Motivation and Distraction Factors Associated with Student Performance in Intermediate Accounting: An Empirical Investigation

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Of the variables used as proxies for motivation, the intended grade was found to be associated with student performance, but intention to take the CPA exam or attend graduate school were not. Intermediate Accounting-I grade and GPA were found to be strong predictors of student performance. Of the self-perceived reading, math, writing and listening abilities, only the math ability had some associations with student performance after controlling for the prior actual ability variables. Surprisingly, holding non-accounting-related jobs, working high numbers of hours per week, and taking on higher course loads did not have significant negative associations with student performance.

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 the author is aware of has considered the association between motivation, prior actual ability, current self-perceived ability, and distraction factors and student performance in intermediate level undergraduate accounting courses. This study considers the associations between these factors and student performance in the Intermediate Accounting-Part II course (here after referred to as Intermediate II).

A non-scientific internal analysis of student performance in this course at the author's school showed that many students who had high grades in prior courses earned low grades in this course and vice versa. The author wondered what are some possible factors that may be associated with student performance in this particular course. 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 the author presents a review of prior research and describes the study variables, hypotheses, sample, statistical tests, and research results. The author ends the paper with some conclusions, recommendations, study limitations, and some suggestions for further research.

REVIEW OF PRIOR RESEARCH

Many studies in the past have explored various factors (e.g., general academic performance, aptitude, prior exposure to mathematics, prior exposure to accounting, gender, age, 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, Bouillon, and Smith 1991). 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 GPA and the grade in Intermediate Accounting II are strong predictors of student performance in 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, Goedde, and Ward (1996) find 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 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, 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. Other conflicting results are observed about the association between student performance in introductory accounting and their performance in non-introductory accounting courses. For example, Canlar (1986) finds evidence that college-level exposure to accounting is positively related to student performance in the first MBA-level financial accounting course. Also, Tickell and Smyrnios (2005) find that the best predictor of academic performance in any one year is the performance in the same discipline in the previous year. In contrast, Doran, Bouillon, and Smith (1991) show that performance in the introductory accounting course has a negative impact on performance in subsequent 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. On the other hand, Gist, Goedde, and Ward (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.

Age and gender are two demographic variables that receive less attention than those factors discussed above, but the results are still inconclusive. For example, Bartlett, Peel and Pendlebury (1993) and Koh and Koh (1999) suggest that younger students have better performance, particularly at the senior university level. However, Jenkins (1998) and Lane and Porch (2002) conclude that age is not a significant determinant of performance in auditing and management accounting courses. The studies related to gender also produce conflicting results. Some studies indicate that male students perform better than female ones, but the results are either insignificant (for example, Lipe 1989) or only hold true for introductory courses (Doran, Bouillon and Smith 1991). Additionally, Mutchler, Turner and Williams (1987) finds that female students score significantly higher than male students. Furthermore, Gracia, Jenkins, and Ellis (2003) find there is a significant difference in the performance in favor of female students over male students in Wales. However, this finding was limited to the second year of a degree program in accounting and finance. In contrast, 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. Similarly, Gammie, *et al* (2003) find there is very little indication of performance differential between males and females throughout the degree program.

Bartlett, Peel and Pendlebury (1993) concluded that very few of the educational, demographic or financial characteristics variables appear to have a significant influence on student performance in university accounting examinations. Gracia, Jenkins, and Ellis (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.

Prior studies about the influence of motivation and effort on student performance also report conflicting results. For example, 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 contra-intuitive evidence that the more time spent studying per week, the lower the grade in the introductory finance course. Also, using self-reported data, Nofsinger and Petry (1999) find no significant relationship between effort and performance. In contrast, 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. 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 or for problem solving.

STUDY VARIABLES

The author uses two dependent variables and 12 independent variables in the study.

Below the author list these variables starting with the abbreviation used for each variable in the statistical models and ending with a definition or an explanation of the variable. For each question representing an independent variable the author lists the possible responses in parentheses "[ ]"

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Dependent Variables:

1. *Points:* The actual average number of points (including mid-term and final examinations, cases, term papers, class presentations, and other projects) a given student received in the course.
2. *Grade:* The letter grade (e.g., A, B, or C,) a given student received in the course.

Independent Variables:

1. *grademk:* The grade I would like to make in the course is [a. an A; b. at least a B; c. a C is fine with me].
2. *cpa:* Do you intend to take the CPA exam? [a. Yes; b. No; c. Maybe].
3. *grad:* Do you intend to attend graduate school? [a. Yes, at this school; b. Yes, but at another school; c. No; d. Maybe].

4. *grade321:* What was your grade for ACTG 321 (Intermediate Accounting I)?* [a. A; b. B; c.C]
5. *gpac:* What is your cumulative GPA?* [___].
6. *write:* My writing ability is [a. Very good; b. Good; c. Average; d. Poor].
7. *math:* My math ability is [a. Very good; b. Good; c. Average; d. Poor].
8. *read:* My reading ability is [a. Very good; b. Good; c. Average; d. Poor].
9. *listen:* My listening ability is [a. Very good; b. Good; c. Average; d. Poor].
10. *job:* My job outside of school is [a. Accounting; b. Business related (but not accounting); c. Other].
11. *hrs:* In an average week, how many hours do you work at a job outside of school? [____ hours].
12. *load:* How many courses are you taking this semester? [____ courses].

* Note: the author double checked the response to this question with the university records using only the students' identification numbers for confidentiality reasons.

Categorization of Independent Variables:

The author classifies the 12 independent variables into four categories of factors that may be associated with students' performance in Intermediate II as follows:

Category 1: Motivation: Independent variables 1 through 3.
Category 2: Prior Actual Ability: Independent variables 4 and 5.
Category 3: Current Self-perceived Ability: Independent variables 6 through 9.
Category 4: Distraction: Independent variables 10 through 12.

The author discusses 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**.** The 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 the author will not give the null hypotheses but will state all hypotheses in the alternate form as shown below:

> *Ha1: There is a positive association between the grade a given student would like to make and that student's performance in Intermediate II.*

The second variable is whether the student intends to take the CPA exam. The 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.

> *Ha2: There is a positive association between a student's intention to take the CPA exam and that student's performance in Intermediate II.*

The third motivation variable is whether the student intends to attend graduate school. The 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.

> *Ha3: There is a positive association between a student's intention of attending graduate school and that student's performance in Intermediate II.*

Prior Actual Ability Factors:

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

The first variable is the student's grade in Intermediate Accounting I. The hypothesis is that students who earned higher grades in Intermediate Accounting I (which is a prerequisite for Intermediate II) will earn higher grades in Intermediate II than students who earned lower grades in Intermediate I.

> *Ha4: There is a positive association between a student's grade in Intermediate Accounting I and that student's performance in Intermediate II.*

The second variable is the student's cumulative GPA. The hypothesis is that students with higher cumulative GPAs will earn higher grades in Intermediate II than students with lower cumulative GPAs.

> *Ha5: There is a positive association between a student's cumulative GPA and that student's performance in Intermediate II.*

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. The hypotheses are that students who perceive their writing, math, reading, and listening abilities to be good or very good will earn higher grades in Intermediate II than students who perceive their abilities in these four areas to be average or poor.

> *Ha6: There is a positive association between a student's perception of his/her writing ability and that student's performance in Intermediate II.*

> *Ha7: There is a positive association between a student's perception of his/her math ability and that student's performance in Intermediate II.*

> *Ha8: There is a positive association between a student's perception of his/her reading ability and that student's performance in Intermediate II.*

> *Ha9: There is a positive association between a student's perception of his/her listening ability and that student's performance in Intermediate II.*

Distraction Factors:

The fourth category, distraction, includes three variables:

The first variable is the student's job type outside of school. The 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 Intermediate II than students whose jobs are accounting related.

> *Ha10: There is an association between a student's type of job outside of school and that student's performance in Intermediate II. (Accounting-related jobs are hypothesized to have a positive association with higher student performance, and non-accounting-related jobs are hypothesized to have a positive association with lower student performance).*

The second variable is the number of hours per week the student works outside of school. The 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.

Ha11: 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 Intermediate II.

The third variable is the number of courses per semester the student is taking. The hypothesis is that students who are taking more courses than average (four courses in fall and spring and two courses in summer) are more distracted because they spend less time studying per course and, therefore, will earn lower grades than students who take average or fewer courses.

Ha12: There is a negative association between a student's course load and that student's performance in Intermediate II.

STUDY SAMPLE

The study sample includes 98 students enrolled in Intermediate II at a major metropolitan university. The university in which the author conducted this study is a commuter public university located in one of the largest cities in the United Sates and enrolls about 12,000 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 the students work almost full time. They combine studying with working and raising a family. The author 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 Intermediate II. To obtain a large enough sample size, the author collected data over several consecutive semesters: Fall 2008 and spring, summer, and fall 2009. To avoid any possible instructor effect, the author collected data from only the students he taught. No data were collected from students taking Intermediate II with other instructors. Furthermore, to make sure that there are no significant differences in responses from semester to semester, the author ran the statistical models using the responses for each semester separately. The author then compared the responses for each semester to the other semesters, and found no significant differences. Even though the usable responses in the final sample were 98, some students left some questions (independent variables) unanswered. Thus, some of the 12 variables have less than 98 observations each.

STATISTICAL TESTS AND RESEARCH RESULTS

At the beginning of this research project the author 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 thinking about this further, the author realized that using the letter grade to operationally define student performance had two drawbacks: (a) like most faculty, the author often curves upward the average actual points received by every student before determining the letter grade thus the letter grade may not capture the student's own performance before curving , and (b) because the author's school does not attach pluses or minuses to the letter grade, that 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). As a result, in addition to using the grade to define performance, the author 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 the author might have made. All points used in the study were based on a maximum total of 100 points. The author used the one-way analysis of variance (ANOVA), correlations, partial correlations, and regression statistical models to test the hypotheses. Because the grade is not a continuous but a ranked variable, the author used Spearman correlations. But because the total "points" earned by each student is a continuous variable, the author used Pearson correlations. TABLE 1 presents the one-way ANOVA using "grade" as the dependent variable and TABLE 2 presents one-way ANOVA using "points" as the dependent variable. TABLE 3

presents Spearman correlations for "grade", and TABLE 4 presents Pearson correlations for "points." TABLE 5 presents partial correlations using "grade" as a measure of student performance after controlling for the actual ability variables (the grade in Intermediate I and the cumulative GPA), and TABLE 6 presents partial correlations using "points" as a measure of student performance after controlling for the actual ability variables (the grade in Intermediate I and the cumulative GPA). TABLE 7 presents regression analysis using "grade" as the dependent variable, and TABLE 8 presents regression analysis using "points" as the dependent variable. Tables 1 to 8 are shown in Appendix A.

DISCUSSION OF THE STATISTICAL RESULTS IN TABLES 1-8 IN APPENDIX A

The author provides below an analysis of the statistical results of the study by the type of factors associated or not associated with student performance.

Motivation Factors Associated with Student Performance:

As Tables 1 indicates, two of the three motivation variables (the grade the student would like to make in the course and the student's intention to sit for the CPA exam) are significantly associated with student performance defined as "grade" (at the .01 and the .05 significance levels respectively). The remaining third motivation variable (student's intention to go to graduate school) has no significant association with student performance defined as "grade." As Table 2 indicates, these same results are confirmed when student performance is measured as "points" except that the association between intention to sit for the CPA exam and student performance is significant at the .10 significance level. As Table 3 indicates, Spearman's correlations confirm that the grade the student would like to make in the course is significantly associated (at the .01 level) with student performance defined as "grade." However, the association between intention to sit for the CPA and student performances becomes non- significant, and the association between intention to go to graduate school and student performance becomes significant at the .05 level. On the other hand, as Table 4 indicates, using Pearson's correlations and "points" as a measure of student performance, all the three motivation variables (would-like-to-make grade, intention to sit for the CPA exam, and intention to go to graduate school) are significantly associated with student performance (at the .01, .05 and .10 respectively). Apparently, the students who would like to earn higher grades intend to sit for the CPA exam, and go to graduate school are the same students who have higher grades in Intermediate Accounting I and higher GPAs. This is so, because after controlling for these prior actual ability variables, as indicated by the partial correlations shown in Table 5 (using "grade" as a measure of student performance) and in Table 6 (using "points" as a measure of student performance) all significant correlations between the three motivation variables and student performance have disappeared. Regression analyses shown in Table 7 (for "grade) and Table 8 (for "points") also show no significant correlations between the three motivation variables and student performance however measured.

Prior Actual Ability Factors Associated with Student Performance:

The one-way ANOVA and correlations tests, as shown in Tables 1-4, indicate that the two variables representing prior actual ability (the grade in Intermediate I and GPA) have significant associations with student performance defined either as the "grade" or the average actual "points" received for the course. All associations are significant at the .01 level except the one-way ANOVA, in Table 1, showing that the association between GPA and student performance measured as "grade" is significant at the .05 significance level. However, the regression analyses in Tables 7 and 8 show that the grade in Intermediate I does not explain, in any significant way, the student performance in Intermediate II. These regression analyses show that there is a significant association between GPA and student performance in Intermediate II, and this association is significant at the .05 significance level when student performance is measured as the "grade" earned and at the .01 level when student performance is measured as "points" earned.

Current Self-Perceived Ability Factors Associated with Student Performance:

As Table 1and 3 indicate, three of the four self-perceived ability variables (the student's math, reading, and listening abilities) have significant associations with student performance defined as "grade" (all at the .01 level except the association between reading ability and student performance using one-way ANOVA which is significant at the .05 level). However, as Tables 2 and 4 indicate, when student performance is measured as "points," only one of the four variables (student's listening ability) has a significant association with student performance and only at the .05 significance level. Likewise, the regression analyses in Tables 7 and 8 show that only one of the four variables (student's math ability) has a significant association with student performance and only at the .05 significance level whether student performance is measured as the "grade" or the "points" earned for the course. Interestingly, however, after controlling for prior actual ability variables (grade in Intermediate I and GPA), only student's self-perceived math ability has a significant association with student performance (at the .05 level when performance is measured as the "grade" earned and the .10 level when student performance is measured as the "points' earned.) All tests (ANOVA, correlations, and regressions) show no significant association whatsoever between the student's writing ability and student performance however defined.

Distraction Factors Associated with Student Performance:

All tests (one-way ANOVA, correlations, and regressions) show no significant association whatsoever between any of the three distraction variables and student performance however defined. The only exception to this is that the regression analysis, when student performance is measured as "grade," shows some association (only at the .10 significance level) between the type of job and student performance.

CONCLUSIONS AND RECOMMENDATIONS

One general conclusion of the study is that, as expected, students with high prior actual ability end up earning higher grades in Intermediate II than students with low prior actual ability. Specifically, the study provides evidence that student performance in Intermediate Accounting I and their cumulative GPA are strong predictors of student performance in Intermediate II. This study's result that student performance in Intermediate Accounting I is a strong predictor of student performance in Intermediate Accounting II 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 the Intermediate II course 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, the author recommends that faculty encourage their students to work hard to get high grades in all the courses they take to increase their GPA. The author further recommends that faculty who teach Intermediate Accounting I encourage their students to work hard and try to do well in that course by emphasizing that research shows that students who earn high grades in that course will most likely earn high grades in the Intermediate II course.

Another general conclusion of the study is that motivated students (in terms of the variables used as proxy for motivation in this study) earn higher grades in the Intermediate II course than students who are not motivated. However, these motivated students are those who are motivated since they start their college education because, as mentioned in the first conclusion above, the study shows strong correlation between students' GPA and their grades in Intermediate Accounting II. More specifically, before controlling for GPA and grade in Intermediate I, the study provides evidence that the majority of students who responded that they would like to make high grades in this course 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 factors that are motivating the students to want to make high grades. This study looked at two possible factors: students' intention to sit for the CPA exam and their intention to attend graduate school. The results show moderate to weak evidence that these two reasons are good motivating variables but only for students with strong prior actual ability.

In light of this general conclusion, the author recommends 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. The author realizes that some faculty may already be doing this; thus, these recommendations are for those who may not be.

A third general conclusion of this study is that self-perceived math, reading and listening abilities have strong associations with student performance (defined as "grade") but only the self-perceived listening ability has a significant association with student performance (defined as "points.") More specifically, the study provides evidence that those students who reported that their math, reading, and listening abilities are good or very good earned higher grades than those who reported that their math, reading, and listening abilities are average or poor. Interestingly, however, after controlling for prior actual abilities (the grade in Intermediate I and GPA), only the self-perceived math ability has a significant association with student performance. The association is more pronounced (at .05 level) when student performance is measured by the "grade" earned than when it is measured by the "points" earned (at .10 level). The regression analyses confirm the same point that the self-perceived math ability is the only one that provides some significant explanation of student performance however measured.

In light of this general conclusion, the author recommends that accounting faculty encourage their students to concentrate on improving all their abilities (writing, math, reading and listening) but especially their math skills by informing them that research shows that there is some correlation between good reading and listening skills and student performance, and strong correlation between the math ability and student performance. Again, the author realizes that some faculty may already be encouraging their students to improve their skills in these areas; thus this recommendation is for those who may not be.

The fact that this study shows no significant association between the self-perceived writing ability and student performance (however defined) is puzzling. One explanation for this may be that students tend to over-estimate their writing ability, assuming that if they can write then their writing ability is good or even very good. For example, an analysis of the cross tabulation of responses to this question shows that of the 20 students receiving a C grade, 10 (or 50%) reported that their writing ability is good and 5 (or 25%) reported that their writing ability is very good. So, it is possible that their self-perception of their abilities in this area is not an accurate representation of their actual abilities.

A fourth general conclusion of this study is that none of the distraction variables have significant *negative* associations with student performance (with the exception of a weak association between the type of job and student performance only under the regression test). That is, these distraction variables (type of job, number of weekly work hours, and course load) are not distracting the students and preventing them from earning high grades.

In light of this conclusion the author recommends that accounting faculty need not encourage their students to work as few hours per week as possible to earn high grades. And if the students have to work many hours anyway (at any type of job) 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 Intermediate II.

STUDY LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

The study is subject to some limitations. One limitation is that the study school is a public university and, therefore, it is not known 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 the study school is a commuter school and, therefore, it is not known 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 in the study school, the student body is highly diversified and, therefore, it is not known 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 the study school students work almost full time while going to school and, therefore, it is not known 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 size and, thus, are not as robust as they could have been if the sample size were larger. Hence, a fifth suggestion for future research is to replicate the study using a 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, 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, 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, 19-28.

Buckless, F. A., Lipe, M. G. and Ravenscroft, S.P. (1991). "Do Gender Effects on Accounting Course Performance Persist After Controlling for General Academic Aptitude?" *Issues in Accounting Education,* vol. 6, 248-261.

Canlar, M. (1986). "College-level Exposure to Accounting Study and Its Effect on Student Performance in the First MBA-level Financial Accounting Course", *Issues in Accounting Education,* vol. 1, 13-23.

Didia, D. and Hasnat, B. (1998). "The Determinants of Performance in the University Introductory Finance Course", *Financial Practice and Education,* vol. 1, 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, 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, 409-430.

Eckel, N. and Johnson, W.A. (1983). "A Model for Screening and Classifying Potential", *Accounting Education,* vol. 2, 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), 137-147.

Gammie, E., Paver, B., Gammie, B, and Duncan, F. (2003). "Gender Differences in Accounting Education: An Undergraduate Exploration", *Accounting Education* (June), vol. 12, 177-197.

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, 49-60.

Gracia, L. and Jenkins, Ellis (2003). "A Quantitative Exploration on an Undergraduate Accounting Programme of Study", *Accounting Education* (March), vol. 12, 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, 33-42.

Guney, Y. (2009). "Exogenous and Endogenous Factors Influencing Students' Performance in Undergraduate Accounting Modules", *Accounting Education* (February), vol. 18, 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), 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), 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, 33-42.

Jenkins, E. K. (1998). "The Significant Role of Critical Thinking in Predicting Auditing Students' Performance", *Journal of Education for Business,* vol. 5, 274-280.

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), 67-72.

Kohl, M. Y. and Kohl, H. C. (1999). "The Determinants of Performance in an Accountancy Degree Course", *Accounting Education: an international journal,* vol. 1, 13-29.

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, 109-118.

Lipe, M. G. (1989). "Further Evidence on the Performance of Female Versus Male Accounting Students", *Issues in Accounting Education,* vol. 1, 144-152.

Lynn, S. and Robinson-Backmon, I. (2005). "An Investigation of an Upper-Division Undergraduate Accounting Course and the Factors That Influence Learning Outcomes", vol. 13, 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, 16-32.

Mutchler, J. E., Turner, T. H. and Williams, D.D. (1987). "The Performance of Female Versus Male Accounting Students", *Issues in Accounting Education*, vol. 1, 103-111.

Nosfinger, J. and Petri, G. (1999). "Student Study Behavior and Performance in Principles of Finance", *Journal of Financial Education,* (spring), 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, 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, 275-285.

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

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

Tickell, G. and Smyrnios, K. (2005). "Predictors of Tertiary Accounting Students' Academic Performance: A Comparison of Year 12-to-University Students with TAFE-to-University Students", *Journal of Higher Education Policy and Management,* (July), vol. 27, 239 – 259.

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

Tyson, T. (1989). "Grade Performance in Introductory Accounting Courses: Why Female Students Outperform Males", *Issues in Accounting Education,* vol. 1, 153-160.

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, 357-373.

APPENDIX A: TABLES

TABLE 1
ANALYSIS OF VARIANCE FOR STUDENT PERFORMANCE MEASURED BY GRADE

Panel A: ANOVA for points using variable grademk

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Grademk	2	24.55	12.28	20.758	0.000
Error	87	51.45	.59		
Corrected Total	89	76.00			

Panel B: ANOVA for points using variable cpa

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Cpa	2	6.49	3.24	4.059	0.021
Error	87	69.51	.80		
Corrected Total	89	76.00			

Panel C: ANOVA for points using variable grad

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Grad	3	3.96	1.32	1.575	0.201
Error	86	72.04	.84		
Corrected Total	89	76.00			

Panel D: ANOVA for points using variable grade321

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
grade322	2	15.85	7.92	11.460	0.000
Error	87	60.15	.69		
Corrected Total	89	76.00			

Panel E: ANOVA for points using variable gpac

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Gpac	30	27.28	.91	2.021	0.036
Error	26	11.70	.45		
Corrected Total	56	38.98			

Panel F: ANOVA for points using variable write

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Write	3	2.38	.79	.928	0.431
Error	86	73.62	.86		
Corrected Total	89	76.00			

Panel G: ANOVA for points using variable math

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
math	2	7.54	3.77	4.790	0.011
Error	87	68.46	.79		
Corrected Total	89	76.00			

Panel H: ANOVA for points using variable read

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Read	2	6.28	3.14	3.92	0.023
Error	87	69.72	.80		
Corrected Total	89	76.00			

Panel I: ANOVA for points using variable listen

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Listen	3	16.00	5.33	7.64	0.000
Error	86	60.00	.70		
Corrected Total	89	76.00			

Panel J: ANOVA for points using variable job

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Job	3	3.93	1.31	1.499	0.221
Error	79	69.06	.87		
Corrected Total	82	72.99			

Panel K: ANOVA for points using variable hrs

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Hrs	22	21.97	1.00	1.238	0.248
Error	67	54.03	.81		
Corrected Total	89	76.00			

Panel L: ANOVA for points using variable load

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Load	5	3.75	.75	0.872	0.503
Error	84	72.25	1.86		
Corrected Total	89	76.00			

TABLE 2
ANALYSIS OF VARIANCE FOR STUDENT PERFORMANCE MEASURED BY POINTS

Panel A: ANOVA for points using variable grademk

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Grademk	2	4680.62	2340.31	19.84	0.000
Error	89	10501.25	117.99		
Corrected Total	91	15181.87			

Panel B: ANOVA for points using variable cpa

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Cpa	2	935.31	467.65	2.92	0.059
Error	89	14246.56	160.07		
Corrected Total	91	15181.87			

Panel C: ANOVA for points using variable grad

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Grad	3	700.31	233.44	1.42	0.243
Error	88	14481.56	164.56		
Corrected Total	91	15181.87			

Panel D: ANOVA for points using variable grade321

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
grade322	2	3298.35	1649.18	12.35	0.000
Error	89	11883.52	133.52		
Corrected Total	91	15181.87			

Panel E: ANOVA for points using variable gpac

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Gpac	30	4651.44	155.05	2.48	0.011
Error	26	1627.44	62.56		
Corrected Total	56	6278.88			

Panel F: ANOVA for points using variable write

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Write	3	526.38	175.46	1.05	0.373
Error	88	14655.49	166.54		
Corrected Total	91	15181.87			

Panel G: ANOVA for points using variable math

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Math	2	376.26	188.13	1.13	0.327
Error	89	14805.61	166.36		
Corrected Total	91	15181.87			

Panel H: ANOVA for points using variable read

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Read	2	368.16	184..08	1.11	0.335
Error	89	14813.71	166.45		
Corrected Total	91	15181.87			

Panel I: ANOVA for points using variable listen

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Listen	3	1351.44	450.48	2.87	0.041
Error	88	13830.43	157.16		
Corrected Total	91	15181.87			

Panel J: ANOVA for points using variable job

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Job	3	989.70	329.90	1.93	0.131
Error	81	13825.55	170.69		
Corrected Total	84	14815.25			

Panel K: ANOVA for points using variable hrs

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Hrs	22	3709.08	168.60	1.01	0.460
Error	69	11472.79	166.27		
Corrected Total	91	15181.87			

Panel L: ANOVA for points using variable load

Source	*DF*	*Sum of Squares*	*Mean Square*	*F Value*	*Pr*
Load	5	436.32	87.26	0.51	0.769
Error	86	14745.55	171.46		
Corrected Total	91	15181.87			

TABLE 3
SPEARMAN CORRELATION COEFFICIENTS FOR GRADE

	Grade	*Grademk*	*Cpa*	*grads*	*grade321*	*Gpac*	*write*	*math*	*read*	*listen*	*job*	*hrs*	*load*
Grade													
grademk	0.564***												
Cpa	0.167	0.057											
Grads	0.203**	0.192*	0.448***										
grade321	0.443***	0.427***	0.018	0.023									
Gpac	0.633***	0.534***	0.254**	0.074	0.368***								
Write	-0.041	-0.047	-0.024	0.003	-0.114	0.073							
Math	0.310***	0.149	0.072	0.001	0.034	0.002	0.176*						
Read	0.283***	0.134	0.282***	0.210**	0.051	0.396***	0.374***	0.212**					
Listen	0.410***	0.394***	0.077	0.001	0.275***	0.408***	0.220**	0.325***	0.408***				
Job	-0.060	0.087	0.082	0.063	0.176	-0.140	0.045	-0.029	0.116	0.107			
Hrs	-0.001	-0.029	0.057	-0.067	-0.037	0.097	0.075	-0.141	0.065	-0.016	0.1558		
Load	-0.018	0.074	0.114	0.216**	-0.011	0.041	-0.010	0.279***	0.069	0.153	-0.209**	-.417***	

***, **, * indicate significances at .01, .05, and .10 level.

TABLE 4
PEARSON CORRELATION COEFFICIENTS FOR POINTS

	Points	*grademk*	*Cpa*	*grads*	*grade321*	*Gpac*	*write*	*math*	*read*	*listen*	*job*	*hrs*	*load*
Points													
grademk	0.547***												
cpa	0.218**	0.095											
grads	0.184*	0.201**	0.419***										
grade321	0.466***	0.424***	0.046	0.002									
gpac	0.772***	0.647***	0.384**	-0.002	0.365**								
write	-0.106	-0.017	-0.006	0.006	-0.108	0.245							
math	0.157	0.157	0.062	0.034	0.037	0.096	0.162						
read	0.156	0.155	0.285***	0.198**	0.046	0.454***	0.388***	0.193*					
listen	0.241**	0.391***	0.070	-0.007	0.280***	0.524***	0.206**	0.302***	0.376***				
job	-0.021	0.112	0.062	0.046	0.180*	-0.090	0.056	-0.032	0.106	0.104			
hrs	-0.025	0.001	0.007	-0.035	-0.025	-0.116	0.113	-0.154	0.062	-0.004	0.241**		
load	-0.029	0.057	0.115	0.253***	-0.014	0.101	0.002	0.286***	0.059	0.136	-0.224**	-.362***	

***, **, * indicate significances at .01, .05, and .10 level.

TABLE 5
PARTIAL CORRELATION COEFFICIENTS FOR GRADE
AFTER CONTROLLING FOR GRADE IN INTERMEDIATE I AND GPA

	Grade	*Grademk*	*Cpa*	*grads*	*write*	*Math*	*read*	*listen*	*job*	*hrs*	*load*
grademk	0.130										
cpa	-0.017	-0.019									
grad	0.102	0.157	0.306**								
write	-0.084	0.023	0.012	-0.017							
math	0.309**	0.067	-0.054	-0.162	0.082						
read	0.137	0.063	0.046	0.053	0.394***	0.195					
listen	0.164	0.191	-0.131	-0.136	0.293**	0.326**	0.316**				
job	-0.148	0.086	0.278**	0.011	0.268*	0.071	0.312**	0.140			
hrs	0.073	-0.041	0.094	0.056	0.187	-0.082	0.145	-0.022	0.383***		
load	-0.071	0.180	-0.089	0.225	-0.215	-0.014	-0.182	-0.014	-0.185	-.487***	

***, **, * indicate significances at .01, .05, and .10 level.

TABLE 6
PARTIAL CORRELATION COEFFICIENTS FOR POINTS
AFTER CONTROLLING FOR GRADE IN INTERMEDIATE I AND GPA

	Points	*grademk*	*Cpa*	*grads*	*Write*	*Math*	*read*	*listen*	*job*	*hrs*	*load*
grademk	0.144										
cpa	-0.035	-0.019									
grad	0.116	0.157	0.306**								
write	-0.094	0.023	0.012	-0.017							
math	0.250*	0.067	-0.054	-0.162	0.082						
read	0.089	0.063	0.046	0.053	0.394***	0.195					
listen	-0.014	0.191	-0.131	-0.136	0.293**	0.326**	0.316**				
job	-0.174	0.086	0.278**	0.011	0.268*	0.071	0.312**	0.140			
hrs	0.017	-0.041	0.094	0.056	0.187	-0.082	0.145	-0.022	0.383***		
load	-0.071	0.180	-0.089	0.225	-0.215	-0.014	-0.182	-0.014	-0.185	-.487***	

***, **, * indicate significances at .01, .05, and .10 level.

TABLE 7
LINEAR REGRESSION COEFFICIENTS FOR ALL VARIABLES ON GRADE

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.664	1.115		-1.492	.143
	CPA	.028	.213	.016	.131	.897
	Grad school	.113	.119	.113	.949	.348
	Grade make	.152	.201	.102	.757	.453
	Inter I	.145	.119	.146	1.220	.229
	GPA	.812	.344	.400	2.362	.023
	Writing	-.139	.124	-.132	-1.123	.268
	Math	.287	.137	.235	2.095	.042
	Reading	.122	.139	.115	.872	.388
	Listening	.129	.179	.093	.721	.475
	Hours	.008	.008	.126	.973	.336
	Job	-.210	.122	-.221	-1.717	.094
	Load	-.059	.100	-.076	-.587	.561

a. Dependent Variable: Grade

TABLE 8
LINEAR REGRESSION COEFFICIENTS FOR ALL VARIABLES ON POINTS

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	10.471	12.561		.834	.409
	CPA	-.487	2.394	-.023	-.203	.840
	Grad school	1.323	1.344	.103	.984	.331
	Grade make	2.488	2.261	.131	1.101	.277
	Inter I	1.366	1.336	.108	1.022	.313
	GPA	15.574	3.874	.600	4.020	.000
	Writing	-1.050	1.394	-.078	-.753	.456
	Math	3.064	1.544	.196	1.985	.054
	Reading	1.270	1.570	.094	.808	.424
	Listening	-1.214	2.012	-.069	-.603	.550
	Hours	.036	.094	.043	.379	.707
	Job	-2.049	1.375	-.169	-1.491	.144
	Load	-.975	1.126	-.098	-.866	.392