

HOW DO TRANSFER STUDENTS IN ACCOUNTING COMPARE ACADEMICALLY TO “NATIVE” STUDENTS?

Maria S. Domingo

School of Business
The College of New Jersey
Ewing, New Jersey
USA

Hossein Nouri

School of Business
The College of New Jersey
Ewing, New Jersey
USA

ABSTRACT

Because of the rise in education costs or inability to meet admission requirements at four-year institutions, many students begin their postsecondary education at two-year institutions as an accessible and affordable alternative to four-year colleges or universities. Many of these students use a two-year institution as a “stepping stone” to subsequently transfer to a four-year institution. This study provides empirical data on the academic performance of accounting students enrolled at a liberal arts undergraduate college in the Northeast United States over a four-year period. This study provides further evidence that community college students who subsequently transferred to an accounting program at a four-year institution earned statistically significant lower grades in Intermediate Accounting I, Cost Accounting and Advanced Accounting courses in comparison to their native student counterparts. These results confirm that transfer students in accounting may need academic and social support services to ease the transition from the community college environment to the academic and campus community of a four-year institution.

Key words: Transfer student, transfer shock, accounting education, community college, academic performance

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INTRODUCTION

Community colleges have provided a growing number of students an alternative means to pursue their goals in higher education. Due to increasing costs at four-year institutions or ineligibility to meet admission requirements, many students have opted to complete their first two years or less at a community college, and subsequently transfer to a four-year institution. Approximately thirty-five percent of students enrolled in institutions of higher learning attend two-year community colleges in the United States (National Center of Education Statistics, 2013). A large number of these students eventually transfer from a community college to a four-year college or university in pursuit of a baccalaureate degree. For example, in the academic year 1995 to 1996, approximately 29% of students who began at a community college ultimately transferred to a four-year college or university (Wirt et al., 2003). In accounting education specifically, more than half of the students who fulfill the first course in accounting do so at community colleges, and approximately a quarter of the students who enter the accounting profession fulfill their initial accounting coursework at a community college (Accounting Education Change Commission, 1992). Additionally, the American Accounting Association (AAA) sponsored a report that included an analysis of the characteristics of students at two-year community colleges based on 2008 survey data from the National Postsecondary Student Aid Study (American Accounting Association, 2010). The AAA report indicated that approximately 40% of all students who reported a concentration in accounting were enrolled at two-year community colleges; 40.1% of accounting majors at two-year community colleges had plans to transfer to a four-year college or university; approximately 19% of all accounting majors at four-year colleges or universities earned at minimum some transfer credits (not necessarily in accounting) at a two-year community college; approximately 45% of all accounting majors at four-year colleges or universities have attended a two-year community college “at some point”; and 16.4% of all accounting majors at four-year colleges or universities have earned an associate’s degree at a community college (American Accounting Association, 2010).

A diverse student body enhances the educational experience of campus communities. According to the American Association of Community Colleges, “[c]ommunity colleges are the gateway to postsecondary education for many minority, low income, and first-generation postsecondary education students” (American Association of Community Colleges, 2015). Transfer students, who attended two-year institutions prior to their transition to a four-year institution, add to the diversity of the campus student population at four-year institutions. Diversity in higher education signifies campus-based educational activities that involve students from all backgrounds (Garcia et al, 2001). The objective of these activities is to enrich the educational experience of all students (Garcia et al, 2001). For example, diversity can improve students' cognitive skills, their ability to negotiate differences, and their critical thinking skills by exposure to multiple perspectives (Garcia et al, 2001). Managing student diversity in higher education provides significant benefits not only to the students, but also to their institutions, communities, and broader society (Milem et al, 2005; Bledsoe et al, 2010). Because transfer students comprise a significant number of accounting students at four-year institutions, the question arises whether community colleges prepare accounting transfer students for the rigors of upper-level accounting courses in a four-year institution.

This study provides empirical data on the academic performance of accounting students enrolled at a liberal arts undergraduate college in the Northeast United States over a four-year

period. The purpose of this study is to determine the academic performance of students who transfer from community colleges to an accounting program at a four-year institution, and how the academic performance of the transfer students compares to that of native students who fulfill all of their accounting course requirements at a four-year institution. In the 1990's, Colley et al. (1996) and Laband et al. (1997) analyzed the issue, but the results are dated (about twenty years old now) and may no longer reflect the current environment in accounting education.¹ A more recent study was conducted at a university in the Midwest; however, the results are derived from the data of a single institution, and the study suggests that other institutions should conduct similar internal studies (Schmidt and Wartick, 2013).

This study differs from the prior studies noted above as follows. First, prior studies were conducted at four-year institutions located in different geographical regions and institutional settings than our current study, and our four-year institution's average SAT score in this study is 1300 (Critical reading and math only) for entering freshmen.² Second, the number of accounting graduates in the current study each year is between 60-70 students, which is lower than other prior studies (e.g., Schmidt and Wartick's accounting program is twice as big as the current study) with smaller class sizes. This is particularly important because prior research suggests that smaller class sizes (in this study, upper-level class sizes were between 15-25 students) may foster a greater sense of belonging, which may expedite the transition of transfer students to a four-year college or university's academic and campus community (Johnson, 2005). Third, prior studies just compare all native students with transfer students, which may be the reason for their conflicting findings. In this study, we demonstrate the results when (1) all native students are compared with transfer students and (2) transfer students are matched with native students based on gender, year of graduation, 1st Accounting Principles course grade and 2nd Accounting Principles course grade (taken at the four-year college). Fourth, in contrast to prior studies, this study includes and can control for the second accounting principles course, taken by both transfer and native students at the four-year college, in order to test eight upper-level individual accounting courses from junior year to the date of graduation.³ Finally, seven full-time faculty taught upper-level accounting courses at the four-year college in our study. Each Intermediate I and II, Cost Accounting, Auditing, and Advanced Accounting course was taught by the same instructor (e.g., one instructor taught all class sections of Intermediate I and Intermediate II, another instructor taught all class sections of Cost Accounting, another instructor taught all class sections of Auditing, and so forth). Furthermore, the

¹ For example, technological advances have resulted in transformative changes in higher education. Educators have leveraged technology in the delivery of curricula (e.g., "blended" or "hybrid" learning, "flipping" the classroom). According to a survey of higher education leaders conducted by KPMG, 63% of those surveyed indicated that their institution is spending more to keep up with changes in technology; 53% reported that their institution is making more courses available online; and 48% responded that their institution is considering hybrid educational delivery models with virtual learning environments (KPMG, 2014).

² In comparison to Laband et al.'s (1997) average SAT score of 998 for native students (i.e., native students scored 539.441 and 458.851 on the math and verbal portions of the SAT respectively).

³ Because the transfer students in this study were required to fulfill the second accounting principles course at the four-year institution, the transfer students experienced no time lag between the second accounting principles course and the intermediate accounting I and cost accounting courses.

previous studies suggest periodic replication and additional investigation into performance variances between transfer and native students at other institutions.

The results of this current study may be of significance to administrators, counselors, and accounting faculty at four-year institutions in considering the rigor and quality of transfer credit from accounting courses at community colleges, articulation agreements between community colleges and four-year institutions, and support and mentoring programs available for transfer students at four-year institutions. The remainder of the paper is organized as follows. The next section provides the literature review, followed by the methods and results sections. The last section presents the conclusion, limitations and practical implications of the findings.

REVIEW OF LITERATURE

Researchers have conducted an ample number of studies to evaluate the “transfer phenomenon” and the impending “transfer shock” that students who transfer from a two-year institution to a four-year institution may experience during their first and second semesters after transfer. “Transfer shock” is the temporary dip in grades that transfer students may experience during the first and second semesters after transfer to a four-year college or university (Hill, 1965). In response to this theory, studies have compared the academic performance of transfer students with that of native students generally using GPA as the performance indicator and found that transfer students demonstrated lower achievement in comparison to native students in the first year after transfer (Peng and Bailey, 1977; Best and Gehring, 1993; Laanan, 2001). However, as the transfer students adapt to the academic environment and campus community of the four-year institution, their academic performance shows signs of improvement (Cohen and Brawer, 1989; Best and Gehring, 1993). The literature revealed that although close to fifty studies reported that community college students experienced transfer shock, sixty-seven percent of these studies concluded that the transfer students typically recovered from the transfer shock within the first year after transfer (Diaz, 1992). Furthermore, studies have determined that the time of transfer impacts the effect of the transfer shock, i.e., students who transferred to a four-year institution after completion of an associate’s degree or a minimum of sixty credits were less affected by transfer shock (Best and Gehring, 1993; Cejda et al., 1997).

Previous research suggests that the academic performance of transfer students at a four-year institution is related to the students’ chosen degree major (Cejda et al., 1997). In particular, business transfer students experience the most transfer shock in their first semester at the four-year institution in comparison to other majors (such as liberal arts, the arts, education and psychology), and earned significantly lower GPA’s in their upper division coursework than comparable native students (Carlan and Byxbe, 2000). A study that used the AICPA Accounting Achievement Testing Program determined that an accounting major transfer student may acquire the necessary basic accounting education at a community college to adequately prepare the student for successful completion of a four-year institution’s accounting program (Montgomery and McCormick, 1974). However, another study suggests that the quality of transfer students’ grades in accounting principles for coursework completed at a community college is not equivalent to the quality of nontransfer students’ grades in accounting principles taken at a four-year college or university (Colley et al., 1996).

Moreover, prior research indicates that GPA in the 1st accounting principles course and/or 2nd accounting principles course is significantly associated with performance in upper-level accounting courses (Laband et al., 1997; Schmidt and Wartick, 2013). Laband et al. (1997) examined the performance of transfer students in upper-level accounting classes at two Mid-Atlantic

universities in comparison to their native student counterparts, controlling for a number of variables including GPA in the accounting principles classes. The study found that although the mean GPA of transfer students for accounting principles classes was higher than for native students, the native students outperformed the transfer students in the upper-level accounting classes, suggesting evidence of grade inflation at the two-year institutional level (Laband et al., 1997).

Schmidt and Wartick (2013) conducted a more recent study at a university in Iowa and found that students who transferred their principles of accounting courses from a two-year institution performed worse than native students in intermediate accounting I and cost accounting courses. The study suggests that a possible reason for the lower performance is due in part to an average time lag of more than two years between transfer students taking principles of accounting and intermediate accounting I and cost accounting. The study concluded that although the transfer students were outperformed by their native counterparts in intermediate accounting II, accounting information systems, auditing and income tax, the transfer students narrowed the performance gap in these courses suggesting that transfer shock lessened in later semesters, but did not entirely disappear. The study also suggests evidence of grade inflation at two-year institutions in finding that transfer students performed significantly worse in the upper-level accounting courses even though the transfer students obtained higher mean GPAs in principle accounting courses than native students (Schmidt and Wartick, 2013).

Based on the review of prior literature, the following hypothesis, stated in null form, will be tested:

H1: There is no difference between transfer and native students in their performance of upper-level accounting courses.

METHOD

The subjects of this study were graduates of a liberal arts undergraduate college in the Northeast United States over a four-year period (2011–2014). The college is a selective college with an average SAT score of 1300 (Critical reading and math only) for entering freshmen. The number of accounting graduates each year is between 60 to 70 students. The upper-level accounting courses at the four-year college are offered in the following sequence:⁴

<u>Year</u>	<u>Semester</u>	<u>Courses</u>
Junior	Fall	Intermediate Accounting I, Cost Accounting
Junior	Spring	Intermediate Accounting II, Accounting Information Systems
Senior	Fall	Federal Income Tax, Advanced Accounting, Auditing
Senior	Spring	Accounting Capstone

During the time period of this study, the accounting department graduated 244 students of which 38 were transfer students. After excluding two students who transferred from other four-year colleges, the final sample size for transfer students from community colleges was 36. The first

⁴ According to the study institution's Office of Records and Registration, the study institution uses the following grading system:

A = 4.00	B = 3.00	C = 2.00	D = 1.00
A- = 3.67	B- = 2.67	C- = 1.67	F = 0.00
B+ = 3.33	C+ = 2.33	D+ = 1.33	

accounting principles course at the four-year college was mainly taught by adjunct faculty and included all business students. The second accounting principles course at the four-year college consisted of two separate courses, i.e., one for accounting students and one for all other business students. The second accounting principles course that accounting students were required to take included managerial accounting for half of the semester and the first five chapters of intermediate accounting. It is important to note that all transfer students in accounting were required to fulfill the second accounting principles course at the four-year college even though the transfer student already completed a second accounting principles course at a community college.⁵

Since dependent variables in this study are different accounting courses taken by the same students, a Multivariate Analysis of Covariance (MANCOVA) is used to test the hypothesis of the study. We used three covariates of gender, year of graduation, and grade in the second accounting principles course (taken at the four-year college). Because data was obtained over a four-year period, year of graduation was used as a covariate. Graduation year indirectly measures and controls for the accounting course grades given by different instructors of the same course.⁶ In addition, the performance gap between transfer and native students could be caused by 1) "transfer shock", 2) community college grade inflation, 3) possible lack of rigor in community college accounting principles courses, and 4) differences in aptitude between transfer and native students. Since all students included in this study took the second accounting principles course at the four-year college, we used the grade in the 2nd accounting principles course as a covariate to control for community college grade inflation, possible lack of rigor in the community college accounting principles courses, and differences in ability between transfer and native students. Therefore, the only factor that remains is "transfer shock" that this study investigates.

It should be noted that transfer students are allowed to bypass the second accounting principles course at the four-year college if they could transfer two accounting principles courses as well as intermediate accounting I. Seven students satisfied this requirement, which had to be excluded from the analysis. The final sample sizes for MANCOVA were 29 transfer students and 206 native students.

The data were extracted from student transcripts.⁷ For this study, we obtained approval from the Institutional Review Board to use data from official student transcripts of the study institution's Office of Records and Registration. Of the total subjects of 235 students, 110 were female students (96 native and 14 transfer students) and 125 (110 native and 15 transfer students) were male students. The students were predominantly Caucasian students (99%) and under 25 years old (99%).

⁵ All transfer students in the current study had taken both their first and second accounting principles courses at community colleges before transferring to the four-year college.

⁶ Accounting Information Systems, Federal Income Tax, and Accounting Capstone courses were taught by different instructors during the period of this study (e.g., there were three class sections of Accounting Capstone offered in the Spring, and a different instructor taught each class section for the Spring semester). The other upper level accounting courses, including the 2nd accounting principles course, were taught by the same instructors (e.g., one instructor taught all class sections of Intermediate I and Intermediate II, another instructor taught all class sections of Cost Accounting, another instructor taught all class sections of Auditing, and so forth).

⁷ For students who took a course multiple times, the grade when they took the course for the first time was included in the analyses.

RESULTS

The study hypothesis was tested using a One-Way Multivariate Analysis of Covariance (MANCOVA). In order to help control potential type-I error due to the existence of several dependent variables, One-Way MANCOVA was used to determine the potential effects of native versus transfer students on the accounting courses grades. In addition, MANCOVA was used because the Bartlett test of sphericity showed that the dependent variables were correlated (approximate Chi-Square=2358.48, $df=44$, $p<.001$).⁸ Descriptive statistics and intercorrelations of the dependent variables are presented in Table 1.

TABLE 1

Descriptive Statistics and Intercorrelations of Dependent Variables

Dependent Variables	Range	Mean	s.d.	1	2	3	4	5	6	7	8
1. Intermediate Accounting I	0-4	2.60	0.81								
2. Cost Accounting	1-4	3.07	0.65	.74							
3. Intermediate Accounting II	0-4	2.87	0.75	.77	.67						
4. Accounting Information Systems	0-4	3.20	0.63	.44	.47	.51					
5. Federal Income Tax	0-4	3.46	0.58	.52	.45	.52	.41				
6. Advanced Accounting	0-4	2.70	0.93	.63	.62	.67	.50	.56			
7. Auditing	0-4	2.74	0.62	.55	.56	.59	.59	.59	.67		
8. Accounting Capstone	1.33-4	3.53	0.56	.30	.27	.28	.23	.40	.22	.33	
9. Upper-Level Accounting Courses GPA	1.00-4	3.02	0.53	.84	.80	.85	.68	.72	.83	.80	.47

All correlations are significant at $p<.01$ (two-tailed)

$n=235$, Theoretical range for all variables = 0-4

Upper-level accounting courses include: Intermediate Accounting I and II, Cost Accounting, Accounting Information Systems, Federal Income Tax, Advanced Accounting, Auditing, and Accounting Capstone.

As Table 1 shows, while dependent variables are moderately correlated, and therefore, use of MANCOVA is justified, there is no high multicollinearity (more than .9) present among the dependent variables. The mean and standard deviation of native versus transfer students for different accounting courses are presented in Table 2.

Table 2 shows that the smallest cell has 29 subjects. Lauter (1978) reports that for two groups, nine dependent variables⁹, alpha of .01, beta of .05, and 2 deviation from the hypothesis, the minimum sample size per cell is 22 subjects. MANCOVA normality assumption was violated for all groups except for cost accounting, intermediate accounting II, auditing and upper-level

⁸ A factor analysis of all accounting courses indicated only one factor is present, which explained 58% of the variance.

⁹ Lauter (1978) provides sample size for 8 and 10 dependent variables. We used the more conservative number of 10 dependent variables.

TABLE 2
Means and Standard Deviations for the Effect of Native
Versus Transfer Students on Accounting Course Grades

Course	Native Students (n=206)		Transfer Students (n=29)	
	Mean	Std. Dev.	Mean	Std. Dev.
Intermediate Accounting I	2.63	.79	2.39	.93
Cost Accounting	2.77	.71	3.07	.65
Intermediate Accounting II	2.88	.77	2.82	.65
Accounting Information Systems	3.20	.65	3.18	.47
Federal Income Tax	3.46	.59	3.46	.51
Advanced Accounting	2.74	.94	2.36	.73
Auditing	2.76	.63	2.61	.58
Accounting Capstone	3.54	.54	3.46	.71
Upper-Level Accounting Courses GPA	3.04	.53	2.88	.52

accounting courses grades for transfer students (Shapiro-Wilk test, $p > .05$). Since MANCOVA is fairly robust to deviations from normality, no action was taken to correct for the normality assumption. There were six multivariate outliers in the data, as assessed with Mahalanobis distance ($P < .001$).¹⁰ We reran one-way MANCOVA after omitting these student outliers and found the same results except for the upper-level accounting courses GPA which became significant at $p < .05$. Therefore, all students are included for the analysis reported in this study. Finally, the assumption of equality of variance-covariance matrix was examined by checking the variance-covariance matrix of all dependent variables. All variances of native students for each upper-level accounting course grade were less than three times the corresponding variance of transfer students for the same upper-level accounting course grade. Therefore, we concluded that there was homogeneity of variance-covariance matrices in this study. In addition, Levene's test of equality of variance was not significant for any of the dependent variables ($p > .05$).

Within the group results of the multivariate analysis based on Pillai's trace¹¹ are presented in Table 3. The results in Table 3 show that the covariates of graduation year and the 2nd accounting principles course grade were significant ($p < .001$). There was a statistically significant difference between native and transfer students on accounting courses grades, $F(9, 222) = 2.139$, $p < .05$; Pillai's Trace = .080; partial $\eta^2 = .080$. The observed power was .875, therefore, we can accept with confidence that the chance of a Type II error is low enough for a finding of non-significance by the F test.

Test of between-subjects effects are presented in Table 4. Table 4 shows that the covariate Year is significant for the Accounting Information Systems, Federal Income Tax, and Accounting Capstone courses. As expected, the 2nd Accounting Principles course covariate, which measured

¹⁰ For the nine dependent variables, the Chi-square critical value is 27.88. Six of the Mahalanobis distance values were higher than this critical value.

¹¹ Wilks' Lambda and Hotelling's Trace provided similar results; thus, only Pillai's Trace statistics are reported.

TABLE 3**Within Group Results of One-Way Multivariate Analysis of Covariance (MANCOVA)**

<u>Effect</u>	<u>Pillai's Trace Value</u>	<u>Approximate F</u>	<u>Hypothesis df</u>	<u>Error df</u>	<u>Significance (p)</u>
Intercept	.784	89.287	9	222	p<.001
Year	.318	11.510	9	222	p<.001
Gender	.070	1.867	9	222	n.s.
2 nd Accounting Principles	.495	24.136	9	222	p<.001
Native vs. Transfer Students	.080	2.139	9	222	p<.05

TABLE 4**Test of Between-Subjects Effects**

<u>Dependent Variable</u>	<u>Independent Variables</u>	<u>F(4,230)</u>	<u>p</u>	<u>R²/Adj R²</u>
Intermediate Accounting I	Corrected Model	48.760	.000	.459/.449
	Intercept	2.290	.132	
	Year	2.068	.152	
	Gender	.319	.573	
	2 nd Accounting Principles	189.302	.000	
	Native vs. Transfer students	3.910	.049	
Cost Accounting	Corrected Model	33.318	.000	.357/.356
	Intercept	73.966	.000	
	Year	2.424	.121	
	Gender	.926	.337	
	2 nd Accounting Principles	122.193	.000	
	Native vs. Transfer students	10.600	.001	
Intermediate Accounting II	Corrected Model	25.511	.000	.307/.295
	Intercept	24.094	.000	
	Year	.863	.354	
	Gender	.313	.577	
	2 nd Accounting Principles	95.474	.000	
	Native vs. Transfer students	206	.651	
Accounting Information Systems	Corrected Model	15.636	.000	.214/.200
	Intercept	117.382	.000	
	Year	8.425	.004	
	Gender	5.698	.018	
	2 nd Accounting Principles	45.360	.000	
	Native vs. Transfer students	.039	.861	

(continued)

TABLE 4 (continued)

<u>Dependent Variable</u>	<u>Independent Variables</u>	<u>F(4,230)</u>	<u>p</u>	<u>R²/Adj R²</u>
Federal Income Tax	Corrected Model	18.225	.000	.241/.227
	Intercept	302.687	.000	
	Year	22.449	.000	
	Gender	6.192	.014	
	2 nd Accounting Principles	55.540	.000	
	Native vs. Transfer students	.041	.904	
Advanced Accounting	Corrected Model	19.589	.000	.254/.241
	Intercept	4.630	.032	
	Year	.560	.455	
	Gender	.050	.822	
	2 nd Accounting Principles	67.760	.000	
	Native vs. Transfer students	5.739	.017	
Auditing	Corrected Model	13.557	.000	.191/.177
	Intercept	96.129	.000	
	Year	1.610	.206	
	Gender	7.635	.006	
	2 nd Accounting Principles	48.468	.000	
	Native vs. Transfer students	1.680	.196	
Accounting Capstone	Corrected Model	11.435	.000	.166/.151
	Intercept	481.990	.000	
	Year	36.357	.000	
	Gender	3.861	.051	
	2 nd Accounting Principles	8.491	.004	
	Native vs. Transfer students	.571	.451	
Upper-Level Accounting Courses Grades	Corrected Model	37.463	.000	.395/.384
	Intercept	159.980	.000	
	Year	2.388	.124	
	Gender	3.938	.048	
	2 nd Accounting Principles	145.747	.000	
	Native vs. Transfer students	3.588	.059	

students' aptitude in accounting courses, was significant for all upper-level accounting courses grades.

Table 4 also indicates that the test of between subjects effects are statistically significant between native and transfer students for Intermediate Accounting I [$F(4, 230) = 3.910, p < .05$], Cost

Accounting [$F(4, 230) = 10.600, p < .01$], Advanced Accounting [$F(4, 230) = 5.739, p < .05$], and Upper-Level Accounting Courses GPA [$F(4, 230) = 3.588, p < .10$]. Furthermore, Table 4 shows that the values of R^2 generally decrease when going from the first upper-level accounting course (Intermediate Accounting I) to the last upper-level accounting course (Accounting Capstone Course). This indicates that the independent variables included in our model better explain early upper-level accounting courses grades.

Estimated marginal means and standard errors of native versus transfer students for different accounting courses are presented in Table 5. Table 5 indicates that after adjusting for covariates at their means, native students had higher marginal means on all upper-level accounting courses grades except Federal Income Tax. However, only the means were significant for Intermediate Accounting I, Cost Accounting, and Advanced Accounting. These findings further support the “transfer shock” theory.

TABLE 5

Marginal Means and Standard Errors for Native Versus Transfer Students on Accounting Course Grades

Course	Native Students (n=206)		Transfer Students (n=29)	
	Mean	Std. Error	Mean	Std. Error
Intermediate Accounting I	2.633	.042	2.398	.111
Cost Accounting	3.113	.036	2.775	.097
Intermediate Accounting II	2.875	.044	2.818	.118
Accounting Information Systems	3.202	.039	3.180	.104
Federal Income Tax	3.454	.035	3.466	.094
Advanced Accounting	2.742	.056	2.359	.150
Auditing	2.756	.039	2.611	.105
Accounting Capstone	3.543	.036	3.466	.096
Upper-Level Accounting Courses GPA	3.040	.029	2.884	.077

Marginal means are estimated using covariates at the following values: Year = 2.5149, Gender = .532, 2nd Accounting Principles Course Grade = 2.8339

FURTHER ANALYSIS

In order to confirm that the one-way MANCOVA results are robust, a t-test was performed on upper-level accounting courses grades after matching each of the 29 transfer students with a student at the four-year college based on gender, year of graduation, and the 1st and 2nd Accounting Principles courses grades. The results are presented in Table 6.

As can be seen in Table 6, there are no significant differences between native and transfer students on the first accounting principles course and the second accounting principles course (taken at the four-year college). This indicates that the matching of native and transfer students has been successful. Table 6 further shows that similar to the one-way MANCOVA, there are significant differences between native students and transfer students in Intermediate Accounting I, Cost Accounting, Advanced Accounting, and Upper-Level Accounting Courses GPA. The magnitudes of difference, on average, are .45 for Intermediate Accounting I, .45 for Cost Accounting, and .65

for Advanced Accounting. Overall, native students performed .29 grade points better than transfer students in the Upper-Level Accounting Courses GPA. The highest grade point difference is in the first semester of the junior year, which corresponds with the transfer shock phenomena.

TABLE 6

Comparison of Accounting Course Grades of Native and Transfer Students (Matched Based on Gender, Year of Graduation, and 2nd Accounting Principles Course Grade)

Course	Native Students (n=29)		Transfer Students (n=29)		t-value	p value
	Mean	Std. Dev.	Mean	Std. Dev.		
1 st Accounting Principles	3.77	.358	3.84	.352	-.740	.463
2 nd Accounting Principles	2.82	.581	2.83	.567	-.075	.940
Intermediate Accounting I	2.84	.646	2.39	.931	2.132	.037
Cost Accounting	3.22	.449	2.77	.714	2.863	.006
Intermediate Accounting II	3.07	.580	2.82	.647	1.569	.122
Accounting Information Systems	3.33	.399	3.18	.468	1.318	.193
Federal Income Tax	3.56	.400	3.46	.515	.846	.401
Advanced Accounting	3.01	.639	2.36	.734	3.622	.001
Auditing	2.84	.476	2.61	.578	1.651	.104
Accounting Capstone	3.52	.531	3.46	.709	.350	.728
Upper-Level Accounting Courses GPA	3.17	.351	2.88	.521	2.461	.017

CONCLUSION AND LIMITATIONS

This study provides further evidence that community college students, who subsequently transferred to an accounting program at a four-year institution, earned statistically significant lower grades in Intermediate Accounting I, Cost Accounting and Advanced Accounting courses in comparison to their native student counterparts. A one-way multivariate analysis of covariance (MANCOVA) was used to determine if there was a difference between transfer and native students in their performance of upper-level accounting courses. The dependent variables in this study were different accounting courses taken by the same students. The year of graduation, gender, and grade in the second accounting principles course (taken at the four-year college) were used as covariates.

Overall, the results indicate that after adjusting for covariates at their means, native students had higher marginal means on all upper-level accounting courses grades except for Federal Income Tax. However, only the means for Intermediate Accounting I, Cost Accounting, and Advanced Accounting were significant. Further analysis was conducted using a t-test performed on the upper-level accounting courses grades after matching each of the 29 transfer students with a student at the four-year college based on gender, year of graduation, 1st Accounting Principles course grade and 2nd Accounting Principles course grade (taken at the four-year college). The results of the further analysis again indicated significant differences between native students and transfer students in Intermediate Accounting I, Cost Accounting, Advanced Accounting, and Upper-Level Accounting Courses GPA.

The results indicate that the highest grade point difference occurred in the first semester of the transfer students' junior year, which corresponds with the theory of transfer shock. Accordingly, this study further supports the assertion that community college students experience transfer shock during their first semester at the four-year institution, and the transfer students in this study failed to recover their GPAs in upper-level accounting courses in comparison to the native students.

These results confirm that transfer students in accounting may need academic and social support services to ease the transition from the community college environment to the academic and campus community of a four-year institution. Prior studies suggest that transfer students typically experience academic issues regarding academic performance, advising and planning, faculty contact, and social concerns such as self-confidence level, transition and acclimation to the new environment, and personal management (Eggleston and Laanan, 2001). Programs that provide academic advising, tutoring, career counseling, faculty and student contact, campus orientation programs, and mentoring specifically designed with the transfer student in mind may help to facilitate and better ensure their academic success after transfer to a four-year institution (Thurmond, 2007).

As noted earlier, Johnson (2005) suggested that small class sizes may foster a greater sense of belonging, and geographical isolation of the four-year institution's campus may expedite the transition of transfer students to a four-year college or university's academic and campus community. The results of this study do not support the proposition that small classes expedite the transition of transfer students to a four-year college or university. The college in this study was close to a metropolitan area, and there was no geographical isolation. Future research may attempt to see if a combination of small classes and geographical isolation can affect earlier transition of transfer students to a four-year college or university's academic and campus community.

Lastly, a recent study evaluated the effects of a mentoring program in which native students from a four-year institution mentored community college students in transition to the four-year institution (Hoffman and Wallach, 2005). The study found that as a result of the mentor program, the community college students displayed higher self-esteem, increases in self-report measures of internal locus control, and higher academic performance and motivation (Hoffman and Wallach, 2005).

Although this study adds to the existing body of research and evidence, the study is limited in scope and should not be used to draw generalized conclusions. First, this study examined a sample from a single institution. Therefore, the results concern the study institution, and, except for four-year institutions in similar environments as the study institution, the study may not be generalizable to other four-year institutions. Second, the length of the study is over a four-year period, which may not be sufficient to examine the accounting education experience of community college transfer students in comparison to native students who fulfill all of their accounting course requirements at a four-year institution. Additional research is suggested to determine whether higher grades in accounting principles I and II courses fulfilled at community colleges result from grade inflation (as suggested in prior studies), or from an easier and less rigorous curriculum at the two-year institutions. In either event, the prevailing literature suggests that transfer students need support in their transition to a four-year institution. Therefore, additional research is suggested that focuses on modifications and interventions to overcome transfer shock and explores the impact of such interventions.

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