Factors Associated with Student Performance in the Senior Seminar in Accounting: A Comparative Study in Commuter and Residential Schools

Mostafa M. Maksy
Kutztown University of Pennsylvania

David D. Wagaman
Kutztown University of Pennsylvania

Of the three motivation factors, the grade the student would like to earn in the course had strong association with student performance but only when it is defined as "grade" and only at the commuter school. Intention to take the CPA exam or attend graduate school had no associations with student performance at either school. Prior actual ability variables (Intermediate Accounting II grade and GPA) had strong associations with student performance at both schools. Surprisingly, holding non-accounting-related jobs, working too many hours per week, and carrying higher course loads, had no significant negative associations with student performance at either school.

INTRODUCTION

Prior studies have explored various factors (e.g., general academic performance, aptitude, prior exposure to mathematics, prior exposure to accounting, motivation, effort, and other intervening variables) that are associated with student performance in college-level courses. It is widely believed that motivation and effort significantly influence individual performance in college. However, as the review of prior research below indicates, few studies have investigated their impact on accounting education. In this study, we investigate the associations between motivation and distraction factors and student performance in the undergraduate senior seminar in accounting (USSA). Chen et al. (2009) and Maksy and Zheng (2010) investigated student performance in three undergraduate courses, one of which was a course titled "Contemporary Financial Accounting Issues" which was considered a senior seminar course. One of the limitations of the Chen et al. and Maksy & Zheng studies was that they were conducted in a commuter school. They stated "we do not know whether the results will be the same for residential schools." One of their suggestions for future research was to replicate the study in a residential school. In this study, we not only replicate the study in a residential school but we collect new data from students in a commuter school of similar characteristics to those of the residential school to determine whether factors affecting student performance in commuter schools are generalizable to residential schools. As proxies for motivation, we use a variety of factors (the grade the students would like to earn in the course, intention to take the Certified Public Accountant (CPA) examination, and intention to pursue graduate studies). As proxies for distraction, we use the number of hours of work per week, the type of job (especially when it is not related to accounting or business), and the number of courses taken per semester. To control for

prior actual ability, we use two other factors: the grades earned in Intermediate Accounting II and overall Grade Point Average (GPA.) Student performance, the dependent variable, is measured once by the letter grade and another time by the total points earned in the course.

The study's objectives are predicated on the assumption that identifying some factors that motivate students to perform well and some factors that distract them from performing well may help us to emphasize the motivation factors and discourage the distraction factors. For example, if educators know that student intention to sit for the CPA exam motivates students to study hard and earn higher grades in the USSA course, during advising, educators may encourage their students to plan to sit for the CPA exam. Also, if educators know that the type of job (especially if it is not related to accounting) does not have an effect on student performance, they may not discourage their students to have non-accounting-related jobs. Similarly, if working too many hours (within a relevant range of, let us say, 0 to 40 hours a week) does not have an effect on student performance, educators may not advise students that have low grades that they must reduce their work hours per week. Educators may advise their students to make sure, regardless of how many hours they work per week, to devote sufficient time to their study and to make sure that they are using good study habits. Of course, some students heed their educators' advice and some do not. Educators have no control over that.

The remaining parts of the paper present a review of prior research, discussion of the study objectives and hypotheses development, research methodology, and results. The paper ends with conclusions, recommendations, study limitations, and some suggestions for further research.

LITERATURE REVIEW

Many prior studies have explored various factors (e.g., general academic performance, aptitude, prior exposure to mathematics, prior exposure to accounting, motivation, effort, and other intervening variables) that are associated with student performance in college-level courses. The Grade Point Average (GPA) is used frequently as a proxy for prior academic performance and aptitude. Several 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 et al. 1991, and Maksy and Zheng 2010). Wooten (1998) finds that aptitude is a significant variable in influencing performance of the traditional students in introductory accounting. In contrast, he finds that current performance of nontraditional students does not seem contingent on previous academic success. Maksy and Zheng (2008) find that the grade in Intermediate Accounting II is a strong predictor of student performance in the advanced accounting and auditing courses. The research findings in the US are supported in Australia by Jackling and Anderson (1998) and in Scotland by Duff (2004). In Wales, Lane and Porch (2002) find that, in introductory accounting, performance can partially be explained by reference to factors in the students' pre-university background. However, these factors are not significant when the student progresses to upper level accounting classes. In addition, using another measure, pre-university examination performance, Gist, et al. (1996) finds no significant association between academic performance and performance in accounting courses at the university level.

Because accounting is a subject area that requires accumulation of prior knowledge and considerable quantitative skills, several studies have investigated the impact of prior exposure to mathematical background and accounting courses on performance in college accounting courses. The results are inconclusive. On the one hand, 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. On the other hand, some later studies (for example, Eskew and Faley 1988; Bartlett et al. 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. Ambiguity is also present with respect to the influence of mathematical background on performance in accounting courses. For example, Eskew and Faley (1988) and Gul and Fong (1993) suggest that students with strong mathematical backgrounds outperform students with weaker mathematical backgrounds. By contrast, Gist et al. (1996) do not report the same results.

Additionally, Guney (2009) suggests that grades in secondary education mathematics are a very strong determinant of performance in accounting but only for non-accounting majors.

Bartlett et al. (1993) concluded that very few educational, demographic or financial characteristics variables appear to have a significant influence on student performance in university accounting examinations. Gracia and Jenkins (2003) observe that students who actively demonstrate commitment and self-responsibility towards their studies tend to do well in formal assessments. Accordingly, they agree with Bartlett et al. (1993) that intervening variables, rather than demographic variables, may be important determinants of student performance in university accounting examinations. They are also in agreement with Lane and Porch (2002) who suggest that other important factors like student motivation may explain student performance.

The influence of motivation and effort on student performance has been studied. Pascarella and Terenzini (1991) report that motivation and effort, among other factors, significantly influence individual performance in college. However, using self-reported data, Didia and Hasnat (1998) present counter-intuitive evidence that the more time spent studying per week, the lower the grade in the introductory finance course. However, the significance of this counter-intuitive result was at the weakest level (.10), appeared in only one of the four models they used, and most likely was due to the fact that they did not control for prior actual ability (i.e. GPA) even though it was one of their study variables. In this study, we use two prior actual ability factors (GPA and Grade in Intermediate Accounting II) for control purposes. Also, using self-reported data, Nofsinger and Petry (1999) find no significant relationship between effort and performance. In contrast, Johnson et al.(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. Additionally, Maksy and Zheng (2008) find that the grade the student would like to earn (which they used as a proxy for motivation) in advanced accounting and auditing courses is significantly associated with the student's performance in those two courses.

In recent years, there has been increased interest in studying the influence of intervening variables on student performance. Paisey and Paisey (2004) and Guney (2009) show there is a clear positive relationship between attendance and academic performance. Paisey and Paisey also report that the most frequently cited reason for not attending classes was students' participation in part-time employment. Similarly, Lynn and Robinson-Backmon (2005) find a significant adverse association between employment status and learning outcomes. These authors also indicate that a student's self-assessment of course learning objectives is significantly and directly related to grade performance. In contrast, Maksy and Zheng (2008) find no significant negative association between the number of hours of work per week and student performance in advanced accounting and auditing courses. Schleifer and Dull (2009) address metacognition in students and find a strong link between metacognitive attributes and academic performance. Metacognition is frequently described as "thinking about thinking" and includes knowledge about when and how to use particular strategies for learning and for problem solving.

Despite the fact that prior research has been largely inconclusive or replete with conflicting results, our hope, in this study, is to provide more insight on those areas in which there was some general agreement. Since motivation and effort has generally been positively associated with student performance, we try, in this study, to test whether some new selected motivation factors affect student performance. We also look at several factors which are commonly viewed as possibly distracting students from performing well and test whether indeed they are negatively affecting student performance. Moreover, we investigate the impact of two specific measures of prior abilities on student performance, and also use them as control variables while testing for the association between motivation and distraction factors and student performance in the USSA course.

STUDY OBJECTIVES AND HYPOTHESES DEVELOPMENT

The *first objective* of the study is to investigate the association between three selected motivation factors (the grade the student would like to earn in the course, the student's intention to take the CPA

examination, and the student's intention to attend graduate school) and the student's performance in the USSA course in a commuter school and a residential school to determine if the results are generalizable to both types of schools. Commuter schools are those that do not have any organized on-campus housing for the students. Students live at their privately-owned or rented housing and commute to school using public transportation (trains and/or busses) or their private vehicles. At residential schools, a majority of the students live in organized housing on campus (university-owned dormitories) or in private housing (surrounding the campus) that is approved by the university housing administration. Students walk to the classrooms and do not use any public or private transportation. While residential schools are not very common outside the United States, they do exist in some countries like Australia, New Zealand and the United Kingdom.

Student performance is measured in two ways: (1) the letter "grade" and (2) the total "points" (including quizzes, mid-term exams, term projects and the final exam before any upward curving made by the faculty) earned in the course. We expect a significant association between each of these motivation factors and student performance in the USSA course whether students attend a commuter or a residential school. The students were asked (Please see a copy of the Survey Instrument in Appendix B): "what grade would like to earn in this course?" A student whose answer is "an A" is assumed to be motivated (for whatever reasons) to study hard to earn an A. Also, a student whose answer is "at least a B" is motivated but not as strongly as a student whose answer is "an A." On the other hand, a student whose answer is "a C is fine with me" appears to be not that motivated at all. With respect to the second motivation variable, we assume that students who intend to sit for the CPA examination are more motivated (to study hard to be able to pass that exam) than students who do not intend to sit for the CPA exam. Similarly, for the third motivation variable, we assume that students who intend to go to graduate school are more motivated (to study hard to be able to get accepted at a good graduate school) than students who do not intend to go to graduate school.

The *second objective* of the study is to investigate the association between three selected distraction factors (the student's number of working hours per week, the student's type of job if it is unrelated to accounting or business, and the student's number of courses taken per semester) and the student performance. We assume that if the number of work hours per week is too high, the student will not have enough hours to devote to the study of the USSA course (as well as the other courses the student is taking) and, thus, the student's grade in this course will suffer, i.e., it will be lower than if the student was not working that many hours or was not working at all. We also assume that if the student's job is related to accounting the student may gain some practical accounting experience that might compensate for the fact that the student is not devoting enough hours to his or her study. In this case, the student's performance may not be affected negatively as when the student's job type is not related to accounting at all. Furthermore, we assume that if the student is taking too many courses (i.e., more than the usual average number of courses per semester) the student's performance in these courses (including the USSA course) will be affected negatively because the student will not be able to devote the appropriate number of hours of study for each course. In light of the above discussion, we expect that if the student's number of work hours per week is too high, and/or the type of the student's job is not related to accounting, and/or the number of courses taken per semester is too high, there will be a significant *negative* association between these distraction factors and student performance. Of course, distraction factors may offset each other, thereby cancelling out any single factor's effect. For example, a student who works too many hours per week may take fewer courses, and vice versa, so that there is no negative effect on performance. Similarly, residential school students may work less hours per week but take more courses each semester, while commuter school students may work more hours per week and take fewer courses per semester. For this reason, we will test the effect of each distraction factor on student performance while controlling for the other two factors.

As indicated in the literature review above, almost all prior studies showed positive and significant associations between prior ability factors (most commonly GPA) and student performance in college courses. We expect this to be the case in this study as well. We use *two prior actual ability factors* (the student's grade in Intermediate Accounting II and the student's overall GPA) to control their impact on

student performance in the USSA course. Based on the above discussion, we formulate the following hypotheses:

Motivation Factors

    H_1: There is a significant association between the grade that the student would like to earn and student performance. This is the case whether the student attends a commuter or a residential school.

    H_2: There is a significant association between the student's intention to take the CPA Exam and student performance. This is the case whether the student attends a commuter or a residential school.

    H_3: There is a significant association between the student's intention to attend graduate school and student performance. This is the case whether the student attends a commuter or a residential school.

Distraction Factors

    H_4: There is a significant negative association between the student's number of working hours per week and student performance. This is the case whether the student attends a commuter or a residential school.

    H_5: There is a significant negative association between the student's type of job (if it is not related to accounting) and student performance. This is the case whether the student attends a commuter or a residential school.

    H_6: There is a significant negative association between the student's number of courses taken per semester and student performance. This is the case whether the student attends a commuter or a residential school.

Control Factors

    H_7: There is a significant association between the grade the student earned in Intermediate Accounting II and student performance. This is the case whether the student attends a commuter or a residential school.

    H_8: There is a significant association between the student's overall GPA and student performance. This is the case whether the student attends a commuter or a residential school.

METHODOLOGY

Survey Questionnaire

    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 the USSA course at a commuter school and a residential school. Appendix B presents a copy of the survey instrument. For ethical, confidentiality, and potential risk issues pertaining to participants, the authors had to submit a comprehensive 10-page application (together with a copy of the survey instrument) to the University's Institutional Review Board (IRB) for approval. Prior to that, both authors had to take the National Institute of Health (NIH)'s training course titled "Protecting Human Research Participants," and pass the

test given at the end of the course. The certificates of completion of the course were required to be submitted with the application to the University's IRB. The statement "participation in the survey is completely voluntary," included in the survey instructions, was the only major modification made to the survey instrument by the University's IRB.

Data Collection and Measurement of Variables

The data on the survey questionnaire were collected from *all of the* 57 students enrolled in the USSA course at a commuter school and *all of the* 45 students enrolled in the same course at a residential school. Other than the fact that one school is a commuter school and the other is a residential one, we selected two schools that are very similar in many respects. First, each school enrolls about 10,000 students, and the College of Business in each school enrolls about 1600 students. Second, both schools are public (or state-supported) universities where public access is a major part of their mission statements. According to the College Board, there are 502 four-year public universities (with enrollment greater than 2000 students) in the United States of America. Of these 502 universities, 246 are residential (most students live on campus) and 256 are commuter universities (See https://bigfuture.collegeboard.org/college-search.) The College Board is a highly respected not-for-profit organization committed to excellence and equity in education in the US. The Board's mission is to connect students to college success and opportunity (See http://about.collegeboard.org/). If we exclude the flagship state university of each of the 50 states (because of exceptionally large student body, high academic rigor, etc.,) the two schools used in our study are representative of about 450 public universities in the U.S. Third, at both universities, faculty members are represented by a union that negotiates compensation and work conditions with the state on behalf of the faculty. With minor exceptions, each faculty member receives the same percent salary increase (if any) each year. Fourth, both universities went for at least a year without a negotiated contract between the union and the state. During that period, faculty worked under the expired contract, which means they received the same salary they received during the last year of the expired contract, without any increase. If one school had a negotiated contract and the other did not, it is possible that the morale of the faculty at the school without a negotiated contract may be lower than that of the faculty at the school with a negotiated contract. The other implicit assumption is that faculty morale may affect classroom delivery and faculty productivity. Fifth, both universities are non-AACSB accredited but both are in the AACSB candidacy stage, i.e., both received a letter from the Association to Advance Collegiate Schools of Business (AACSB International) notifying them that their application for accreditation has met the minimum requirements and they are candidates for accreditation). Sixth, both universities are located either in or very near one of the largest cities in the United States. Thus, because of the major similarities between the two schools, we assume that any differences in the study results between the two schools should be largely attributed to the fact that one university is a commuter and the other is a residential school. The data was collected in fall 2010 from two sections of the USSA course offered at the commuter school, and in spring 2011 from two sections of the same course offered at the residential school. Both sections in each school were taught by the same instructor and, thus, instructor's effect, if any, on the results at each school should not be a major concern. Because a small number of students failed to list their identification (known as student ID) numbers on the questionnaire, their responses were excluded from the study. The final sample included 50 useful responses from the commuter school and 40 from the residential school. While all the data representing the independent variables are primary data, we verified the data representing the control variables (student grades in Intermediate Accounting II and overall GPAs) with the school records using only the students ID numbers (for confidentiality reasons) and with the permission of the Dean of the College of Business. The data representing the two dependent variables (the letter "grade" and total "points" received for the course) were obtained directly from the faculty teaching the course, again using only students ID numbers for confidentiality concerns.

Data Analysis

To test the hypotheses, we used statistical methods that are similar to those used in Maksy and Zheng (2008) which was similar to this study but was conducted at a commuter school only. We used One-Way

Analysis of Variance (ANOVA), and regression analysis to determine the potential associations between the eight independent variables and the two dependent variables. Because the dependent variable "grade" is ordinal, we used the Spearman correlations non-parametric test to determine the potential associations between "grade" and the independent variables. We used the Pearson correlations test to determine the potential associations between "points" and the independent variables. To control for the prior actual ability factors, the grade earned in Intermediate Accounting II (GIA2) and the overall Grade Point Average (OGPA), we used partial correlations. Because the number of working hours (NWH) per week, the type of job (TJ), and the number of courses (NC) taken per semester may offset the effect of each other on student performance, we used partial correlations to determine the association between student performance and NWH while controlling for TJ and NC. We repeated the same process to determine the association between student performance and NC while controlling for NWH and TJ, and the association between student performance and TJ while controlling for NWH and NC. Furthermore, we repeated the above three processes while controlling for GIA2 and OGPA in addition to the two distraction factors.

RESULTS OF THE STUDY

The study tables are shown in Appendix A. TABLE 1 presents the ANOVA results using "grade" and TABLE 2 presents the ANOVA results using "points" as a measure of student performance. TABLE 3 presents Spearman correlations for "grade" and TABLE 4 presents Pearson correlations for "points." TABLE 5 presents partial correlations for "grade" while controlling for GIA2 and OGPA and TABLE 6 presents partial correlations for "points" while controlling for the same prior actual ability variables. TABLE 7 presents regression analysis of the eight independent variables on "grade" and TABLE 8 presents regression analysis of the eight independent variables on "points." Part A of TABLE 9 presents partial correlations for each distraction factor with "grade" while controlling for the other two distraction factors and Part B presents partial correlations for each distraction factor with "grade" while controlling for the other two distraction factors as well as GIA2 and OGPA. Part A of TABLE 10 presents partial correlations for each distraction factor with "points" while controlling for the other two distraction factors and Part B presents partial correlations for each distraction factor with "points" while controlling for the other two distraction factors as well as GIA2 and OGPA.

We analyze below the results of the study by the type of factors investigated.

Motivation Factors Associated with Student Performance

At the commuter school, as TABLES 1 and 3 indicate, of the three motivation variables discussed in H_1 to H_3, one variable, the grade the student would like to earn in the course, is significantly associated (at the .01 significance level) with student performance (defined as "grade") under the one-way ANOVA and Spearman correlations tests. As TABLE 5 indicates, after controlling for the prior actual ability factors, this same association continued to be significant but at the .05 level of significance. The regression analysis, as TABLE 7 indicates, also shows the same association at the .05 significance level. When student performance is measured as "points," as TABLES 2, 4, 6 and 8 indicate, these significant associations totally disappeared under all tests. The fact that there is a significant association between the grade the student would like to earn in the course and student performance when it is measured as "grade" but no significant association when performance is measured as "points" is puzzling because "grade" and "points" should be highly correlated. We do not know for sure why this is the case. It is possible that this is a statistical anomaly particularly that the difference in results occurred only at the commuter school. Of course, "points" is a finer measure of performance than "grade." A student earning 80 points and another earning 89 points will have the same performance if we use "grade" as a measure (because both will receive a B grade) and a significantly different performance if we use "points" as a measure. Consequently, we will give more weight to the results using "points" as a measure of performance. As TABLES 1-8 indicate, the two other motivation factors have no significant associations with student performance (however defined) under all tests.

At the residential school, as TABLES 1-8 indicate, none of the three motivation factors is significantly associated with student performance (however defined) under any test.

The above discussion indicates that the statistical analyses provide some support to H_1 (that there is a significant association between the grade the student would like to earn and student performance) but only at the commuter school and only when student performance is defined as "grade." When student performance is defined as "points," which is a finer measurement of performance, H_1 is not supported at either school. The statistical analyses do not provide support to H_2 and H_3. This means that intentions to take the CPA exam and/or to go to graduate school are not motivating students to study hard to earn high grades in the USSA course at either school. In other words, while most students at both schools responded that they intend to take the CPA exam and/or go to graduate school most of them did not earn high grades. We are not quite sure why this is the case. One explanation is that there is no penalty for responding yes for intention to take the CPA exam and/or go to graduate school. So, few students responded "may be" and even fewer responded "no." In the end, just a few students received an "A" for the course.

Distraction Factors Associated with Student Performance

As TABLES 1-8 indicate, none of the three distraction factors (number of hours of work per seek, type of job, and number of courses taken per semester) has any significant *negative* association (under any test) with student performance (however defined) at either school. Furthermore, taking one distraction factor at a time, we find no significant association with student performance (however defined) even after we control for the other two distraction factors (as Part A of TABLES 9 and 10 indicate) or after we control for the other two distraction factors as well as the two prior actual ability factors (as Part B of TABLES 9 and 10 indicate). This means that the statistical analyses do not provide any support to H_4 to H_6.

Prior Actual Ability Factors Associated with Student Performance

As TABLES 1-4, 7 and 8 indicate, the two variables representing prior actual ability (GIA2 and OGPA) have significant associations (mostly at the .01 level) with student performance at both schools. However, the association of OGPA with student performance seems to be somewhat stronger than the association of GIA2 with student performance. For example, one of the six statistical tests used in this study, the regression analysis for "grade," presented in TABLE 7, did not show any significant association of GIA2 with student performance at either school. Also, the regression analysis for "points," presented in TABLE 8, did not show any significant association of GIA2 with student performance at the residential school. At the commuter school, that association was significant at the .05 level. Overall, however, we can generally state that most of the statistical analyses support H7 and H8, meaning there are significant associations between GIA2 and OGPA and student performance. This result is in conformity with prior research.

CONCLUSIONS AND RECOMMENDATIONS

One general conclusion of the study is that there is some evidence that commuter school students are somewhat motivated to study hard to earn higher grades in the USSA course. The study provides weak evidence that, if we measure student performance as the "grade" earned in the course, the majority of the commuter school students who responded that they would like to earn high grades ended up earning high grades. On the hand, the study did not provide any evidence that this was the case if we measure student performance using "points" which is a finer measure of performance than "grade." Also, the study did not provide any evidence that this was the case with the residential school students whether we measure student performance using "grade" or "points. Other than the above difference, the study results are equally generalizable to commuter and residential schools. For example, speaking of motivation, intention to take the CPA examination and intention to pursue graduate studies do not seem, in this study, to be

good motivating factors for either commuter school or residential school students to perform well in the USSA course.

In light of the above general conclusion, we recommend that, while accounting faculty (at both types of schools) should find ways to motivate their students to study hard to earn high grades, they should keep in mind that informing students to plan to sit for the CPA exam or get admitted to a good graduate school may not be good motivating factors. Thus, accounting faculty should think of other motivating factors that are not tested in this study.

Another general conclusion is that the distraction variables investigated in this study have no significant *negative* associations with student performance at either school. That is, they are not distracting the students and preventing them from earning high grades in the USSA course.

In light of this conclusion, we recommend that accounting faculty, when advising their students, should realize that working as few hours as possible will not necessarily lead to earning higher grades and working to many hours (within a relevant range of, let us say, zero to 40 hours a week) will not necessarily lead to earning lower grades. So, faculty need not automatically advise students with lower grades to significantly reduce their work hours, especially if the students have to work anyway to support themselves and/or their families. This is so because lower working hours will not necessarily and automatically lead to higher grades since students may not automatically devote the extra time to studying or they may have wrong study habits that they need to fix. Furthermore, if students have to work a significant number of hours (let us say, 40 hours a week) anyway (even in non-accounting related jobs) to support their families, accounting faculty need not encourage those students to take as few courses per semester as possible, because higher course loads do not seem to lead to lower grades in the USSA course.

As expected and as shown in prior studies with respect to other courses, a third general conclusion of the study is that students with high prior actual ability end up earning high grades in the USSA course at both schools. Specifically, the study provides strong evidence that students' performance in Intermediate Accounting II and, more significantly, their overall GPA, are strong predictors of their performance in the USSA course.

STUDY LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

This study is subject to some limitations. One limitation is that the two schools selected for the study school are public (i.e., state-owned or state-supported) universities and, therefore, the results may not be the same for private schools. There are about 430 four-year, for-profit, medium-size (enrollment between 2000-15000 students), private universities in the U.S. (see https://bigfuture.collegeboard.org/college-search). Thus, one suggestion for further research is to replicate the study using two private schools that are representative of the majority of private schools. Another limitation is that the study sample is somewhat small relative to the number of variables analyzed and, hence, the results may not be as robust as they would have been if the sample was larger. Therefore, another suggestion for further research is to replicate the study using a somewhat larger sample.

REFERENCES

Baldwin, B. A. and Howe, K. R, (1982), "Secondary-level Study of Accounting and Subsequent Performance in the First College Course", *The Accounting Review*, vol. 3, pp.619-626.

Bartlett, S. M., Peel, J. and Pendlebury, M, (1993), "From Fresher to Finalist: A Three-year Study of Student Performance on an Accounting Degree Program", *Accounting Education: an international journal,* vol. 2, pp. 111-122.

Bergin, L. J. (1983), "The Effect of Previous Accounting Study on Student Performance in the First College-level Financial Accounting Course", *Issues in Accounting Education,* vol.1, pp. 19-28.

Chen, C. T., Maksy, M. and Zheng, L. (2009), "Factors Associated with Student Performance in Auditing and Contemporary Financial Accounting Issues," *International Journal of Education Research,* Vol. 4, No.2, (Spring 2009), pp. 56-71.

Didia, D. and Hasnat, B. (1998), "The Determinants of Performance in the University Introductory Finance Course", *Financial Practice and Education,* vol. 1, pp. 102-107.

Doran, B., Bouillon, M. L. and Smith, C.G. (1991), "Determinants of Student Performance in Accounting Principles I and II", *Issues in Accounting Education,* vol. 6, pp.74-84.

Duff, A. (2004), "Understanding Academic Performance and Progression of First-year Accounting and Business Economics Undergraduates: The Role of Approaches to Learning and Prior Academic Achievement", *Accounting Education,* (December), vol. 13, pp. 409-430.

Eckel, N. and Johnson, W.A. (1983), "A Model for Screening and Classifying Potential", *Accounting Education,* vol. 2, pp. 1-15.

Eskew, R. K. and Faley, R. H. (1988), "Some Determinants of Student Performance in the First College-level Financial Accounting Course", *The Accounting Review* (January), pp.137-147.

Gist, W. E., Goedde, H. and Ward, B.H. (1996), "The Influence of Mathematical Skills and Other Factors on Minority Student Performance in Principles of Accounting", *Issues in Accounting Education,* vol. 1, pp. 49-60.

Gracia, L. and Jenkins, E. (2003), "A Quantitative Exploration on an Undergraduate Accounting Programme of Study", *Accounting Education* (March), vol. 12, pp. 15-32.

Gul, F. A. and Fong. S. C. (1993), "Predicting Success for Introductory Accounting Students: Some Further Hong Kong Evidence", *Accounting Education: an international journal,* vol. 1, pp. 33-42.

Guney, Y. (2009), "Exogenous and Endogenous Factors Influencing Students' Performance in Undergraduate Accounting Modules", *Accounting Education* (February), vol. 18, pp. 51-73.

Hicks, D. W. and Richardson, F. M. (1984), "Predicting Early Success in Intermediate Accounting: The Influence of Entry Examination and GPA", *Issues in Accounting Education,* (Spring), pp. 61-67.

Ingram, R. W. and Peterson, R. J. (1987), "An Evaluation of AICPA Tests for Predicting the Performance of Accounting Majors", *The Accounting Review* (January), pp. 215-223.

Ingram, R. W, Albright, T. L. and Baldwin, A. B. (2002) *Financial Accounting—a Bridge to Decision Making.* Cincinnati, OH: Thomson South-western.

Jackling, B. and Anderson, A. (1998), "Study Mode, General Ability and Performance in Accounting: A Research Note", *Accounting Education: an international journal,* vol. 1, pp.33-42.

Johnson, D. L., Joyce, P., and Sen, S. (2002), "An Analysis of Student Effort and Performance in the Finance Principles Course", *Journal of Applied Finance* (Fall/Winter), pp.67-72.

Lane, A. and Porch, M. (2002), "The Impact of Background Factors on the Performance of No specialist Undergraduate Students on Accounting Modules – A Longitudinal Study: A Research Note", *Accounting Education,* vol. 1, pp. 109-118.

Lynn, S. and Robinson-Backmon, I. (2005), "An Investigation of an Upper-Division Undergraduate Accounting Course and the Factors That Influence Learning Outcomes", *Journal of Accounting and Finance Research*, vol. 13, pp.133-140.

Maksy, M. and Zheng, L. (2008), "Factors Associated with Student Performance in Advanced Accounting and Auditing: An Empirical Study in a Public University", *Accounting Research Journal*, vol. 21, pp. 16-32.

Maksy, M. and Zheng, L. (2010), "Factors Associated with Student Performance in Advanced Accounting and Contemporary Financial Accounting Issues: An Empirical Study in a Commuter University," *Journal of Accounting, Ethics & Public Policy,* Volume 11, No. 3 (2010): 317-339.

Nosfinger, J. and Petri, G. (1999), "Student Study Behavior and Performance in Principles of Finance", *Journal of Financial Education,* (spring), pp. 33-41.

Paisey, C. and Paisey, N. (2004), "Student Attendance in an Accounting Module – Reasons for Non-attendance and the Effect on Academic Performance in a Scottish University", *Accounting Education,* (December), vol. 13, pp. 39-53.

Pascarella, E. and Terenzini, P. (1991), "*How College Affects Students: Findings and Insights from Twenty Years of Research",* San Francisco, CA: Jossey-Bass Publisher.

Rohde, F. H. and Kavanagh, M. (1996), "Performance in First Year University Accounting; Quantifying the Advantage of Secondary School Accounting", *Accounting and Finance,* vol. 2, pp. 275-285.

Schleifer, L. and Dull, R. (2009), "Metacognition and Performance in the Accounting Classroom", *Issues in Accounting Education* (August), vol. 24, pp. 339-367

Schroeder, N. W. (1986), "Previous Accounting Education and College-level Accounting Examination Performance", *Issues in Accounting Education,* vol. 1, pp. 37-47.

Tho, L. M. (1994), "Some Determinants of Student Performance in the University of Malaya Introductory Accounting Course", *Accounting Education: an international journal,* vol. 4, pp. 331-340.

Wooten, T. (1998), "Factors Influencing Student Learning in Introductory Accounting Classes: A Comparison of Traditional and Nontraditional Students", *Issues in Accounting Education* (May), vol. 13, pp. 357-373.

APPENDIX A
TABLES

NOTES:
1. **Legend of Independent Variables in All Tables Below:**

IG: Intended Grade (the grade the student would like to earn in the course).
ICPA: Intention to take the CPA exam.
IGS: Intention to attend Graduate School.
NWH: Number of Work Hours per week.
TJ: Type of Job (whether it is accounting-related, business-related, or other).
NC: Number of Courses the student is taking per semester.
GIA2: Grade in Intermediate Accounting II.
OGPA: Overall GPA;

2. **For ANOVA analysis in Tables 1 and 2:**

All numbers are for Between Groups only. Complete ANOVA numbers are available from the authors upon request.

TABLE 1
ONE-WAY ANALYSIS OF VARIANCE FOR GRADE

Panel A: Commuter School:

Grade BY	Sum of Squares	df	Mean Square	F	Significance
IG	4.507	3	1.502	6.131	.001
ICPA	.201	2	.101	.303	.740
IGS	.267	2	.133	.404	.670
NWH	4.754	13	.366	1.194	.323
TJ	.786	3	.262	.804	.498
NC	.675	6	.113	.320	.923
GIA2	3.044	2	1.522	5.616	.006
OGPA	8.963	21	.427	1.753	.082

Panel B: Residential School:

Grade BY	Sum of Squares	df	Mean Square	F	Significance
IG	.133	1	.133	.216	.645
ICPA	.152	2	.076	.120	.888
IGS	.016	2	.008	.012	.988
NWH	5.117	12	.426	.623	.804
TJ	1.310	3	.437	.705	.555
NC	1.379	5	.276	.422	.830
GIA2	5.159	3	1.720	3.357	.029
OGPA	21.267	29	.733	3.143	.030

TABLE 2
ONE-WAY ANALYSIS OF VARIANCE FOR POINTS

Panel A: Commuter School:

Points BY	Sum of Squares	df	Mean Square	F	Significance
IG	168.564	3	56.188	1.638	.194
ICPA	48.117	2	24.058	.666	.519
IGS	26.033	2	13.017	.356	.703
NWH	589.044	13	45.311	1.409	.203
TJ	69.465	3	23.155	.635	.596
NC	67.137	6	11.189	.286	.940
GIA2	381.727	2	190.864	6.571	.003
OGPA	1227.897	21	58.471	3.155	.003

Panel B: Residential School:

Points BY	Sum of Squares	df	Mean Square	F	Significance
IG	.208	1	.208	.005	.944
ICPA	12.185	2	6.093	.142	.868
IGS	15.593	2	7.797	.183	.834
NWH	468.575	12	39.048	.935	.528
TJ	82.699	3	27.566	.656	.585
NC	130.395	3	26.079	.605	.696
GIA2	328.918	3	109.639	3.116	.038
OGPA	1434.775	29	49.475	3.073	.033

TABLE 3
SPEARMAN CORRELATION COEFFICIENTS FOR GRADE[a]

	Grade	IG	ICPA	IGS	NWH	TJ	NC	GIA2	OGPA
Grade		.458***	.052	-.087	-.103	-.071	.011	.435***	.514***
IG	-.055		.181	-.263*	.039	-.016	.043	.349***	.305**
ICPA	-.059	-.103		.367***	-.048	.041	.249*	.132	.016
IGS	.016	.181	-.014		.080	.110	.438***	.121	-.087
NWH	.054	.147	.206	.145		.478***	-.209	.139	-.220
TJ	.179	.042	.089	.201	.813***		-.193	.025	-.258
NC	.008	-.150	.206	-.014	-.224	-.195		.028	.056
GIA2	.428***	-.182	.129	.059	.151	.168	.235		.366***
OGPA	.625***	.223	-146	.154	-.023	.154	.058	.357***	

***, **, * Indicate significances at .01, .05, and .10 levels respectively.
[a] Commuter school coefficients are above the diagonal and residential school coefficients are under the diagonal.

TABLE 4
PEARSON CORRELATION COEFFICIENTS FOR POINTS[a]

	Points	IG	ICPA	IGS	NWH	TJ	NC	GIA2	OGPA
Points		.153	.017	.048	-.195	-.007	-.038	.442***	.414***
IG	-.011		.152	-.276**	-.012	-.022	.083	.365***	.317**
ICPA	-.054	-.113		.331***	-.038	.065	.266*	.094	-.008
IGS	.091	.203	-.069		.108	.125	.437***	.105	-.068
NWH	.110	.161	.232	.103		.558***	-.170	.037	-.332**
TJ	.210	.013	.114	.243	.671***		-.148	.031	-.290**
NC	.064	-.230	.160	-.071	-.195	-.163		.041	.097
GIA2	.423***	-.148	.100	.090	.071	.178	.284		.346***
OGPA	.676***	.188	-.154	.202	-.080	.138	.018	.370***	

***, **, * Indicate significances at .01, .05, and .10 levels respectively.
[a] Commuter school coefficients are above the diagonal and residential school coefficients are under the diagonal.

TABLE 5
PARTIAL CORRELATION COEFFICIENTS FOR GRADE
WHILE CONTROLLING FOR GIA2 AND OGPA[a]

	Grade	IG	ICPA	IGS	NWH	TJ	NC
Grade		.332**	-.024	-.102	-.052	.061	-.016
IG	-.200		.140	-.325**	.059	.037	.055
ICPA	-.022	-.048		.321**	-.062	.052	.269*
IGS	-.155	.181	-.043		.069	.092	.450***
NWH	.124	.213	.209	.121		.499***	-.151
TJ	.111	.021	.117	.221	.687***		-.128
NC	-.011	-.180	.121	-.085	-.239	-.221	

***, **, * Indicate significances at .01, .05, and .10 levels respectively.
[a] Commuter school coefficients are above the diagonal and residential school coefficients are under the diagonal.

TABLE 6
PARTIAL CORRELATION COEFFICIENTS FOR POINTS
WHILE CONTROLLING FOR GIA2 AND OGPA[a]

	Points	*IG*	*ICPA*	*IGS*	*NWH*	*TJ*	*NC*
Points		-.084	-.015	.038	-.138	.085	-.094
IG	-.140		.140	-.325**	.059	.037	.055
ICPA	.027	-.048		.321**	-.062	.052	.269*
IGS	.071	.181	-.043		.069	.092	.450***
NWH	.203	.213	.209	.121		.499***	-.151
TJ	.130	.021	.117	.221	.687***		-.128
NC	-.005	-.180	.121	-.085	-.239	-.221	

***, **, * Indicate significances at .01, .05, and .10 levels respectively.
[a] Commuter school coefficients are above the diagonal and residential school coefficients are under the diagonal.

TABLE 7
REGRESSION ANALYSIS FOR GRADE

Panel A: Commuter School Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.582	.744		.782	.439
	IG	.263	.115	.338	2.287	.027
	ICPA	-.076	.120	-.084	-.636	.528
	IGS	.033	.082	.063	.399	.692
	NWH	-.005	.006	-.131	-.878	.385
	TJ	.057	.085	.097	.667	.508
	NC	-.017	.059	-.042	-.296	.769
	GIA2	.152	.105	.198	1.451	.154
	OGPA	.501	.210	.336	2.391	.021

a. Dependent Variable: Grade; Model Summary: R2: .432, adjusted R2: .321, ANOVA F value: 3.898 (significant at .002)

Panel B: Residential School Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.913	1.206		.757	.455
	IG	-.304	.258	-.171	-1.181	.247
	ICPA	-.093	.208	-.062	-.450	.656
	IGS	-.082	.099	-.114	-.829	.413
	NWH	.008	.011	.139	.728	.472
	TJ	.017	.135	.024	.125	.901
	NC	-.001	.076	-.002	-.015	.988
	GIA2	.174	.149	.177	1.163	.254
	OGPA	.915	.228	.612	4.014	.000

a. Dependent Variable: Grade; Model Summary: R2: .487, adjusted R2: .354, ANOVA F value: 3.672 (significant at .004)

TABLE 8
REGRESSION ANALYSIS FOR POINTS

Panel A: Commuter School Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	61.771	8.529		7.242	.000
	IG	-.218	1.320	-.027	-.165	.870
	ICPA	-.258	1.377	-.027	-.187	.852
	IGS	.504	.944	.091	.534	.596
	NWH	-.106	.071	-.241	-1.479	.147
	TJ	1.055	.978	.171	1.079	.287
	NC	-.555	.677	-.126	-.819	.417
	GIA2	2.857	1.200	.354	2.380	.022
	OGPA	4.511	2.401	.288	1.879	.067

a. Dependent Variable: points; Model Summary: R2: .327, adjusted R2: .195, ANOVA F value: 2.481 (significant at .027)

Panel B: Residential School Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	58.871	9.444		6.234	.000
	IG	-2.063	2.017	-.141	-1.023	.314
	ICPA	-.397	1.628	-.032	-.244	.809
	IGS	-.269	.778	-.045	-.346	.732
	NWH	.101	.086	.214	1.174	.249
	TJ	-.197	1.057	-.034	-.186	.854
	NC	.072	.597	.016	.121	.904
	GIA2	1.181	1.169	.146	1.010	.320
	OGPA	8.287	1.786	.674	4.641	.000

a. Dependent Variable: Points; Model Summary: R2: .534, adjusted R2: .414, ANOVA F value: 4.446 (significant at .001)

TABLE 9
PARTIAL CORRELATION COEFFICIENTS
OF EACH DISTRACTION FACTOR WITH GRADE[a]

Part A   *Part B*

	Grade	NWH	TJ	NC		Grade	NWH	TJ	NC
Grade		-.156	.035	.014	Grade		-.097	.099	-.018
NWH	-.081				NWH	.069			
TJ	.211				TJ	.037			
NC	.091				NC	.022			

Part A: While controlling for the other two distraction factors.
Part B: While controlling for the other two distraction factors as well as prior actual ability factors (GIA2 & OGPA).
***, **, * Indicate significances at .01, .05, and .10 levels respectively.
[a] Commuter school coefficients are above the diagonal and residential school coefficients are under the diagonal.

TABLE 10
PARTIAL CORRELATION COEFFICIENTS
OF EACH DISTRACTION FACTOR WITH POINTS[a]

Part A   *Part B*

	Points	NWH	TJ	NC		Points	NWH	TJ	NC
Points		-.236	.121	-.066	Points		-219	.173	-.109
NWH	-.031				NWH	.069			
TJ	.190				TJ	.037			
NC	.098				NC	.022			

Part A: While controlling for the other two distraction factors.
Part B: While controlling for the other two distraction factors as well as prior actual ability factors (GIA2 & OGPA).
***, **, * Indicate significances at .01, .05, and .10 levels respectively.
[a] Commuter school coefficients are above the diagonal and residential school coefficients are under the diagonal.

APPENDIX B
COPY OF THE SURVEY INSTRUMENT

Survey of Students Taking the Senior Seminar

This survey is for undergraduate students, and will be used only to study factors that may affect the performance of students in their Senior Seminar course. The information you provide will be aggregated with data from other students, will be held in strictest confidence, and will never be used to evaluate you individually. Participation in the survey is completely voluntary. However, the researchers will very much appreciate your participation. You participation in the survey will be beneficial to students taking this course in the future.

1.   The grade I would like to earn in this course is:
        a. ___an A
        b. ___at least a B
        c. ___a C is fine with me

2.   Are you planning to take the CPA exam?
        _____Yes   _____No   _____Maybe

3.   Are you planning to attend graduate school?
        _____Yes   _____No   _____Maybe

4.   In an average week, how many hours do you work at a job? _____ Hours

5.   My job is:
        _____ Accounting related
        _____ Business related (but not accounting)
        _____ Other
        ___ __ I do not work

6.   How many courses are you taking this semester?   _____ Courses

7.   What was your grade for Intermediate Accounting II (ACC 322)?
        _____A_____B_____C   _____D

8.   What is your overall GPA? _____

        Now, tell us how you feel about your abilities listed below:

9.   My writing ability is:
        a. ___Very good
        b. ___Good
        c. ___Average
        d. ___Poor

10.   My math ability is:
        a. ___Poor
        b. ___Average
        c. ___Good
        d. ___Very good

11.   My reading ability is:
        a. ___ Very good
        b. ___ Good
        c. ___ Average
        d. ___ Poor

12   My listening ability is:
        a. ___Poor
        b. ___Average
        c. ___Good
        d. ___Very good

For classification purposes, please provide the following:
- Your student ID number _____

- Your gender: Male _____   Female_____

- Your age group

    18-22_____, 23-27 _____, 27+_____

THANK YOU VERY MUCH FOR YOUR PARTICIPATION IN THIS SURVEY