

**CAN WE PREDICT SUCCESS IN THE FIRST
INTERMEDIATE ACCOUNTING COURSE
FROM SOPHOMORE-LEVEL PERFORMANCE?**

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Abstract

The purpose of this study was to determine potential predictors of success for transfer and nontransfer students in their first intermediate accounting class. Data was collected on the grades in the sophomore-level accounting classes, cumulative GPA, transfer status and student's gender for 251 students completing the first intermediate accounting class. The data further identified students with the main campus and two teaching centers offering the intermediate accounting course. Further analysis was done on the 76 students that took the course at the main campus because the two teaching centers enrolled mostly transfer students. The cumulative GPA and the grades in the sophomore-level classes were highly correlated to the grade in the first intermediate accounting course. Overall, we found that the managerial accounting class was the best

predictor of a student's grade in the first intermediate accounting class when we focused on the main campus sample. The transfer status and student gender were generally not significantly associated with the grade.

INTRODUCTION

Every college major seems to have one course that is characterized as the “heart and soul” of the major. For accounting majors, that course is the first intermediate accounting course, commonly referred to as Intermediate Accounting I. Students enter this course after completing introductory courses in Financial and Managerial Accounting (also known as Accounting Principles 1 and 2 in some schools), which are courses generally required for all business majors.¹ In a recent study, Burnett, Xu, and Kennedy (2010) noted that for many schools the first intermediate course is the “weed-out” course for accounting majors, resulting in high withdrawal and/or failure rates.

Content for all intermediate accounting courses has been increasing for a long time. A commonly used text in this course is *Intermediate Accounting* by Kieso, Weygandt, and Warfield (2013) which contains a massive 1,557 pages. Researchers have noted the challenge placed on faculty to cover essential content, to guide students through the increased difficulty level of the course, and to keep students motivated for success (Burnett et al., 2010; Waples

¹ Most of the time, these courses are taken during the sophomore year. For those readers not familiar with the university system in the United States, the freshman year is the first year, the sophomore year is the second year, the junior year is the third year and the final year of an undergraduate education or fourth year is generally referred to as the senior year. If a student takes undergraduate classes after they receive their degree, they are generally referred to as post-bacs. Finally, students working on a master's degree or higher are referred to as graduate students.

and Darayseh, 2005). The University of Maryland University College (UMUC) has included a warning in the course description for their first intermediate accounting course, advising students that the course requires intense study and analysis, and remarking that students who have not taken Financial Accounting within the last two years may have difficulty with the course (UMUC, 2014). Some schools, like the University of Texas Arlington (UTA, 2014), require students to pass an entrance exam prior to enrolling in the first intermediate accounting course, giving the institutions a level of assurance that the prospective students have acquired sufficient prerequisite knowledge necessary to successfully handle the first intermediate accounting course.

The purpose of this research stream is to gain further insight into predictors of success for transfer and nontransfer students in their first intermediate accounting class. Hopefully, we will help improve student performance by identifying student support systems and/or intervention strategies, particularly for those students who are likely to have a high risk of failure (Burnett et al., 2010; Eikner and Montondon, 2001).

The knowledge gained from this study will help faculty advise students who are either interested in accounting or who have recently declared the accounting major. We begin our analysis with a brief review of existing research. We then present a correlation and regression analysis to determine if sophomore-level accounting classes, cumulative GPA, transfer status and student gender are reliable predictors for the student's grade in the first intermediate accounting course.

LITERATURE REVIEW

Academic Ability and Past Efforts:

Correlations between GPA in past courses (a proxy for ability) and performance in intermediate accounting have been well documented (Burdick and Schwartz, 1982; Burnett et al.,

2010; Doran, Bouillon and Smith, 1991, Hicks and Richardson, 1984; Turner, Holmes, and Wiggins, 1997; Waples and Darayseh, 2005). Overall GPA and/or GPA in accounting principles classes were found to have a positive effect on successfully engaging in intermediate accounting.

Burdick and Schwartz (1982) noted that completion of the majority of lower-division work at a four-year institution versus a community college contributed to success in intermediate accounting. Turner et al. (1997) also found that where the introductory accounting course was taken (four-year college/university or community college) was a predictor of success in intermediate accounting even when results were controlled for ability.

Some authors recommend recruiting and retaining the best students as a method to ensure success (Eikner and Montondon, 2001). In contrast, other authors focus on the usefulness of providing effective systems to support those students who have a desire for a degree in accounting, but lack the good foundation courses, study skills, or motivation that are necessary for success (Lindquist and Olsen, 2007; Sanders and Willis, 2009). In a curriculum design study, Lindquist and Olsen (2007) examined intermediate accounting student performance, satisfaction, and frustration, depending on the degree of homework assistance provided. Students who were given some form of assistance (check figures or completed solutions) were more satisfied and less frustrated with doing homework than students who were provided no assistance.

However, the degree of homework assistance provided had no effect on student performance as measured by the difference between a pre- and post-test. Sanders and Willis (2009) reported results from an intermediate accounting entrance exam where a comprehensive set of remedial study aids was provided to students preparing for the exam. Although the study described a set of remedial tools, it did not report the effect of the use of the tools on course performance. In a recent study, Fatemi et al. (2014)

compared online and manual homework assignments with performance in intermediate accounting.

In models that include some measure of ability, (SAT or ACT scores, high school GPA or college GPA) much of the explained variance is attributable to that variable (Frakes 1977, Clark and Sweeney 1985, Ingram and Petersen 1987, Eskew and Faley 1988, Doran et al. 1991, Buckless et al. 1991, Gist et al. 1996, Turner et al. 1997). Therefore, we controlled for cumulative GPA at the university whenever possible.²

Preparation for First Intermediate Accounting Class:

Prior research gives a mixed picture of the relationship between success in sophomore-level and success in upper-level accounting class success.³ Delaney et al. (1979), Clark and Sweeney (1985), and Ingram and Petersen (1987) found the first sophomore-level accounting course not to be related to performance in the first intermediate accounting class or other upper division accounting classes. Turner et al. (1997), however, found the first sophomore-level accounting course to be a significant variable in predicting the first test score, as well as, the final average in the first intermediate accounting course. When the first test score was included in the model, the sophomore-level accounting courses grade was no longer significant ($p \leq 0.095$).

However, Buehlmann (1975) found the grades in both sophomore-level accounting courses to be significantly correlated with the final intermediate grade, but the second principles grade was more highly correlated. Eckel and Johnson (1983) found the average GPA for the two principles courses to be useful in discriminating between high and low GPA accounting majors.

² Unfortunately, new transfer students do not have an established cumulative GPA.

³ As discussed in an earlier footnote, the sophomore year is a phase referring to the second year of an undergraduate program in the United States. Upper-level programs would enroll students above the sophomore level.

Interestingly, Delaney et al. (1979) and Ingram and Petersen (1987) found the second principles grade to be significantly related to performance while Clark and Sweeney (1985) did not. This study will extend the previous research by investigating whether the grades in the sophomore-level accounting classes are good predictors of the success in the first intermediate accounting class. Additionally, we expect a positive relationship.

Transfer Status:

Some concern has been raised about the level of rigor of community college classes. This concern led researchers to study whether transfer students were as well prepared as nontransfer students. In a nonaccounting study, Pascarella et al. (1995-96) found that no significant differences existed for increases in reading comprehension, mathematics aptitude, and critical thinking skills of students from two- or four-year institutions where ability and other demographic variables were controlled.⁴

Two early studies found that transfer students were not as well prepared for the first intermediate accounting class as native students (Krull, 1971), and that their success in that class, their accounting GPAs, and their ultimately achieving an accounting degree were significantly worse than native students (Buehlmann 1975). Neither of these two studies controlled for ability. Turner et al. (1997) controlled for ability and found that where students took their financial principles course was a significant predictor of both the first test score and the final grade in first intermediate accounting course.

At an upper-division institution where all accounting majors were transfer students, McCormick and Montgomery (1974) found that the two-year transfer students were able to

⁴ In the United States, students can take their freshman and sophomore years at a 2-year/community college and then transfer to a 4-the year institution. This was done by a majority of our students.

achieve at approximately the national average on the AICPA I and II Level accounting achievement tests.⁵ As all students were transfers, no distinction was made for where students took their first accounting course. Delaney et al. (1979) found that when transfer status was used in either a multiple regression or discriminant analysis model that included grades and scores on tests, the transfer status was not a significant predictor of success in the first intermediate accounting class.

Laband and Piette (1995) examined the impact of various factors on success in economics. They found that transfer students had lower GPAs in their upper level economics courses than did nontransfer students. This finding may be relevant, because at most institutions the two principles of economics and two principles of accounting courses are prerequisites for admittance into the school or college of business.

This study extends previous research by comparing nontransfer students with transfer students from two-year colleges as a predictor of a student's success in the first intermediate accounting course.

Student Gender:

Gender as a predictor of success in accounting coursework showed mixed results. Mutchler et al. (1987) reported a performance advantage by female students.⁶ When subsequent research controlled for some measure of ability (Eikner and Montondon, 2001; Turner et al., 1997) there was no such relationship found. In a recent study of managerial accounting

⁵ An upper-division institution would be a university that offers only the junior and senior-level classes. They expect students to take their freshman and sophomore level classes at a 2-year/community college or another 4-year institution. Our two teaching centers offer only upper-division classes.

⁶ Recently, Seow et al. (2014) found that gender was associated with successful academic performance across a whole undergraduate accounting program at a Singapore University.

students, Fogarty and Goldwater (2010) argued that some gender effect issue remains because measures have been confounded by rewards for efforts. They concluded that while female students tend to exert more effort, performance is not related to gender if effort is not a contributor to the performance score.

In a comprehensive study that examined multiple variables including major, location of principles courses, GPA, grade in the first accounting principles course, race, gender, course load, grade expectation, age, and pretest score, Eikner and Montondon (2001) found only college grade point average, grade in the first principles course, and age were significantly associated with success in the first intermediate accounting class.

Again, since there was mixed results in the previous research, we are extending the literature by studying student gender in our analysis.

METHODOLOGY

We collected data on 270 students who enrolled in the first intermediate accounting course on the main campus and two teaching centers from the summer 2013 through the spring of 2014. We reduced the sample to 251 students by dropping nineteen students that withdrew from the class. See Table 1 for a summary of the samples used in Tables 2 through 7. We collected the following data on 251 students that completed the course.⁷

1. Student's grade in the first intermediate accounting class

⁷ Data was also collected on whether this was the first quarter at the university, whether the student was a post-bac or graduate student, the difference in gender between the student and instructor, and whether this was the student's first junior-level accounting class. None of these variables provided additional support. We partition the sample into two subgroups based on whether the student was in their first quarter at the university.

2. Student's grades in the two (three) sophomore-level accounting classes⁸
3. Student's cumulative GPA at the university
4. Student's transfer status
5. Student's gender

Table 1 Students in the First Intermediate Accounting Class Sample		
Total number of students enrolled in the first intermediate accounting class on the main campus and teaching centers		270
Less: Students who withdrew from the class		<u>19</u>
Students who completed the class (Tables 2 and 3) ¹⁸		251
Less: Students who took the class at one of the centers		<u>169</u>
Students who took the class on the main campus (Table 5)		76
Less: Transfer students on the main campus (Table 6)		<u>37</u>
Nontransfer students on the main campus (Table 7)		<u>39</u>

¹⁸ We divided these 251 students into two subgroups; (1) students who had established a cumulative GPA at our university (161 students studied in Table 4) and (2) students who were in their first quarter at our university (90 students studied in Table 5). With the first subgroup, we were able to study the cumulative GPA variable more closely.

When a sample of transfer and nontransfer students was used, we ran the following regression model equation and variables:

$$(1) \text{ GRADE1} = f(\text{FA1}, \text{MA1}, \text{CUMGPA}, \text{TRANSFER} \text{ and } \text{SGEN})$$

Where;

⁸ The teaching centers are generally 100 percent transfer students from community colleges. Since many of the community colleges are on the quarter system in our area, the students are required to take three sophomore-level accounting classes. Our university has only two sophomore-level accounting classes: Financial Accounting 1 and Managerial Accounting 1.

- GRADE1 = the student's grade in the first intermediate accounting course where the scale is 4.0, 3.7, 3.3, 3.0, ..., 1.0, 0.7, and 0.0 for A, A-, B+, B, ..., D, D-, and F, respectively.
- FA1 = the student's grade in the first financial accounting course (first sophomore-level accounting class). The scale is the same one used for GRADE1 above.⁹
- MA1 = student's grade in the first managerial accounting course (second sophomore-level accounting class). The scale is the same one used for GRADE1 above.¹⁰
- CUMGPA = the student's cumulative grade point (GPA) average at our university before the start of the quarter.¹¹
- TRANSFER = 1, if a student took their sophomore accounting classes at a community college; 0 otherwise.
- SGEN = 1, if the student was a female; 0, otherwise.

⁹ When we studied transfer and nontransfer students together, we set FA1 equal to the average of the grades received in the first two community college courses. This makes sense because the first two community college courses are generally financial accounting related.

¹⁰ When we studied transfer and nontransfer students together, we set MA1 equal to the grade in the third community college course because it is generally managerial accounting related.

¹¹ Cumulative GPA was used in samples where both transfer and nontransfer students had established a cumulative GPA at the university. Transfer students in their first quarter do not have an established cumulative GPA.

When we focused on only transfer students, we used a form of the following regression model:

$$(2) \text{ GRADE1} = f(\text{CC1}, \text{CC2}, \text{CC3} \text{ and } \text{SGEN})$$

Where;

CC1 = the student's grade in the first community college course. The scale is the same one used for GRADE1 above.

CC2 = student's grade in the second community college course. Again, the scale is the same one used for GRADE1 above.

CC3 = student's grade in the third community college course. Again, the scale is the same one used for GRADE1 above.

GRADE1 and SGEN were found in the same manner as in (1).

RESULTS

Table 2 provides the correlation matrix for the GRADE1, FA1, MA1, CUMGPA, TRANSFER and SGEN variables for the entire sample of 251 students. The correlations with CUMGPA only include 161 students because 90 students were in their first quarter and did not have an established GPA at the university. Overall, the grades in the sophomore-level financial accounting and managerial accounting, along with the cumulative GPA at our university, were highly correlated in a positive manner ($p < 0.01$) with the grade earned in the first intermediate accounting class. Transfer status and student gender were not correlated. As expected, there is a high correlation between the grades in the

financial accounting class, managerial accounting class and cumulative GPA variables (all have significance levels less than 0.01).

Table 2 Correlations Matrix All Students in the First Intermediate Accounting Class (n = 251)					
	GRADE1	FA1	MA1	CUMGPA	TRANSFER
FA1	0.450***				
MA1	0.395***	0.538***			
CUMGPA ¹⁹	0.494***	0.409***	0.399***		
TRANSFER	-0.013	-0.046	-0.141**	-0.185**	
SGEN	0.044	0.114*	0.092	-0.020	0.095
***Correlation is significant at the 0.01 level **Correlation is significant at the 0.05 level *Correlation is significant at the 0.10 level					

¹⁹ There were 90 students that were in their first quarter at the university. Therefore, the correlations with CUMGPA are based on 161 students.

Next, we ran several models using equations 1 and 2 from the methodology section. Table 3 presents the results of three models using the entire sample based on equation 1. The CUMGPA was not included in these models because 90 first-quarter students did not have a cumulative GPA at the university. The first model includes all of the remaining independent variables, while the second model does not include the sophomore managerial accounting grade and the third model does not include the sophomore financial accounting grade. Running the second and third models makes sense because the correlation between FA1 and MA1 is 0.538 ($p < 0.01$).

Table 3 Regression Models All Students in the First Intermediate Accounting Class (n = 251)			
	Model 1	Model 2	Model 3
Constant	-0.510	-0.171	0.733**
FA1	0.621***	0.850***	-----
MA1	0.365***	-----	0.661***
TRANSFER	-0.081	0.022	-0.202
SGEN	-0.024	-0.017	0.031
R ²	0.236	0.202	0.161
***Significant at 0.01 level **Significant at 0.05 level *Significant at 0.10 level			

When we look at Table 3 we see that the sophomore-level accounting classes are both significant with the student's grade in the first intermediate accounting class. Again, these models are based on the sample of 251 students. The R² when both sophomore-level classes are included was 0.236, while it was only 0.202 and 0.161 when the financial accounting and managerial accounting variable were included separately in the second and third models, respectively. Overall, it appears that the financial accounting class is a slightly better predictor of a student's grade in the first intermediate accounting class. Both sophomore-level accounting classes are positively related to the student's grade in the first intermediate accounting class. Meanwhile, the transfer status and student gender were not significantly related.

Table 4 presents the results of six different models employing independent variables FA1, MA1, CUMGPA, TRANSFER and SGEN on a subset of 161 students with university GPAs. The first model includes all five independent variables, while the other five models use only three or four of the independent variables. Again, this is because of the high correlations between FA1, MA1 and CUMGPA. Based on these

models, it is apparent that the sophomore-level financial accounting grade and CUMGPA are very positively correlated with the grade in the first intermediate accounting class, and the cumulative GPA is the best predictor of a student's grade. Transfer status and student gender do not help to determine the grade in the first intermediate accounting class. When including the sophomore-level financial accounting grade and the student's cumulative GPA in the same model (Model 5), we are able to explain 31.3 percent of the variation in the grade in the first intermediate accounting class.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Constant	-0.891*	0.187	0.992**	0.377	-0.783*	-0.169
FA1	0.423***	0.755***	-----	-----	0.491***	-----
MA1	0.153	-----	0.589***	-----	-----	0.312***
CUMGPA	0.539***	-----	-----	0.753***	0.580***	0.621***
TRANSFER	0.076	0.002	-0.220	0.100	0.126	0.006
SGEN	-0.034	-0.054	-0.033	0.017	-0.028	-0.009
R ²	0.320	0.192	0.144	0.246	0.313	0.278
***Significant at 0.01 level / **Significant at 0.05 level / *Significant at 0.10 level						

Because the centers are almost 100 percent transfer students, we decided to focus on our main campus. Table 5 provides us with the regression models for the 76 students taking the first intermediate accounting class on the main campus. While we do not report the correlations, they were consistent with the results found in Table 2 for the larger sample. Again, the two sophomore-level accounting classes ($p < 0.01$) and cumulative GPA ($p < 0.05$) are positively related to the grade in the first intermediate course. When we run the three models similar to

those ran in Table 3, we found that the sophomore-level classes continue to be highly significant and positively related with the grades in the first intermediate accounting course. In this smaller sample, the managerial accounting class appears to be a better predictor. The R^2 of Model 3 is 0.325. Transfer status was marginally significant in Model 2, but the student gender was not significant in any of the models in this table.¹²

Table 5 Regression Models All Students in the First Intermediate Accounting Class on the Main Campus (n = 76)			
	Model 1	Model 2	Model 3
Constant	-0.083	0.431	0.726*
FA1	0.353**	0.663***	-----
MA1	0.536***	-----	0.693***
TRANSFER	0.094	0.327*	0.037
SGEN	0.047	0.138	-0.019
R^2	0.366	0.244	0.325
***Significant at 0.01 level / **Significant at 0.05 level / *Significant at 0.10 level			

Next, we divided the students at the main campus into two subgroups: transfer and nontransfer students. Table 6 focuses on the transfer students, while Table 7 focuses on the nontransfer students taking the first intermediate accounting class on the main campus. There were 37 transfer students and 39 in the nontransfer group. As mentioned before in a footnote, community college students in our state take three sophomore-level accounting classes to satisfy our two courses.

¹² When we focused on the 59 students that had a cumulative GPA at the university, we found CUMGPA to have a much weaker relationship with the grade in the first intermediate accounting class ($p < 0.05$). Additionally CUMGPA was never significant when included in the models that included FA1 and MA1.

Table 6 Regression Models Transfer Students in the First Intermediate Accounting Class on the Main Campus (n = 37)				
	Model 1	Model 2	Model 3	Model 4
Constant	-0.012	0.408	1.001	0.236
CC1	0.236	0.770***	-----	-----
CC2	0.079	-----	0.635***	-----
CC3	0.581*	-----	-----	0.829***
SGEN	0.048	0.079	-0.027	0.033
R ²	0.421	0.352	0.255	0.402
***Significant at 0.01 level **Significant at 0.05 level *Significant at 0.10 level				

Table 7 Regression Models Nontransfer Students in the First Intermediate Accounting Class on the Main Campus (n = 39)						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Constant	1.143	0.693	0.946	0.689	0.230	1.611
FA1	0.585**	0.580**	-----	-----	0.481	-----
MA1	0.842***	-----	0.626***	-----	-----	0.767***
CUMGPA	-0.947*	-----	-----	0.675*	0.261	-0.344
SGEN	0.203	0.201	-0.035	-0.031	0.136	-0.003
R ²	0.342	0.144	0.238	0.087	0.152	0.248
***Significant at 0.01 level / **Significant at 0.05 level / *Significant at 0.10 level						

When we look at the community college transfers separately, we used the grades in the three different courses in Table 6. This table is based on the transfer students taking the first intermediate accounting class on the main campus. The grades in each of the three community college accounting classes ($p < 0.01$) were significantly correlated with the grade received in the first

intermediate accounting class taken on the main campus.¹³ The results of Model 1 are mixed in Table 6. Only the third community college class is significant, but the R^2 is 0.421.¹⁴ When we examine the other three models, we find that Models 2 and 4 explain the most variation in the grade in the first intermediate accounting class variable. Model 2 has an R^2 of 0.352, while Model 4 is slightly higher at 0.402. Model 4 explains almost as much of the variation in the grade in the first intermediate accounting class, as does the first model (50.2 percent versus 42.1 percent.) Based on this smaller sample of transfer students on campus, the third community college accounting class is more important in predicting a student's grade in the first intermediate accounting class.

Table 7 focuses on the 39 nontransfer students in the first intermediate accounting class on the main campus. We present six models (similar to those provided in Table 3) employing the independent variables FA1, MA1, CUMGPA and SGEN. Again, the correlation between the cumulative GPA and the two sophomore-level classes are rather high (FA1 and CUMGPA is 0.514; MA1 and CUMGPA is 0.744). Based on the third and sixth models, it appears that the managerial accounting class is most helpful when trying to predict the grade in the first intermediate accounting class. The R^2 for the third model is 0.238.

In an effort to understand the results in Table 7 more completely, Table 8 presents a summary of a second sample developed. In this sample, we focused on students that took FA1 and MA1 on the main campus. There were 1,689 students that completed FA1 from the fall 2010 through summer 2013. 176

¹³ The correlations between CC1/CC2, CC2/CC3 and CC1/CC3 are 0.787, 0.671 and 0.815, respectively.

¹⁴ As mentioned before, the correlations between CC1, CC2 and CC3 are significant. Therefore, having all three variables in the model creates a problem relative to their individual significance.

students from this group did not earn a grade of C- or better.¹⁵ That left 1,513 students available for MA1. There were 438 student that did not complete MA1 and another 153 students that earned a D or F in the course. Thus, there were 922 students available to take the first intermediate accounting course. Only 123 (13.3%) of the available students actually completed the first intermediate accounting course.

Number of students taking complete FA1		1,689
Less: students with a D or F		<u>176</u>
Number of students eligible for MA1		1,513
Less: students who did not take or complete MA1	438	
Less: students with a D or F	<u>153</u>	<u>591</u>
Number of students eligible to take Intermediate Accounting I (IA1)		922
Less: students who did not take or complete IA1		<u>799</u>
Number of students that took IA1		<u>123</u>

Table 9 provides additional details. FA1 and MA1 are both courses required by business students. Meanwhile, FA1 may be required by other majors on campus, but not MA1. Thus, it is interesting to see that 21.0 (36.8) percent of the students that did not take or complete MA1 received an A (B) in FA1. That is 253 potential accounting majors that decided to major in something else. Meanwhile, 77.2 (72.4) percent of the students receiving an A (B) in FA1 did move on to MA1. There were 1,075 students that

¹⁵ At first, we assigned the original grade to each student. Since we require a C- or better to move on to the next class, many students retake classes. Therefore, we assigned a C- for those students that moved on to the next course after first earning a grade of a D, F or W in this follow-up analysis.

completed the two sophomore-level courses.¹⁶ As mentioned in the previous paragraph, only 922 students met the requirements for the first intermediate accounting class because 153 students did not earn a C- or better.

When we focus on the students that take the first intermediate accounting course, we see that 21.7 (13.7) percent of the students that completed MA1 with an A (B) completed the course.¹⁷ The correlation between the students' FA1 grades and the first intermediate accounting grade was 0.333. Meanwhile, the correlation between the students' MA1 grade and the first intermediate accounting grade was 0.517. Thus, like our initial sample, MA1 appears to be a better predictor of the grade in the first intermediate accounting course than FA1.

Next, we decided to partition the sample of 922 students in a different way. We used the categories of A/A, A/B, A/C, B/A, B/B, B/C, C/A, C/B and C/C. The first letter represents the grade in FA1 and the second letter represents the grade in MA1. Of the 922 students available to take the first intermediate accounting class, 407 students with C's in one of the two sophomore-level accounting courses did not take or complete the first intermediate course. This is 50.9 percent of the students that did not take or complete the first intermediate accounting course. Only 28.5 percent of the 123 students that completed the first intermediate course had a C in either sophomore-level courses. Therefore, most of the students in the first intermediate course were AB students in both of the sophomore-level accounting classes.

¹⁶ The correlation between FA1 and MA1 was 0.498 for the 1,075 students that completed both classes.

¹⁷ The correlation between FA1 and MA1 for the 123 students that took the first intermediate accounting class was 0.433.

Table 9			
Summary of FA1 students taking MA1			
FA1 Grade	Completed MA1	Did not Complete MA1	Total
A	312 (77.23%)	92	404
B	423 (72.43%)	161	423
C	340 (64.76%)	185	340
Totals	1075	438	1513
Summary of MA1 taking The first intermediate accounting course (IA1)			
MA1 Grade	Completed IA1	Did Not Complete IA1	Total
A	48 (21.72%)	173	221
B	47 (13.66%)	297	344
C	28 (7.84%)	329	357
Totals	123	799	922
Summary of FA1 and MA1 taking The first intermediate accounting course (IA1)			
FA1/MA1 Grade	Completed IA1	Did Not Complete IA1	Total
A/A	37 (25.87%)	106	143
A/B	23 (20.18%)	91	114
A/C	7 (15.56%)	38	45
B/A	10 (17.24%)	48	58
B/B	18 (10.91%)	147	165
B/C	16 (10.39%)	138	154
C/A	1 (5.00%)	19	20
C/B	6 (9.23%)	59	65
C/C	5 (3.16%)	153	158
Totals	123	9	922

CONCLUSIONS

The results of our full sample (Table 2) showed that grades in the sophomore-level accounting classes are a reliable predictor of the student's grade in the first intermediate accounting course. Our results were similar to the outcomes found in the work of Burdick and Schwartz (1982); Hicks and Richardson (1984); Doran et al. (1991); Turner et al. (1997); Waples and Darayseh (2005); and Burnett et al. (2010). The student's gender and transfer status were not significantly correlated. The grade in the first sophomore-level class was slightly better in predicting the student's grade in the first intermediate accounting class based on the entire sample.

We then narrowed our focus to the 161 students (Table 4) that had a cumulative GPA at the university, and found that the two sophomore-level classes and cumulative GPA were important. Cumulative GPA provided the best predictive ability when comparing the grades in the sophomore-level accounting classes and cumulative GPA separately. Having the financial accounting class and cumulative GPA in the same model provided the best predictive power. This finding was consistent with the findings of Turner et al. (1997) and contrary to the findings of Delaney et al. (1979), as well as Ingram and Petersen (1987). Transfer status and the student's gender were nonfactors in this analysis.

Since many of our community colleges are on the quarter system, most of our transfer students take three accounting classes at the sophomore level. Therefore, when we studied only transfer students, we kept the three courses separate. When we did our analysis for transfer and nontransfer students combined, we averaged the first two community college grades together for the financial accounting grade. The third class was set equal to the managerial accounting grade. Overall, we found the second and third community college classes to be the best predictors for the grade in the first intermediate accounting class. Several observations became clearer when we focused on our main campus

students. Again, both sophomore-level accounting classes can be used to predict a student's success in their first intermediate accounting class, however the second sophomore-level accounting class (managerial accounting) appears to be more highly correlated than the first financial accounting class.

When we focused on the transfer students on the main campus, we found that the third community college accounting course (managerial accounting) had the highest relationship with the student's grade in the first intermediate accounting class. In our study, transfer status was not a significant factor in predicting success. Delaney et al. (1979) came to a similar conclusion, although Turner et al. (1997) concluded the opposite. As mentioned in the literature review, Krull (1971), as well as Buehlmann (1975) noted that transfer students were not as well prepared and their chances of success were worse than native students. Our analysis found that transfer students were indeed as prepared as our four-year students. The main reason for this may be that most community college students take an additional sophomore-level accounting class.

Our main campus results were validated with an expanded sample of students taking the two sophomore-level classes on the main campus. We discovered that 438 eligible students for the second sophomore-level class stopped after the first class. Of these students, 253 were potential accounting students because they received an A or B in the first sophomore-level accounting class. The correlations between grades in the first and second sophomore level class with the grade of the first intermediate accounting class were 0.333 and 0.517, respectively. Again, this shows that the second sophomore-level accounting class (managerial accounting) is probably a better predictor of success in the first intermediate accounting class.

What we found in this study is similar to the findings of other researchers. We found that cumulative GPA and the sophomore-level accounting classes were good predictors of the grade earned in the first intermediate accounting class. In our

study, transfer status and student gender were found to be insignificant factors.

Overall, this information can be used to advise students on becoming an accounting major. Cumulative GPA and prior success in the sophomore-level classes provided evidence of potential success in the first intermediate accounting class. This will provide a basis for faculty or academic advisors to express their concerns with students who have struggled in the past. When we focus on the main campus, it is interesting to note that the student's success in the managerial course may be a better indicator of success than the financial course.

A limitation of this study was the lack of information on cumulative community college GPAs for the transfer students. Additionally, the main campus sample was fairly small with only 69 students, and this study is limited to one university for one year. Future research could expand the sample to two or three years or include additional universities.

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