that alternative results would have prevailed had the subjects been undergraduates or from other academic institutions. However, this limitation is mitigated by the fact that the MSAs attended 65 different universities for their undergraduate degrees and the MBAs attended 88 different undergraduate universities. A seminar participant raised the possibility that the MSA students underperformed the MBA students because the MSA students were attending a class labeled "Advanced Managerial Accounting" and would not be thinking about the finance oriented TVM techniques, which could confound results. This concern would seem to be mitigated because the course that the MBA students were attending is labeled "Managerial Accounting Analysis."

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Appendix A
Background Information and Financial Statements
ABC Company
Full Cycle Accounting

1997

January 1, 1997 investors deposited $1 million of equity in ABC. The funds were used the same day to pay $1 million for construction of an apartment building. The investors knew that it would take a year to complete the building and get leases signed.

1998

January 1, 1998 ABC has fully rented apartment building. All rent receipts and expense payments are made at the end of the current year. Annual rent receipts are $.5 million and expenses (ex-depreciation) are $.2 million. Taxes are paid at the end of the current year. The building is being depreciated over 20 years (straight-line and no salvage value) for financial and tax accounting. Note that net income is $.125 million and net cash inflow is $.175 million.

1999

No change in level of operation. Note that net income is $.125 million and net cash inflow is $.175 million for the year.

2000

No change in level of operation. Note that net income is $.125 million and net cash inflow is $.175 million for the year.

2001

On January 1, ABC sells the building for $.850 million cash. Since the net book value of the building is also $.850 million, there is no "gain or loss from sale" to be recognized. Note that after the building is sold, the final accounting shows the cash account to be $1.375 million or $.375 million greater than the initial investment. Also note that total net income over the time that ABC held the building is also $.375 million. Net cash flow and Net Income will always be equal over the full-cycle (sometimes referred to as life-cycle) accounting period. They will rarely, if ever, be equal on a year-by-year basis.

Question: Was the apartment a "good" purchase for ABC?

Appendix A (cont'd)

($000) **Balance Sheets**

	1997	1998	1999	2000	2001
ASSETS					
Cash	0	175	350	525	1,375
Apartment	1,000	950	900	850	0
Total Assets	1,000	1,125	1,250	1,375	1,375
Liabilities	0	0	0	0	0
Shareholders' Equity					
Equity	1,000	1,000	1,000	1,000	1,000
Retained Earnings	0	125	250	375	375
Total Equity	1,000	1,125	1,250	1,375	1,375
Liabilities and Equity	1,000	1,125	1,250	1,375	1,375

Income Statements

	1997	1998	1999	2000	2001
Revenues	0	500	500	500	0
Operating expenses	0	(200)	(200)	(200)	0
Depreciation	0	(50)	(50)	(50)	0
Gross Profits	0	250	250	250	0
Income Taxes	0	(125)	(125)	(125)	0
Net Income	0	125	125	125	0

Statements of Cash Flows

	1997	1998	1999	2000	2001
Cash from revenues	0	500	500	500	0
Cash paid for expenses	0	(200)	(200)	(200)	0
Cash paid for taxes		(125)	(125)	(125)	
Investment in firm	1,000				
Sale/(Buy) Apartment	(1,000)				850
Net cash Flow	0	175	175	175	850

Appendix B
Background Information and Financial Statements
XYZ Company
Full Cycle Accounting

1997

January 1, 1997 investors deposited $1 million of equity in XYZ. The funds were used the same day to pay $1 million for construction of a stadium. The investors knew that it would take three years to complete the stadium and get leases signed.

2000

January 1, 2000 XYZ leased the stadium to the city. All rent receipts and expense payments are made at the end of the current year. Annual rent receipts are $.5 million and expenses (ex-depreciation) are $.2 million. Taxes are paid at the end of the current year. The stadium is being depreciated over 20 years (straight-line and no salvage value) for financial and tax accounting. Note that net income is $.125 million and net cash inflow is $.175 million.

2001

No change in level of operation. Note that net income is $.125 million and net cash inflow is $.175 million for the year.

2002

No change in level of operation. Note that net income is $.125 million and net cash inflow is $.175 million for the year.

2003

On January 1, XYZ sells the stadium for $.850 million. Since the net book value of the stadium is also $.850 million, there is no "gain or loss from sale" to be recognized.

Note that after the stadium is sold, the final accounting shows the cash account to be $1.375 million or $.375 million greater than the initial investment. Also note that total net income over the time that XYZ held the stadium is also $.375 million. Net cash flow and Net Income will always be equal over the full-cycle (sometimes referred to as life-cycle) accounting period. They will rarely, if ever, be equal on a year-by-year basis.

Question 1: Assuming that all the rents, expenses and taxes were received/paid at the end of each year, was this stadium a "good" purchase for the XYZ?

Question 2: Assuming that all the rents, expenses and taxes were received/paid at the beginning of each year, was this stadium a "good" purchase for the XYZ?

Question 3: Was the ABC apartments or the XYZ stadium the 'better" deal?

Appendix B (cont'd)

($000)	Balance Sheet				
	1997-1999	2000	2001	2002	2003
ASSETS					
Cash	0	175	350	525	1,375
Stadium	1,000	950	900	850	0
Total Assets	1,000	1,125	1,250	1,375	1,375
Liabilities	0	0	0	0	0
Shareholders' Equity					
Equity	1,000	1,000	1,000	1,000	1,000
Retained Earnings	0	125	250	375	375
Total Equity	1,000	1,125	1,250	1,375	1,375
Liabilities and Equity	1,000	1,125	1,250	1,375	1,375

	Income Statements				
	1997-9	2000	2001	2002	2003
Revenues	0	500	500	500	0
Operating expenses	0	(200)	(200)	(200)	0
Depreciation	0	(50)	(50)	(50)	0
Gross Profits	0	250	250	250	0
Income Taxes	0	(125)	(125)	(125)	0
Net Income	0	125	125	125	0

	Statements of Cash Flows				
	1997-9	2000	2001	2002	2003
Cash from Revenues	0	500	500	500	0
Cash Paid for Expenses	0	(200)	(200)	(200)	0
Cash Paid for Taxes		(125)	(125)	(125)	
Investment in firm	1,000				
Sale/(Buy) Stadium	(1,000)				850
Net cash Flow	0	175	175	175	850

Appendix C
Which Agent Did the Best?

Two 25 year-old collegians led their respective teams to the NCAA finals. The first player, T-Rex, signed with ABC agency. The second player, Air-M, signed with XYZ agency. The scouts all agreed that both players were equally can't miss, all-world, future all-pros; therefore draft order was irrelevant.

T-Rex was given a $10 million signing bonus and was guaranteed $5 million in salary in each of years 1, 2, and 3. In year 4, T-Rex could re-open salary negotiations.

Air-M was guaranteed $5 million in salary in years 1, 2, and 3. In year 4, Air-M could re-open salary negotiations. However, Air-M's agency was concerned about his having money in old age, so they negotiated a deferred signing bonus payment of $50 million due at age 65.

Ignoring agent fees, taxes and risk, which agent negotiated the best contract?

The authors would like to thank seminar participants at the University of Central Florida for their helpful comments.