FACTORS ASSOCIATED WITH STUDENT PERFORMANCE IN AUDITING AND CONTEMPORARY FINANCIAL ACCOUNTING ISSUES

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ABSTRACT

No prior study that we are aware of has considered the associations between motivation, actual ability, self-perceived ability, and distraction factors and student performance in advanced level undergraduate accounting courses. This study considers the associations between these four factors and student performance in Auditing and Contemporary Financial Accounting Issues. Students enrolled in a highly diversified, commuter, public university located in one of the largest cities in the United States provided responses to 12 questions used as independent variables.

Of the three variables used as proxies for motivation, the grade the student would like to make in the course was found to be significantly associated with student performance, but intention to take the CPA exam or attend graduate school were not. Additionally, the grade in Intermediate Accounting II and GPA (used as proxies for actual ability) were found to be strong predictors of student performance. Self-perceived reading and writing abilities had strong associations with student performance, but self-perceived math and listening abilities did not. Finally, holding non-accounting-related jobs, working high numbers of hours per week, and taking on higher course loads during the semester are factors which were, surprisingly, not significantly correlated with student performance.

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INTRODUCTION

As the review of prior research below indicates, many studies have explored various factors that are associated with student performance in college-level accounting courses. However, no prior study, that we are aware of, has considered the association between motivation, prior actual ability, current self-perceived ability, and distraction factors and student performance in advanced level undergraduate accounting courses. This study considers the associations between these factors and student performance in Auditing and Contemporary Issues in Financial Accounting Issues (CIFA) courses.

The objective of the study is predicated on the assumption that identification of some factors that are associated with student performance and some factors that are not may help us to emphasize those factors that improve student performance and de-emphasize those factors that do not.

In the following parts of the paper we present a review of prior research, and we describe the study variables, hypotheses, sample, statistical tests, and research results. We end the paper with some conclusions, recommendations, study limitations, and some suggestions for further research.

REVIEW OF PRIOR RESEARCH

Prior studies have explored various factors (e.g., aptitude, general academic performance, prior exposure to accounting, prior exposure to mathematics, age, and gender) that are associated with student performance in college-level accounting courses. Grade point average (GPA) is used frequently as a proxy for aptitude and prior academic performance. For example, researchers using US data find evidence supporting GPA as a significant predictor of performance in accounting courses (Eckel and Johnson 1983; Hicks and Richardson 1984; Ingram and Peterson 1987; Eskew and Faley 1988; Doran, Bouillon, and Smith 1991). The US findings are supported in Australia by Jackling and Anderson (1998). However, using another measure, pre-university examination performance, Gist, Goedde, and Ward (1996) find no significant association between academic performance and performance in university accounting courses.

Accounting is a subject area that requires accumulation of prior knowledge and considerable quantitative skills. Therefore, several studies have investigated the impact of prior exposure to accounting and mathematical background courses on performance in college accounting courses. However, the results are inconclusive. Some studies (for example, Baldwin and Howe 1982; Bergin 1983; and Schroeder 1986) find that performance is not significantly associated with prior exposure to high school accounting education. However,

some later studies (for example, Eskew and Faley 1988; Bartlett, Peel and Pendlebury 1993; Gul and Fong 1993; Tho 1994; Rohde and Kavanagh 1996) find that prior accounting knowledge, obtained through high school education, is a significant determinant of performance in college-level accounting courses. Conflicting results are also observed about the association between student performance in introductory accounting and their performance in non-introductory accounting courses. Canlar (1986) finds evidence that college-level exposure to accounting is positively related to student performance in the first MBA-level financial accounting course. However, Doran, Bouillon, and Smith (1991) show that performance in the introductory accounting course has a negative impact on performance in subsequent accounting courses. The influence of mathematical background on performance in accounting courses is also ambiguous. Eskew and Faley (1988) and Gul and Fong (1993) suggest that students with strong mathematical backgrounds outperform students with weaker mathematical backgrounds. However, a later study (Gist, Goedde, and Ward 1996) does not report the same results.

Two demographic variables, age and gender, receive less attention than those factors discussed above. Bartlett, Peel and Pendlebury (1993) and Koh and Koh (1999) suggest that younger students have better performance, particularly at the senior university level. Jenkins (1998) and Lane and Porch (2002) conclude that age is not a significant determinant for performance in auditing and management accounting courses. There are studies indicating that male students perform better than female ones. However, the results are either insignificant (for example, Lipe 1989) or only hold true for introductory courses (Doran, Bouillon and Smith 1991). One study finds that female students score significantly higher than male students (e.g., Mutchler, Turner and Williams 1987). However, other studies find no significant differences in performance between male and female accounting students. For example, Tyson (1989) and Buckless, Lipe, and Ravenscroft (1991) demonstrate that gender effect disappears when general academic ability is controlled for in the model.

One study shows that motivation and effort, among other factors, significantly influence individual performance in college (e.g., Pascarella and Terenzini 1991). Other studies have explored the association between effort and performance in the area of finance. For example, using self-reported data, Didia and Hasnat (1998) present contra-intuitive evidence that the more time spent studying per week, the lower the grade in the introductory finance course. However, another study (Nofsinger and Petry 1999) also uses self-reported data and finds no significant relationship between effort and performance. Johnson, Joyce and Sen (2002) utilize computerized quizzes and analyze the effect of objectively measured effort on student performance. Their evidence shows that, after controlling for aptitude, ability, and gender, effort remains significant in explaining the differences in performance.

STUDY VARIABLES

We use two dependent variables and 12 independent variables in the study. The two dependent variables are *points* (the actual average number of points) and *grade* (A, B, etc.) a given student received in a given course. The 12 independent variables include the grade the student would like to make in the course, student intention to take the CPA exam, student intention to attend graduate school, student's grade in Intermediate Accounting II,

student's Grade Point Average (GPA), students perceptions of their writing, math, reading and listening abilities, student's job type outside of school, number of hours of work per week, and number of courses the student is taking per semester.

Categorization of Independent Variables

We classify the 12 independent variables into four categories of factors that may be associated with students' performance in Auditing and CIFA courses as follows: *Category 1: Motivation,* includes the first three variables; *Category 2: Prior Actual Ability:* includes the next two variables; *Category 3: Current Self-perceived Ability:* includes the following four variables; and *Category 4: Distraction:* includes the last three variables. We discuss below the research hypotheses under each of the four categories.

STUDY HYPOTHESES

Motivation Factors

The first category, *motivation*, includes three variables:

The first variable is the grade the student would like to make in the course**.** Our hypothesis is that students who would like to make higher grades are motivated to perform better to achieve their wish. On the other hand, students who report that "a C is fine with them" are probably not that motivated. To eliminate redundancy we will not give the null hypotheses but will state all our hypotheses in the alternate form as shown below:

H_{a1}: There is a positive association between the grade a given student would like to make and that student's performance in Auditing and CIFA courses.

The second variable is whether the student intends to take the CPA exam. Our hypothesis is that students who intend to take the CPA exam are more motivated to work hard to increase their chances of passing that exam and, therefore, they will earn higher grades than students who do not intend to take the CPA exam.

H_{a2}: There is an association between a student's intention to take the CPA exam and that student's performance in Auditing and CIFA courses.

The third motivation variable is whether the student intends to attend graduate school. Our hypothesis is that students who have that intention are more motivated to work hard to increase their chances of getting accepted at a good graduate school and, therefore, they will earn higher grades than students who do not intend to go to graduate school.

H_{a3}: There is an association between a student's intention of attending graduate school and that student's performance in Auditing and CIFA courses.

Prior Actual Ability Factors

The second category, prior actual ability, includes two variables:

The first variable is the student's grade in Intermediate Accounting II. Our hypothesis is that students who earned higher grades in Intermediate Accounting II (which is a prerequisite for advanced level accounting courses) will earn higher grades in Auditing and CIFA courses.

H_{a4}: There is a positive association between a student's grade in Intermediate Accounting II and that student's performance in Auditing and CIFA courses.

The second variable is the student's cumulative GPA. Our hypothesis is that students with higher cumulative GPAs will earn higher grades in Auditing and CIFA courses.

H_{a5}: There is a positive association between a student's cumulative GPA and that student's performance in Auditing and CIFA courses.

Current Self-Perceived Ability Factors

The third category, current self-perceived ability, includes four variables. These four variables represent students' perceptions of their writing, math, reading, and listening abilities. Our hypotheses are that students who perceive their writing, math, reading, and listening abilities to be good or very good will earn higher grades in Auditing and CIFA courses than students who perceive their abilities in these four areas to be average or poor.

H_{a6}: There is a positive association between a student's perception of his/her writing ability and that student's performance in Auditing and CIFA courses.

H_{a7}: There is a positive association between a student's perception of his/her math ability and that student's performance in Auditing and CIFA courses.

H_{a8}: There is a positive association between a student's perception of his/her reading ability and that student's performance in Auditing and CIFA courses.

H_{a9}: There is a positive association between a student's perception of his/her listening ability and that student's performance in Auditing and CIFA courses.

Distraction Factors

The fourth category, distraction, includes three variables:

The first variable is the student's job type outside of school. Our hypothesis is that students whose jobs outside of school are non-accounting-related will be distracted by their jobs without gaining any understanding of accounting practice that might compensate for spending less time studying and will, therefore, end up earning lower grades in Auditing and CIFA courses than students whose jobs are accounting related.

H_{a10}: There is an association between a student's type of job outside of school and that student's performance in Auditing and CIFA courses.

The second variable is the number of hours per week the student works outside of school. Our hypothesis is that students who work more hours outside of school are more distracted because they will spend less time studying and, therefore, will earn lower grades than students who work fewer hours or who do not work at all.

H_{a11}: There is a negative association between a student's number of hours of work per week outside of school and that student's performance in Auditing and CIFA courses.

The third variable is the number of courses per semester the student is taking. Our hypothesis is that students who are taking more courses than average are more distracted because they spend less time studying per course and, therefore, will earn lower grades than students who take fewer courses.

H_{a12}: There is a negative association between a student's course load and that student's

performance in Auditing and CIFA courses.

STUDY SAMPLE

The study sample includes 75 students enrolled in Auditing and CIFA courses at a major metropolitan university. The university in which we conducted this study is a commuter public university located in one of the largest cities in the United Sates and enrolls about 12,500 students. The student body is very diverse as minority students (mostly Hispanic and Asian) account for over 50%. Most of the students are the first generation in their family to attend college. About 80% of our students work almost full time. They combine studying with working and raising a family. We modified a list of survey questions, from Ingram et al. (2002), to include, besides the study variables, some demographic and other information, and distributed it to students in Auditing and CIFA courses. To increase the sample size, we collected data over three consecutive semesters: Spring, Summer, and Fall of 2004. To avoid any possible instructor effect, we made sure that if a course is taught more than once during the three semesters, it was taught by the same instructor. Furthermore, to make sure that there are no significant differences in responses from semester to semester, we ran the statistical models using the responses for each semester separately. We then compared the responses for each semester to the other semesters, and we found no significant differences. Our final sample included 73 useful responses (46 from the Auditing course and 27 from the CIFA course).

STATISTICAL TESTS AND RESEARCH RESULTS

At the beginning of this research project we defined the dependent variable, student performance, only as the letter grade (e.g., A, B, etc.) a given student would receive for the course. However, after discussions with the faculty teaching the two courses used for the study, we realized that using the letter grade to operationally define student performance had three drawbacks: (a) some faculty curve upward the average actual points received by every student before they determine the letter grade, (b) because we do not attach pluses or minuses to the letter grades at our school, the letter grade treats a student receiving the lowest end of the grade range as having the same exact performance as that of a student receiving the highest end of the grade range (e.g., a student with actual average points of 80 and another with actual average points of 89 would be considered having equal performance since both students receive a B for the course), and (c) the letter grade point averages of 4, 3, and 2 are not continuous and thus do not allow the use of multivariate models to test the hypotheses. As a result, in addition to using the grade to define performance, we decided to use the actual average number of points (including mid-term and final examinations as well as cases, papers and other projects) a given student received for the course before any upward curving made by the faculty. All points used in the study were based on a maximum total of 100 points. Some faculty members used total points of more than 100 to measure their students' performance; however, they converted those points to a number out of a maximum of 100 before giving them to us. We used the one-way analysis of variance (ANOVA) statistical model to test our hypotheses with the dependent variable defined as points. Table 1 presents

the results of that test. Because the dependent variable defined as "grade" is a categorical variable, we used the Pearson and Spearman statistical tests instead of ANOVA. Table 2 presents the Pearson and Spearman correlation coefficients for "grade." Because the prior actual ability variables (the grade in Intermediate Accounting II and the cumulative GPA) may derive most of the significant associations that we obtain, we ran the Pearson and Spearman partial correlation tests to control for these prior actual ability variables. Table 3 presents these partial correlations.

Table 1

Analysis of Variance for Students' Performance Measured by Points

Panel A: ANOVA for points using variable grademk

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Grademk	2	547.23	273.61	5.77	0.01
Error	61	2890.71	47.39		
Corrected Total	63	3437.94			

Panel B: ANOVA for points using variable cpa

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Cpa	2	63.69	31.85	0.62	0.54
Error	67	3440.95	51.36		
Corrected Total	69	3504.64			

Panel C: ANOVA for points using variable grad

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Grad	3	265.61	88.54	1.80	0.16
Error	66	3239.03	49.08		
Corrected Total	69	3504.64			

Panel D: ANOVA for points using variable grade322

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
grade322	2	1322.45	661.23	19.94	<.0001
Error	65	2155.43	33.16		
Corrected Total	67	3477.88			

Panel E: ANOVA for points using variable gpac

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Gpac	2	765.26	382.63	9.35	0.00
Error	62	2536.67	40.91		
Corrected Total	64	3301.94			

Panel F: ANOVA for points using variable write

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Write	3	736.53	245.51	5.45	0.00

Error	60	2701.41	45.02		
Corrected Total	63	3437.94			

Panel G: ANOVA for points using variable math

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
math	2	138.37	69.18	1.26	0.29
Error	60	3290.62	54.84		
Corrected Total	62	3428.98			

Panel H: ANOVA for points using variable read

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Read	3	658.27	219.42	4.74	0.01
Error	60	2779.67	46.33		
Corrected Total	63	3437.94			

Panel I: ANOVA for points using variable listen

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Listen	3	179.88	59.96	1.10	0.35
Error	60	3258.06	54.30		
Corrected Total	63	3437.94			

Panel J: ANOVA for points using variable job

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Job	3	38.79	12.93	0.26	0.85
Error	63	3143.84	49.90		
Corrected Total	66	3182.63			

Panel K: ANOVA for points using variable hrs

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Hrs	4	188.41	47.10	0.94	0.45
Error	63	3164.48	50.23		
Corrected Total	67	3352.88			

Panel L: ANOVA for points using variable load

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Load	5	430.19	86.04	1.79	0.13
Error	64	3074.46	48.04		
Corrected Total	69	3504.64			

Table 2

Pearson and Spearman correlation coefficients for grade[a]

	grade	*grademk*	*Cpa*	*grads*	*grade322*	*Gpac*	*write*	*math*	*read*	*listen*	*job*	*hrs*	*Load*
Grade		0.39***	-0.02	-0.25**	0.54***	0.46***	0.40***	0.00	-0.13	0.06	0.02	-0.04	0.32***
grademk	0.40***		-0.14	0.00	0.41***	0.24*	0.05	0.04	-0.18	0.15	-0.21	-0.18	0.09
Cpa	-0.03	-0.16		0.06	0.10	-0.04	-0.26**	-0.25*	-0.16	-0.22*	0.10	-0.09	-0.04
Grad	-0.27**	0.03	0.08		-0.07	-0.06	-0.32***	0.31**	0.01	0.11	0.17	-0.07	-0.04
Grade322	0.55***	0.41***	0.09	-0.11		0.46***	0.17	-0.12	-0.02	0.12	0.16	-0.05	0.22*
Gpac	0.50***	0.30**	0.02	-0.05	0.51***		0.34***	0.13	0.02	0.22*	-0.04	-0.05	0.12
Write	0.41***	0.05	-0.26**	-0.32***	0.20	0.37***		0.05	0.24*	0.20	0.03	0.26**	0.16
Math	0.04	0.04	-0.23*	0.25*	-0.09	0.11	0.03		0.01	0.01	0.02	-0.01	0.11
Read	-0.04	-0.22*	-0.17	-0.02	0.05	0.14	0.28**	0.09		0.20	-0.03	0.04	-0.01
Listen	-0.03	0.18	-0.21*	0.14	0.05	0.16	0.17	0.01	0.26**		-0.20	0.01	0.18
Job	0.01	-0.22*	0.10	0.14	0.14	-0.08	0.06	0.06	-0.03	-0.17		0.10	0.28**
Hrs	-0.05	-0.20	-0.09	-0.10	-0.07	-0.04	0.27**	-0.04	0.02	0.01	0.03		-0.32***
Load	0.31***	0.09	-0.07	-0.03	0.22*	0.10	0.16	0.16	0.03	0.11	0.30**	-0.33***	

***, **, * Indicate significances at .01, .05, and .10 levels.

[a] Pearson correlation coefficients are above the diagonal and Spearman correlation coefficients are under the diagonal.

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Table 3

Partial Pearson and Spearman correlation coefficients for grade[a] controlling for grade322 and gpac

	grade	*grademk*	*Cpa*	*Grads*	*write*	*Math*	*read*	*Listen*	*Job*	*hrs*	*load*
grade		0.24*	0.02	-0.26*	0.38***	0.04	-0.13	-0.09	-0.04	0.04	0.33**
grademk	0.25*		-0.24*	0.03	0.02	0.11	-0.15	0.10	-0.30**	-0.15	-0.01
cpa	-0.03	-0.28**		0.12	-0.22	-0.23*	-0.12	-0.12	0.07	-0.19	-0.01
grad	-0.28**	0.07	0.14		-0.31**	0.39***	-0.03	0.12	0.04	-0.13	-0.11
Write	0.36***	-0.01	-0.23*	-0.32**		-0.03	0.22	0.11	0.11	0.33**	0.13
Math	0.07	0.09	-0.22	0.33**	-0.04		0.03	-0.02	0.09	0.01	0.11
Read	-0.14	-0.24*	-0.07	-0.06	0.21	0.08		0.16	-0.01	-0.01	-0.03
Listen	-0.13	0.15	-0.14	0.12	0.10	-0.03	0.19		-0.17	0.01	0.11
Job	-0.03	-0.30**	0.09	0.01	0.14	0.14	0.01	-0.15		0.10	0.28**
Hrs	0.04	-0.17	-0.18	-0.15	0.34**	-0.03	-0.01	0.00	0.05		-0.34**
Load	0.34**	-0.01	-0.02	-0.11	0.12	0.15	-0.01	0.06	0.31**	-0.35**	

***, **, * Indicate significances at .01, .05, and .10 levels.

[a] Pearson correlation coefficients are above the diagonal and Spearman correlation coefficients are under the diagonal.

Table 4

Summary of Results

Legend: SPA: Significant Positive Association; **SNA:** Significant Negative Association; **NA:** No Association

Hypothe-sis No.	Independent variables listed under each factor	Expected association with student performance defined as:		Obtained association with student performance defined as:		Hypothesis Supported (S) or Rejected (R) when student performance is defined as:	
		"Points"	"Grade"	"Points"	"Grade"	"Points"	"Grade"
	Factor 1: Motivation						
1	Grade student would like to make in the course.	SPA	SPA	SPA	SPA	S	S
2	Intention to take the CPA Exam.	SPA	SPA	NA	NA	R	R
3	Intention to attend grad. school.	SPA	SPA	NA	SNA	R	R
	Factor 2: Actual ability						
4	Grade in Intermediate Acctg II.	SPA	SPA	SPA	SPA	S	S
5	Cumulative GPA	SPA	SPA	SPA	SPA	S	S
	Factor 3: Self-perceived ability						
6	Writing ability	SPA	SPA	SPA	NA	S	R
7	Math ability	SPA	SPA	NA	NA	R	R
8	Reading ability	SPA	SPA	SPA	NA	S	R
9	Listening ability	SPA	SPA	NA	NA	R	R
	Factor 4: Distraction						
10	Type of job; if non-accounting.	SNA	SNA	NA	NA	R	R
11	No. of hours of work per week.	SNA	SNA	NA	NA	R	R
12	Course load.	SNA	SNA	NA	NA	R	R

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SUMMARY OF RESULTS

Table 4 presents a summary of the results of the study. This summary includes the hypotheses, the independent variables, the association that we expected between each independent variable and student performance defined either as "points" or "grade", the association that we actually obtained, and whether each of our 12 hypotheses was supported or rejected.

As the last column of Table 4 indicates, three hypotheses (1, 4 and 5) were supported and seven hypotheses (2, 3, 7, 9, 10, 11 and 12) were rejected whether student performance was defined as "points" or "grade." The remaining two hypotheses (6 and 8) were supported when student performance was defined as "points" and were rejected when student performance was defined as "grade." The three supported hypotheses indicate that the grade the student would like to make in the course, the grade in Intermediate Accounting II, and the GPA have significant positive associations with student performance whether it is defined as "points" or "grade." Particularly, the post hoc comparison results show that students who would like to make an A in the courses get significantly higher grades (or points) than students who would like to make at least a B or those who reported that a C is fine with them. Likewise, those students that earned As in Intermediate Accounting II performed significantly better than those who earned Bs and Cs in that course. We observed similar patterns when comparing students having higher GPAs with those having lower GPAs. The seven rejected hypotheses indicate that intention to take the CPA exam or attend graduate school, self-perceived math and listening abilities, type of job outside of school, number of hours of work per week, and number of courses taken per semester have no associations with student performance whether it is defined as "points" or "grade." The two remaining hypotheses that are partially supported and partially rejected indicate that self-perceived reading and writing abilities have significant positive association with student performance defined as "points" but have no associations with student performance defined as "grade."

CONCLUSIONS AND RECOMMENDATIONS

One general conclusion of the study is that motivated students earn higher grades in Auditing and CIFA courses than students who are not motivated. More specifically, the study provides evidence that the majority of students who responded that they would like to make high grades in these courses ended up making high grades. The result obtained in this study, that motivated students earn higher grades than students who are not motivated, confirms the results obtained in some prior studies (e.g., Pascarella and Terenzini 1991). Probably, there are various reasons that are motivating the students to want to make high grades. This study looked at two possible reasons: students' intensions to take the CPA exam and attend graduate schools. Our results show that neither of these is a good motivating variable for the students in our school. Intention to take the CPA exam has no significant association with student performance defined either as "points" or "grade." Furthermore, intension to attend graduate school has no significant association with student performance defined as "points," and worse

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yet, it has a significant *negative* association with student performance defined as "grade." The obtained association between intension to attend graduate school and student performance seems to be counter-intuitive since Table 1 shows no significant association and Tables 2 and 3 show significant *negative* association (at the .01 and .05 levels). One possible reason for this is the fact that student performance is defined as "points' in Table 1 and as "grade" in Tables 2 and 3. The latter definition has several drawbacks as explained earlier. One other possible reason for the significant *negative* association between intension to attend graduate school and student performance defined as "grade" is the fact that we assumed that students who intend to attend graduate school at a university other than ours are more motivated and, thus, will earn higher grades than students who intend to attend graduate school at our university. This assumption was based on the general perception as well as our own knowledge that the other graduate schools in town are ranked higher academically than our school. As it turned out, from an analysis of the frequency tables of responses (which are available from the authors upon request) our students, particularly those with low grades, apparently thought that our undergraduate school is too difficult and our graduate school will be even more difficult. Thus, even though many of them reported that they intend to attend graduate school, the majority reported that they would attend at another school. For example, of the 14 students who intended to attend graduate school at another university (i.e., those we thought would earn the highest grades), four (or 29%) earned the grade of C, eight (or 57%) earned the grade of B, and only two students (or 14%) earned the grade of A.

In light of this general conclusion, we recommend that college of business faculty in general and accounting faculty in particular should find ways (whatever these may be) to motivate students to work hard and earn high grades. We realize that some faculty may already be doing this; thus our recommendation is for those who may not be.

Another general conclusion of the study is that, as expected, students with high prior actual ability end up earning higher grades in Auditing and CIFA courses than students with low prior actual ability. Specifically, the study provides strong evidence that student performance in Intermediate Accounting II and their cumulative GPA are strong predictors of student performance in Auditing and CIFA courses. This study's result that student performance in Intermediate Accounting II is a strong predictor of student performance in more advanced undergraduate accounting courses is in agreement with the results in some prior studies showing that prior accounting knowledge obtained through high school education is a strong predictor of performance in college-level accounting courses (e.g., Eskew and Faley 1988; Bartlett, Peel and Pendlebury 1993; Gul and Fong 1993; Tho 1994; Rohde and Kavanagh 1996), and that college-level exposure to accounting is positively related to student performance in the first MBA-level accounting course (e.g., Canlar 1986). Furthermore, This study's result that GPA is a strong predictor of student performance in Auditing and CIFA courses confirms the results in some prior studies showing that GPA is a strong predictor of performance in accounting courses (e.g., Eckel and Johnson 1983; Hicks and Richardson 1984; Ingram and Peterson 1987; Eskew and Faley 1988; Doran, Bouillon, and Smith 1991, and Jackling and Anderson 1998).

In light of this general conclusion, we recommend that faculty encourage their students to work hard to get high grades in all the courses they take to increase their GPA. We further recommend that faculty who teach Intermediate Accounting II encourage their students to work hard and try to do well in that course by emphasizing that research shows that students who get high grades in that course will most likely get high grades in Auditing and CIFA courses.

A third general conclusion of this study is that self-perceived abilities in reading and writing are

strong predictors of student performance (defined as "points") in Auditing and CIFA courses. More specifically, the study provides evidence those students who reported that their reading and writing abilities are good or very good earned higher grades than those who reported that their reading and writing abilities are average or poor. Incidentally, only five students (or less than 8 6% of the sample) reported that their reading and/or writing abilities are poor.

In light of this general conclusion, we recommend that accounting faculty encourage their students to concentrate on improving their reading and writing skills by informing them that research has shown that there is a strong correlation between good reading and writing skills and student performance (defined as the actual points received for the course) in Auditing and CIFA. Again, we realize that some faculty may already be encouraging their students to improve their reading and writing skills; thus our recommendation is for those who may not be.

The fact that this study shows no significant association between self-perceived math and listening abilities and student performance defined as "points," or between self-perceived writing, math, reading and listening abilities and student performance defined as "grade" is puzzling. One explanation for this may be that students tend to over-estimate their abilities, and that their self-perceptions of their abilities in these areas are not accurate representations of their actual abilities. However, we may note here that the result obtained in this study, showing no association between students' mathematical ability and their performance in Auditing and CIFA courses, confirms the result in at least one prior study (i.e., Gist, Goedde, and Ward 1996) that showed that students with strong mathematical background did not outperform students with weaker mathematical background in accounting courses.

A fourth general conclusion of this study is that the distraction variables (i.e., working too many hours per week, even in non-accounting related jobs, and taking too many courses per semester) have no significant *negative* associations with student performance. That is, they are not distracting the students and preventing them from earning high grades

In light of this conclusion we recommend that accounting faculty need not encourage their students to work as few hours as possible to earn high grades. And if the students have to work many hours anyway to support their families, accounting faculty need not encourage those students to take as few courses per semester as possible to earn high grades in Auditing and CIFA courses.

STUDY LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

Our study is subject to some limitations. One limitation is that our school is a public university and, therefore, we do not know if the results will be the same for private schools. So, one suggestion for further research is to replicate the study in a private school. Another limitation is that our school is a commuter school and, therefore, we do not know if the results will be the same for residential schools. Accordingly, another suggestion for further research is to replicate the study in a residential school. A third limitation is that our student body is highly diversified and, therefore, we do not know if the results will be the same for much less diversified schools. Thus, a third suggestion for further research is to replicate the study in a much less diversified school. A fourth limitation of this study is that about 80% of our students work almost full time while going to school and, therefore, we do not know if the results will be the same for schools where a much less percentage of the students work full time. Therefore, a fourth suggestion for further research is to replicate the study in other schools where a much smaller percentage of the students work full time. A fifth limitation of the study is that the results are

based on a small sample and, thus, are not as robust as they could have been if the sample size were at least 20% larger. Hence, a fifth suggestion for future research is to replicate the study using a larger sample.

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