Journal of Accounting, Ethics & Public Policy
Volume 7, No. 2 (2007)

FACTORS IMPACTING ACADEMIC ACHIEVEMENT OF ACCOUNTING STUDENTS

Peter A. Aghimien[1]
Indiana University South Bend

Richard L. Banham
Tennessee State University

Key Words: accounting students, academic achievement

JEL Codes: I21, M41

ABSTRACT

This study explores the factors impacting academic achievement of accounting students. Those who major in accounting need to plan their various activities in a manner that will ensure laudable performance in their college education. Analysis of data gathered from a predominantly White institution and a predominantly African-American institution help in furthering an understanding of the factors that affect academic performance.

Parents, students, universities, funding agencies, and the accounting profession need to be aware that course load, registering for more hours and dropping a course, and financial resources, were among the factors that significantly affects performance.

1 The authors gratefully acknowledge the financial assistance received from the AICPA faculty summer seminar research grant. Data used in this study is available on request from either of the authors.

INTRODUCTION

Introductory accounting courses, never the easiest classes to teach, have become more perplexing for the instructors and frustrating for the students. In addition to the expansion of business schools, who require accounting for all majors, there has been also an increase in the non-traditional student population. Our texts, methods, and schedules have been developed around a model of full-time, late adolescent students with few serious involuntary demands on their time. However, the model fits a smaller percentage of our students each year, yet we have little research to help us understand the environmental factors which may influence student performance and which could guide us as teachers and advisors.

Looking at the issue of student performance by focusing on non-traditional students, however, suggests an assumption about the backgrounds and environments of these students that cannot be supported. For one thing, non-traditional students are incredibly diverse in their backgrounds, experiences, and current environments. Second, faculty at many urban schools are concerned about student performance generally, even among those who fit a more traditional profile.

The definition of nontraditional student may be elusive. The literature generally looks at students who are older than 24 years (Hemby 1995), have an interrupted educational experience and/or married (Harris 1993). The use of the age of 24 as a separator appears to be arbitrary. Is there an age barrier or are students currently under 24 who are working full-time and attending school part time actually nontraditional students? What about single parents, who may or may not be over the age of 24, are they traditional students?

Is the traditional student one who lives on or near campus for nine months while attending school full-time? Does this student focus solely on studies and student life? Does this student only work during the summer and when returning to campus only work as part of an internship or in other educationally related endeavors? The objective of this study, however, is not to formulate a definition of the nontraditional student rather to look at students who may be defined as nontraditional and to determine what factors influence their performance in the classroom and, in particular, accounting related courses. Age and marital status may be influencing factors rather than criteria factors.

This study, therefore, looks at the results of surveys inquiring into the current conditions that might impact student performance. Data was collected from two urban state-supported universities examining the ways in which student aid, work time, previous academic performance, and self-reported motivation

interact with actual course outcomes. One of these schools, is predominantly African-American (henceforth referred to as AA), and the other, is predominately white (henceforth referred to as WH.)

Beginning in the 1980's the accounting community conducted several studies examining the factors influencing performance in early accounting courses. These studies can be divided into two groups. The first group is exemplified by Rohde and Kavanagh (1996) who were examining the impacts of high school accounting courses on student performance in subsequent accounting courses. The authors in these groups acknowledge the existence of earlier research that found previous academic performance to be important. However, while this factor was significant, authors like Eskew and Farley (1988) focused on experience, aptitude, and effort to explain performance.

The second group of studies dealt with social and economic conditions impacting on student performance. AA's student population is largely minority, a search of accounting literature revealed two studies looking specifically at minorities. Williams, et al. (1988) focused on substandard pre-college education as a determinant of academic performance. Gigliotti and Secrest, (1988) added success expectations as a significant factor impacting on test performance. While these studies may have been important, colleges and universities have created courses to overcome these deficiencies. These courses are required courses and are added to the number of hours required of students to graduate. The result is that students coming to college from a substandard pre-college background must take heavier course loads to graduate within the time limits placed on most financial aid. Could the additional courses and the constraints placed on students by financial aid programs have an impact on performance?

The accounting and business studies have parallels in literature outside business. Walter Allen (1992) examined a list of factors impacting on the performance of African-American students at "White" versus "Black" institutions. The study found five factors that appeared to have a significant influence on the students' level of achievement. Among these five factors were the students' high school grade point average (GPA) and the students' educational aspirations. The low R^2 of this study, .205, however, indicated the need for a more detailed examination.

In addition to studies focusing on minorities, other studies have found earlier grades to be important. Tan (1991) found that

college grades had a significant impact on a student's future performance in nontraditional, health-related educational institution. In the Beckenstein (1992) study, a student's first semester grades was found to be significant predictor of the two year college transfer student's successful completion of his/her four year program. Soltz (1996) also found grades to be important in study of GED Certificate student's success in college. In both these cases grades were being used to predict other grades.

The initial motivation for this study was faculty concerns over student performance in introductory accounting courses at AA. The faculty of the college had little or no other demographic data on the students enrolled in introductory courses. Over the years there had been a great deal of speculation regarding how the backgrounds of students might be impacting on their performance. The faculty was aware that some financial aid required students to work and were concerned that this when coupled with the high student course load was having a negative impact on the students' ability to focus on their education. Additionally, some of the new and visiting faculty had observed differences in the level of student preparation at AA and were concerned as to what factors might be influencing student behavior.

In an effort to better understand the factors, an initial survey form was administered to students in accounting. The information on accounting majors gathered by the survey was input into a regression model based on overall GPA. The initial model did not explain a significant amount of the variance. The initial survey was helpful in suggesting additional factors. The majority of students at AA were receiving financial aid. In addition to this aid, a large percentage of the students were also working. Several factors were suggested as influencing a student to work: professional experience, basic needs, and luxuries. A question was raised as to whether these factors might or might not have a significant impact on the student's performance. Given AA's demographics, a decision was made to expand the study to include a second school. With the aid of a grant from the American Institute of Certified Public Accountants (AICPA), the initial form was redesigned and administered to accounting principles students at AA, and WH.

RESEARCH QUESTION

The literature search and the results of the initial research suggested that a regression model with statistically significant factors could be developed that effectively explains a student's performance. The data from the initial study of students at AA was combined with other factors developed from the literature and from suggestions by participants in a research session at the AICPA's Faculty Summer Seminar. The initial study's factors had been based on the AA faculties' observations and assumptions about students. The faculty believed that many of the students in their classes were the first members of their family to attend college. As many of them had come from this background, the failure of parents to understand the demands placed on a student by college might have a negative impact on their performance.

Several other questions related to a student's family life were thought to have some influence on their performance. A student living at home versus living on campus or sharing an apartment may have fewer distractions. A student who is married may have a different approach to education than a single student who can be distracted by campus life. A student-parent attempting to manage a child, a social life, and an education may be more distracted than a single student.

The participation of students in college activities was another concern of the faculty. The demands placed on student athletes and the many students in their classes who were part of AA's school's marching band were thought to have a negative impact on performance. It was also noted that limited involvement in activities seemed to produce a positive response. The decision was made to divide the factor, hours in activities, into intervals to control for this effect.

Several other factors were also perceived to have non-linear relationship with a student's performance. These items were also divided into intervals. Age appeared to have a non-linear relationship with performance. Students, who were two or three years older than their classmates, appeared to perform better. While much older students seemed to have greater difficulties. The hours a student worked during the semester was another factor thought to make an initially positive contribution to performance followed by a negative relationship. Another factor that might serve to mitigate the negative impact of the hours a student was working was the nature of the work. Work related to a student's major could be a positive influence on the student's performance. As a student's

course related working increases, the student's performance in the classes is thought to decrease.

The number of hours a student attempts during a semester might also have an impact. The time a student invests in one course takes away from the time that could be invested in another course. Consequently, a student's academic performance in completed courses may suffer as the result of the decision to take more hours with the idea of dropping a course. Finally, a student's major, standing, and plans for the future may have an impact on classroom performance. For instance, if a student is planning on going to graduate school, he/she should know that grades are important and have a stronger dedication to his/her classes. Based on the initial study and the discussion that followed a series of hypothesis, listed in Appendix A, were developed.

One of the goals of the study is to identify factors that have an impact on performance. The measure of performance in college has always been assumed to be the course grade. Based on the information in the literature, the inclusion of the overall GPA as a variable in determining the student's semester GPA is appropriate. The factors and their nature are summarized in the following table.

TABLE 1
Factors in Regression Model

	Factor	Type of Data
1	Hours Completed	Continuous
2	Age	Interval
3	Race	Nominal
4	Marital Status	Nominal
5	Major	Nominal
6	Hours Working	Interval
7	Hours in Activities	Interval
8	Students Standing	Nominal
9	Where Student Resides	Nominal
10	Dropped a Class	Nominal
11	Keep Job on Graduation	Nominal
12	GPA	Continuous

Research Procedures

The form in Appendix B was administered in accounting courses during the later part of the Fall, 1995 semester at the two institutions. Besides gathering information on the first 12 areas listed above, the survey form would also be used to help explain the motivations influencing students to work. The students were asked to indicate the type of financial aid, if any and if they were working to pay for each of the following:

Tuition
Books
Room and board
Clothing and miscellaneous items
Car.

Following the end of the semester, the student records were consulted and the student's GPA for the semester and overall GPA were obtained. A separate factor was created for each interval in the interval variables and each category in the nominal data sets generating a total of 54 factors when combined with the two continuous variables resulting in a total of 56 variables. The initial analysis of the factors indicated that the groups were statistically different. Consequently, the groups were examined separately. The initial regression analysis based on semester GPA was inconclusive. The use of the overall GPA as a variable in the model overshadowed the other factors. However, simply removing it would adversely impact on the model. Kerlinger (1992) suggested the solution to this problem:

> "In the multiple regression approach, however, the covariate's influence is controlled just as though it were any independent variable whose influence on the dependent variable has to be controlled. The covariate can be a pretest or a variable whose influence must be 'removed' statistically."

The 55 factors were then incorporated into a MANOVA model and regressed against both the semester and overall GPA. Each variable was tested using the identity approach to determine if it was significant. In order to control for the large number of variables and the chance of increased interactions, the variables having a probability less than .10 were input into a final model. The significant factors from both models were combined and tested against the combined groups.

SURVEY RESULTS

The information gathered from the student survey of the accounting courses provides a contrasting view of two urban universities. The sample size was limited by the failure of some students at both institutions to provide a waiver so that GPA information could be obtained from the institution. In addition, many of these forms were missing important information as a consequence of the students' failure to answer the questions on the second page of the survey. The final number of forms containing the release and enough information to be used in the analysis was 360.

Demographic Information

While both universities incorporated in this study are state-supported institutions located in urban communities, the demographics of their population present a sharply contrasting view of the "urban university." The contrasting populations may, in fact, make the model developed by this study more applicable to other institutions.

The age grouping statistics provide the first glimpse of these two diverse populations.

TABLE 2
AGE GROUPS PERCENTAGES BY SCHOOL

SCHOOL	17-21	22-24	25-30	31-35	36-40	41
WH	36%	21%	20%	11%	4%	7%
AA	56%	23%	15%	3%	2%	1%

Eighty percent of the AA students are under the age of 24 as compared to 57% of the WH students. A chi-square test of assumption that the populations are drawn from the same universe was significant at .01 level. In order to provide sufficient numbers in the age groups cells, the three oldest age groups were combined into a single group.

TABLE 3
PERCENTAGES FOR MARITAL STATUS

SCHOOL	**Single**	**Married**	Single Parent
WH	67%	28%	5%
AA	84%	10%	5%

The age groupings also appear to be mirrored by the Marital Status of the two student populations. The single parent groups are the same size with the differences being between single and married. The Chi-square test of the two groups was also significant at the .01 level. The concept that marriage or having a family should increase one's motivation made this a factor to be explored in the model.

The populations are significantly different in their approach to class as indicated by the following numbers relating to hours completed and the percentage of students dropping a class.

TABLE 4
MEAN HOURS COMPLETED AND PERCENT DROPPING A COURSE

SCHOOL	Mean Hours Completed	Percent Dropping A Course
WH	10.58	4%
AA	14.46	21%

A large number of students at both schools are working. Only 15% of the WH students and 19% of the AA students indicated that they were not working. The differences in the two populations are again demonstrated by the 37% of the WH as compared to 54% of the AA students who were working 20 hours or less.

TABLE 5
PERCENT OF STUDENTS WORKING BY HOURS

Schoololl	0	1 to 5	5 to 10	11 to 15	16 to 20	21 to 25	26 to	31 to	36	40 plus
WH	15%	1%	2%	6%	13%	10%	12%	10%	12	19%
AA	19%	2%	5%	6%	10%	20%	6%	9%	12	11%

Why do students work?

The obvious answer might be to pay tuition. The two populations were significantly different in their answers to this question. Another reason may be to pay for room and board. In this case, the

colleges are nearly identical. However, these numbers must be viewed in light of the vast differences in where the two student populations reside. As before, a Chi-square test at the .01 level of significance indicates that the differences in the two populations cannot be ignored.

TABLE 6
PERCENT PAYING TUITION

SCHOOL	YES	No
WH	62%	38%
AA	37%	63%

TABLE 7
PERCENT PAYING ROOM & BOARD

School	Yes	No
WH	50%	50%
AA	45%	55%

TABLE 8
PERCENT RESIDING

School	Home	Campus	Apartment
WH	56%	1%	43%
AA	18%	44%	38%

Eighty two percent of the AA students reside away from home. The major cause of the differences may be explained, in part, by the relative availability of campus housing at AA compared with WH. Students from outside the metropolitan area of WH are limited due to a lack of on campus housing. This lack of housing at WH might force more traditional students to attend other state schools where housing is available.

Residing away from home increases the cost of school. Since the percentages of students who are working to pay room and board are virtually identical, the support would have to be coming from parents or through financial aid. Ninety three percent of the AA students receive some sort of aid as compared to 47% of the students at WH. This appears to be the case, as a larger number of AA students residing away from home should be and is reflected in a larger percentage of AA students receiving aid.

Whether a student is receiving financial aid or not, another significant cost of education is books. Students may need to work to pay these costs. Again, despite the larger difference in number of students receiving financial aid, the percentages of students working to pay for books is nearly identical in the study. The same appears to be true for clothes. The AA faculty's concerns that students were working to pay for cars seems to be a common problem based on the data from the two schools. One positive motivation for students to work is to obtain experience in their major areas. The results of the survey, however, indicate that the majority of students do not believe that their current job is related to their field of study.

TABLE 9
PERCENT WORKING TO PAY FOR BOOKS

SCHOOL	Yes	No
WH	72%	28%
AA	66%	34%

TABLE 10
PERCENT WORKING TO PAY FOR CLOTHES

SCHOOL	Yes	No
WH	84%	16%
AA	85%	15%

Table 11
WORKING TO PAY FOR CAR

School	Yes	No
WH	82%	18%
AA	73%	27%

TABLE 12
PERCENTAGE OF JOBS RELATED TO MAJOR

School	Yes	No
WH	33%	67%
AA	24%	76%

Non-work-Related Factors

Another area of concern was the potential of distractions created by a student's family that are unfamiliar with the needs and demands on a student's time. Table 13 indicates that both populations have significantly large numbers of students who have parents or siblings who attended college.

Table 13
FAMILY MEMBERS ATTENDED COLLEGE

School	Parents	Siblings	Both	None
WH	17%	31%	27%	25%
AA	29%	17%	32%	22%

The initial reason for including a question on family members attending college was concern over families not understanding the demands placed on students. When you combine the "Parents" column with the "Both" column, over 40% of the WH and over 60% of the AA students have parents and siblings who have attended college. The significantly higher number of students at WH whose parents had not attended college was an unexpected result.

When discussing age, the concept of maturity as a factor was suggested. Another measure of maturity might be the number of hours of educational experience. The beginning freshman has not experienced the demands of college. Table 14 describes the level of experience as measured by the students' hours of college work. Again, the Chi-square for the two groups was statistically significant at the .01 level. In an effort to better understand the financial aid data, students were asked to indicate the type of financial aid they were receiving. The data in Table 15 again shows the contrast

between the two schools and is important in understanding the results of this research.

TABLE 14
Percentage of Students in each Class

School	Freshman	Sophomore	Junior	Senior
WH	1%	15%	42%	43%
AA	1%	33%	26%	40%

TABLE 15
FINANCIAL AID BY TYPE

	WH	AA	Total
Loans	13%	20%	17%
Grants	12%	26%	19%
Scholarships	24%	45%	35%
Other Aid	8%	2%	5%
No Aid	43%	7%	25%
	100%	100%	100%

The vast differences in the two schools are also found in the performance of the students as measured by GPA. The mean semester GPA at WH was 2.93 as compared to the AA mean of 2.56. The overall GPA's for both schools also showed the same distinction. WH's mean was 2.86 and AA's mean was 2.64.

STATISTICAL ANALYSIS

Since the initial analysis of the data indicated that the two populations could not be combined, the two groups were analyzed separately. The factors for each of the two groups were incorporated into a MANOVA model. The model was first run for all factors to get an initial indication of significance. Then in order to control for interactions, the model was run a second time incorporating only those factors whose initial probabilities were less than .10.

The initial analysis of the data for the WH students found seven factors to be significant at a level of .10 or less (See Appendix C Table 1 for the initial results). These factors were isolated and the WH data was analyzed using only these factors. The analysis of the data is reported in Table 16.

TABLE 16
MANOVA - WH

Parameter	Value	Exact F	DF #	DF Den	Prob. >F
Whole Model	0.7234617	5.7977	12	396	<.0001
Intercept	0.8013031	24.5488	2	198	<.0001
Hours Completed	0.9440701	5.8651	2	198	0.0034
Single Parent	0.9346846	6.9181	2	198	0.0012
Age 17-21	0.7957014	25.4185	2	198	<.0001
Age 22-24	0.8491129	17.5923	2	198	<.0001
Age 25-30	0.939285	6.3670	2	197	0.0021
Undecided Major	0.9873841	1.2649	2	198	0.2845

All the factors except Undecided Major were significant at the .01 level. Inspection of the factors indicated that for each of these groups the mean GPA was lower than for that of the other groups.

The MANOVA of the AA data produced six different factors that were significant at the .10 level or less (See Appendix C Table 2 for the initial results). These factors were isolated and the MANOVA run again to produce the results reported in Table 17. In the case of AA only "Working 6-10" hours and "Dropping a Course" were significant at the .01 level. The "Age 31 Plus" factor was significant at the.05 level. Inspection of the factors found that the mean for Working 6-10 was the highest for all the working groups. The mean GPA was also highest for the "Age 31-35" group. However, the mean GPA was lowest for students who dropped a course.

One of the primary goals of the study was to develop a group of factors that could be incorporated into a model to predict student performance in diverse student populations. Consequently, the factors that were significant in the two models were combined in a model and tested against the combined data for the two schools. The results of the analysis are reported in Table 18. The "Age 31-35" factor was not significant. All other factors except "Age 25-30" and "Working 6-10" were significant at the .01 level and these factors were significant at the .05 level.

Table 17
MANOVA - AA

Parameter	Value	Exact F	DF #	DF Den	Prob. >F
Whole Model	0.7973348	3.5251	10	294	0.0002
Intercept	0.3487808	137.2341	2	147	<.0001
Working 6-10	0.9298169	5.5478	2	147	0.0048
Working 36-40	0.9887527	0.8361	2	147	0.4355
Age 31 Plus	0.9560456	3.3792	2	147	0.0367
Dropped a Class	0.9142598	6.8929	2	147	0.0014
Keep Job Graduate	0.9900388	0.7395	2	147	0.4791

Table 18
MANOVA Combined

Parameter	Format	Exact F	DF #	DF Den	Prob. >F
Whole Model	0.7690229	6.1394	16	700	<.0001
Intercept	0.8055193	42.2512	2	350	<.0001
Hours Completed	0.9689995	5.5986	2	350	0.0040
Single Parent	0.9611181	7.0796	2	350	0.0010
Age 17-21	0.919593	15.3016	2	350	<.0001
Age 22-24	0.916611	15.9207	2	350	<.0001
Age 25-30	0.9804949	3.4813	2	350	0.0318
Age 31 Plus	0.9993831	0.1080	2	350	0.8976
Worked 6-10	0.9810756	3.3757	2	350	0.0353
Dropped a Course	0.9624718	6.8235	2	350	0.0012

INTERPRETATIONS, IMPLICATIONS AND RECOMMENDATION

The two populations in this study are significantly different. Given their glaring difference, the groups represented by the two populations will be present to one extent or another in every accounting class. The significant factors found in these two

populations may apply to students similarly situated at other colleges today. Careful analysis indicates that factors unique to each group are, in fact, related and their absence in the other group can be explained by that relationship.

The first two related factors in the final model are "Hours Completed" and "Dropping a Course." Why weren't these factors initially found in both groups? The basic differences in the two groups may answer this question. The mean hours taken at AA is significantly higher than at WH. The impact of higher course loads is supported by lower mean semester GPA of the AA students. Why do students at AA take such large loads in comparison to the WH students and why do they attempt even more hours at AA only to drop a course?

To some extent the AA student's approach may be forced on students by their economic conditions. For low-income students, the federal government provides grants. These grants normally require the students to take a minimum number of hours and to complete their degrees in a limited time. The combination of these requires the students on financial aid to take a higher course load in order to finish their education in a limited time frame.

Another complicating factor is the decision to go to school away from home. Only eighteen percent of the AA students are living at home compared to fifty six percent of the WH students. There is no question that the decision to attend school away from home increases the cost of the education. This increased cost means increased pressure to complete school in a shorter period of time. The increased cost of living away from home impacts on how the student approaches the summer term. The student attending school away from home normally works full-time in the summer in order to earn the additional funds needed to complete school. In contrast, the student living at home can continue working the same part-time job and taking additional courses. This approach allows the student at home an even greater advantage by reducing the number of course that must be completed during the fall and spring semesters.

Another factor that might encourage students to live away from home is a scholarship. Most scholarships are specific to a particular school and not only have a minimum course load but also are limited in terms of years. Forty-six percent of the AA students were receiving a scholarship. The heavy reliance by AA students on some sort of financial aid means that the AA student is more likely to be under greater pressure to take larger loads. Another factor that may be contributing to the pressure on AA students to take higher loads may be the number of hours required to graduate at each institution. The AA student on scholarship or financial aid

must complete 130 hours during the time of their award as compared with only 120 hours for the WH students.

The difference in the number of hours alone required to graduate is not significant but when coupled with the pressures caused by financial aid and living away from home may create a situation that requires students to take larger than advisable course loads. In fact, this pressure may contribute to the second factor impacting on the performance of the student, dropping a course. Why was this factor initially only significant among the AA students? One explanation might be the low number of students at WH who dropped a course. The other explanation, financial aid and not living away from home, is more likely to account for the absence of this factor among the WH students.

Why are the first two factors significant while working more hours is not significant? The nature of the two populations provides part of the explanation. The existence of financial aid may allow the AA student to work fewer hours. This is demonstrated by the statistical data that showed 54% of AA students working less than twenty hours as compared to the 37% of the WH students. Since the AA students are working less, one might expect this would offset the higher course load. However, this is not the case. The explanation lies in the difference between three hours of class as compared to three hours of work. The decision to take another class does not add just three more hours to the student's total commitment. In order to perform well in a course, the student must prepare outside the classroom. Even if the old rule of thumb, three hours of work outside the classroom for each hour, does not apply today, the student must devote additional time.

If the rule is only one hour outside class for each hour in class, then taking three more hours adds six hours to the student's course load. This may not seem significant unless it is viewed in conjunction with the student's situation. If the student is working 20 hours a week and taking 11 hours, the total load will be 42 hours per week. Adding three more hours of classes makes the time commitment 48 hours per week. Consider the average AA student who takes 15 hours a week and is working 20 hours. Assuming one hour outside for each hour in class, the student's total commitment becomes 50 hours per week.

If the rule is 1.5 hours outside for every hour inside the burden is even greater. The student

working 20 hours a week and taking 11 hours has a total load of 47.5 hours as compared with 52 for the student working 17 hours and taking 14 hours. If the rule is two hours outside for every hour

in class, the load becomes 53 for the WH student and 59 for the AA student. Thus, WH student could work considerably more hours per week and still have more time to devote to their courses.

The impact of higher course loads may be even greater when the student enrolls in homework intensive classes like accounting and statistics. In addition to normal burden of a higher course load, the student taking a greater load each semester is more likely to enroll in two homework intensive courses during the same semester. Thus, the decision to take an additional course could significantly impact the performance of the student whose added course is more homework intensive.

The multiplier impact of course loads might also explain why the study found that students who drop a course are more likely to lower their overall performance. During the beginning of the semester, the student's load is higher. For the student working 20 hours per week and taking 18 hours to begin the semester, the time commitment of the additional three hours ranges from 6 to 12 hours per week. This additional time could have been devoted to other courses. If the student only devotes 6 hours per week to the dropped course over a period of 6 weeks, the total time is 36 hours. Had the 36 hours consumed by the dropped course been devoted to the course that the students retain, the grades in these courses would have been higher. Consequently, by the time a student decides to drop a course, the damage to the student's performance in the other courses may be too great to overcome.

Finally, dropping a course may have another disconcerting complication when the student is on financial aid and/or living away from home. Having a limited budget or time, the student feels pressure to take an even greater load the next semester. The student again registers for more hours with the consequence that the student ends up dropping a course or at a minimum lowering their performance in all their courses.

Even though the significant age groups are different for both populations, careful examination indicates that the impact of a student's age is consistent in both groups. The age categories at WH are negatively related to performance. The three younger groups GPA's at WH are lower than the over 30 age group. The opposite is true for AA. The over 30 group at AA is positively related to GPA. The older groups GPA is significantly higher than the other three groups. The consistent performance for age is, in fact, verified in the combined model by the lack of significance indicated by the high probability of the factor. The results seem to be clear that maturity or experience as represented by age has a positive impact on academic performance.

The only significant factor in this study that is specific to one group and cannot be explained by the differences in the two groups is that of a single parent. The percentage of single parents was identical for both groups but the factor was significant in the AA group only. The lack of the significance of this factor may again be related to the difference created by the higher course load taken by the AA students. Given that a single parent has the additional load of caring for a family, the addition of that burden to the higher course load may create the negative relationship found in the AA model. Often, the parent is on financial aid and must carry a minimum load. The even greater pressure results in a lower mean GPA for students who are single parents as compared to single and married students. Providing childcare facilities and counseling may help this group. However, the conditions on financial aid and the level of support it provides might be examined in light of the results of this study.

Implications for States with the 150 Hour Requirement

States with 150-hour requirements or those states considering implementing the 150-hour requirement might consider the impact the factors in this study may have on minority representation within the profession. Currently, the number of minorities and women in the profession is critically low. A large number of minorities rely on financial aid to help with schooling. Increasing the number of hours required for entry into the profession without providing additional support could effectively limit the minorities' ability to compete in the profession. If additional hours of education are required without additional support, the student will feel pressured to take additional hours each semester. Taking the additional hours could result in a decline in the student's GPA. Given the profession's emphasis on GPA in recruiting, minorities who might have obtained an acceptable GPA could be eliminated by the pressure to take higher loads.

Besides the impact on GPA, the pressure to take additional hours can seriously impact on the level of overall attainment. The accounting student taking two junior level accounting courses is more likely to be impacted by the addition of more hours. Consequently, the actual level of accounting expertise obtained by students taking higher loads may be impaired. The final result being, inadequate preparation for professional exams such as the CPA exam. The impact on the profession created by inadequate

preparation can go beyond minority representation, as the negative impact of higher course loads impacts all individuals studying to become CPAs, CMAs, CIAs, etc.

RECOMMENDATIONS

Students need to be better advised about managing their schedule. Advisors need to counsel students against taking extra course loads. Students should be encouraged to make any decision to drop a course within the first week or two of class. The advisor can also play another role by encouraging a student attending school away from home to take courses at home during the summer. By taking six hours at home during each of three summers, the student can reduce the number of hours that must be taken during a regular semester. The University can contribute to helping the student by reducing the number of hours required of students to graduate. Lower total hours when coupled with better advising could reduce the number of hours a student must take to complete college. While an education is important, the limited data from this study indicates that requiring the student to take greater course load to complete a degree negatively impacts on his/her ability to assimilate the knowledge as measured by GPA. Universities might also consider moving the drop day to earlier in the semester. This would force students to make the decision to drop a course sooner limiting the negative impact of the time devoted to the dropped course.

States might also examine how they fund universities and how they structure financial aid. The practice of linking state funding to student credit hours encourages universities to stretch scholarship dollars to recruit more students. Another practice common to AA might be reviewed in light of these findings. Allowing universities to grant minimal scholarships, whose main function is to waive out-of-state tuition, serves to encourage students to attend school away from home. The minimal amount of the scholarship puts additional financial pressures on the student. This practice forces the economically disadvantaged students to take higher loads and to work more hours during the summer to support their education.

High school counselors can also play a part in solving the problems. Students and their parents need to be given a better view of the alternatives. Students should be given a complete picture of the costs associated with choosing to accept a scholarship at an out of state institution or using a grant to attend an out of state institution. While the tuition costs may be lower, the other costs associated with the experience could result in creating an economic

and academic nightmare for the student. The student needs to understand the potential impact of large course loads on their academic performance and the impact on their career plans of such decisions.

The accounting profession needs to reconsider how it achieves the benefits anticipated by the enactment of the 150-hour requirement. This paper does not seek to make any judgments concerning the perceived benefits of the requirement. This decision is left to the profession. The paper does however, suggest that if the profession is convinced of the programs merits it should recognize the increased cost and burden of the requirement on students. Implementation of the requirement means that a student taking 12 hours a semester must attend school for about 13 semesters. For students in universities requiring 120 hours, this means three additional semesters of work not supported by traditional scholarships and many forms of financial aid. For economically disadvantaged students seeking to enter the profession, this could mean postponing graduation and/or enrolling in higher course loads.

If the findings of this study are correct, the resulting higher course loads will lower student performance and, even more devastating, could result in a diminished knowledge base. The result will be fewer minorities entering the profession and those who do may find it more difficult to achieve the profession certifications requisite to success. If the profession believes that the 150 hour requirement is necessary, it should increase the amount of resources available to all students who undertake the burden of completing an extra three semesters of education. In fact, the profession might even consider providing resources to help economically disadvantage students with high GPA's manage their education beginning in the junior year.

In general, students in accounting principles course who have demographics similar to those of the two groups studied, provide a challenge for the college professor. The student who is taking over 12 hours and working over 20 hours per week is more likely than not to be over committed. After first discussing the issue with students, the students need to receive prompt and clear feed back on their status. Students who are not performing should be encouraged to drop the course early to avoid the negative impacts on their other courses.

In addition to counseling their students, professors might consider new approaches to help motivate students and/or force students to devote more time to their studies. One approach being

used to increase student involvement is based on teams. Students are assigned to teams selected by the professor. The homework grade for each student is based on the team's homework grade. The better students are encouraged to tutor their group members and assignments are used to create more interactions among members of the group. The resulting increased participation serves to increase student interest and effort in the class.

CONCLUSIONS

The differences between the two groups should not overshadow the implications of the factors presented in this study. The limited population may limit the statistical strength of this study. However, the factors found in this study are logically consistent and should not be discounted because of the diverse populations from which the sample was drawn. Students similar to both groups are present in accounting classes nationwide.

Parents, students, and Universities need to consider the factors identified by this study in counseling students on their schedules, in establishing graduation requirements, and in working with students within the classroom setting. The students course load not the number of hours working was found significant. The practice of registering for more hours and dropping a course was another major factor. The student whose course load cannot be lowered by dropping a course and doing so at the beginning of the semester, needs to be encouraged to devote more time to the course by counseling and/or other means.

Finally, if one of the major goals of accounting profession is to increase minority participation, the profession needs to examine how the 150-hour requirement may be frustrating this goal. If the increased education is necessary, then more efforts must be made to provide the means where the economically disadvantaged can effectively participate in the educational process.

REFERENCES

Allen, W. 1992. The Color of Success: African-American College Student Outcomes at Predominantly White and Historically Black Public Colleges and Universities. *Harvard Educational Review* (Spring): 26-44.

Beckenstein, L. 1992. Success Rate of Transfer Students Enrolled in a Program for the Underprepared at a Senior College. *Journal of College Student Development* (January): 56-60.

Eskew, R. and R. Farley 1988. Some Determinants of Student Performance in the First Year College Level Financial Accounting Course. *The Accounting Review*, (January):137-147.

Gigliotti, R., and S. Secrest 1988. Academic Success Expectancy: The Interplay of Gender, Situation, and Meaning. *Research in Higher Education* (Spring): 281-297.

Harris, K. M. 1993. *College Technology, Business Classes and Campus Life: The Challenge for Rural Nontraditional Students.* Unpublished doctoral dissertation, Oklahoma State University.

Hemby, K. V. 1995. *Effects of Age, Learner Profile, and Keyboarding Skill on Self-Reported Computer Anxiety Among Traditional versus Nontraditional College Students*. Unpublished doctoral dissertation, The University of Southern Mississippi.

Rohde, F. and M. Kavanagh 1996. Performance in First Year University Accounting: Quantifying the Advantage of Secondary School. *Accounting and Finance*, (November): 275-86.

Soltz, D. The Achievements of Community College Students with GED Certificates: A Longitudinal Perspective. *Community College Journal of Research and Practice*

Tan, D. 1992. Grades as Predictors of College and Career Success: The Case of a Nontraditional Health-Related Educational Institution. *Journal of College Admission* (Summer): 12-15.

William, J.R., M.G. Tiller, H.C. Herring, III, and J.H. Scheiner 1988. A Framework for the Development of Accounting Education Research. *Accounting Education Series* 9 (Sarasota: American Accounting Association).

Appendix A
Study Hypothesis

The following hypotheses are related to the factors included in the initial model for the two groups studied.

Hypotheses 1: Membership in a group based on the number of hours completed during a semester will be significant factor in predicting a student's performance.

Hypotheses 2: Membership in a group based on the person's age will be significant factor in predicting a student's performance.

Hypotheses 3: Membership in a group based on the person's race will be significant factor in predicting a student's performance.

Hypotheses 4: Membership in a group based on the person's marital status will be significant factor in predicting a student's performance.

Hypotheses 5: Membership in a group based on the person's major will be significant factor in predicting a student's performance.

Hypotheses 6: Membership in a group based on the number of hours a student is working will be significant factor in predicting a student's performance.

Hypotheses 7: Membership in a group based on the number of hours a student participates in activities will be significant factor in predicting a student's performance.

Hypotheses 8: The maturity of a student as measured by the person's standing is positively correlated with the student's performance.

Hypotheses 9: Where a student resides, at home, in an apartment, or on campus will be significant factor in predicting a student's performance.

Hypotheses 10: A student's GPA will be lower as a consequence of the person's decision to register for an additional course and then drop a course during the semester.

Hypotheses 11: Membership in a group based on whether or not the student plans to keep an existing job, go to graduate school, or if their job is related to their major will be a significant factor in predicting a student's performance.

Appendix B
Survey Form

This survey is part of a research project being supported by the Accounting Department of this University and a Research Grant from the American Institute of Certified Public Accountants (AICPA). The purpose of this survey is to determine the impact of financial needs and hours of work on the academic performance of students.

By signing the survey, you authorize the faculty member conducting this research to obtain your semester and cumulative GPA from the University records. Without your support and your consent granted by your signature, the information you provide below can not be used in evaluating the needs of students seeking a college education. Please help, your response could help provide additional aid and support for college students.

All responses will be treated confidentially and results will be treated as a group and not reported individually. Names will not be used in the final results.

Signature _____

Name:_____ID: _ _ _ _ _ _ _ _ _ _ _
Last First Middle

Marital Status: Single___ Single Parent___ Married___

Race: Black___ White___ Other___

Age: 17-21 yrs.___ 22-24 yrs.___ 25-30 yrs.___ 31-35 yrs.___ 36-40 yrs.___ 41+ yrs.___

1. At the end of this semester I will have completed enough hours to be classified as a: ____Freshman ___ Sophomore___ Junior___ Senior___ Special Non-degree___

2. I registered for ___ hours this semester and will complete ___ hours.

3. I am currently receiving the following types of financial aid towards my college education (You may check more than one) Grants___ Scholarship___ Loans___ Tuition Reimbursement___ Other (Specify)_____

4. As a condition of my financial aid I am required to work on campus: ___ Not applicable to me ___1-5 hrs./week ___6-10 hrs./week ___11-15 hrs./week ___16-20 hrs./week ___21+ hrs./week.

5. I am currently employed on or off campus (not including the hours in 4 above): ___ Not employed ___1-5 hrs./week ___6-10 hrs./week ___11-15 hrs./week ___16-20 hrs./week ___21 to 25 hrs./week

___26-30 hrs./week___31-35 hrs./week ___36-40 hrs./week ___41+ hrs./week.

6. I need to work in order to pay for my tuition: Yes___ No___

7. I need to work in order to pay for my books: Yes___ No___

8. I need to work in order to pay for my room & board: Yes___ No___

9. I need to work to pay for clothes & other personal items: Yes___ No___

10. I need to work in order to pay for my car and other debts: Yes___ No___

11. My current job is: ___related to my major area of study ___not related to my major area of study.

12. I plan to: ___keep my job upon graduation ___find a job in my major area __go on to graduate school.

13. I plan to major in: ___Accounting ___Finance ___Management and Administration ___Marketing ___Marketing/Advertising ___Personnel and Industrial Relations __ Undecided Other(Specify):_____

14. I am involved in the following: Check All that Apply
__ Campus Organizations __ Community Organizations __College Athletics__ Charitable Organizations __ Other Activities _____

15. The number of hours I spend participating in the activities checked in question 14 amounts to: ___ No Activities
___1-5 hrs./week ___6-10 hrs./week ___11-15 hrs./week ___16-20 hrs./week ___21 to 25 hrs./week
___26-30 hrs./week ___31-35 hrs./week ___36-40 hrs./week ___41+ hrs./week.

16. The following members of my family have attended or are attending college (you may check more than one): ___father ___mother ___sisters ___brothers ___none

17. I currently live: ___At home ___On Campus ___Share an Apartment ___Other (Please explain) _____
_____

THANK YOU!!!

Appendix C
Table 1
Full Model: WH

Parameter	Value	F	DF #	DF Den	Prob. >F
Whole Model	0.4464997	1.5707	98	310	**0.0020**
Intercept	0.9993479	0.0506	2	155	0.9507
Hours Completed	0.9387629	5.0555	2	155	**0.0075**
African American	0.9951497	0.3777	2	155	0.6860
White	0.9971727	0.2197	2	155	0.8030
Other Race	0.994428	0.4343	2	155	0.6485
Single Parent	0.9475918	4.2863	2	155	**0.0154**
Single	0.9906974	0.7277	2	155	0.4847
Hours Working 0-5	0.9936122	0.4982	2	155	0.6086
Hours Working 6-10	0.9974439	0.1986	2	155	0.8201
Hours Working 11-15	0.9921749	0.6112	2	155	0.5440
Hours Working 16-20	0.9955395	0.3472	2	155	0.7072
Hours Working 21-25	0.9949421	0.3940	2	155	0.6750
Hours Working 26-30	0.9899635	0.7857	2	155	0.4576
Hours Working 31-35	0.9970086	0.2325	2	155	0.7928
Hours Working 36-40	0.9928285	0.5598	2	155	0.5725
Hours Working 41-45	0.9902361	0.7642	2	155	0.4675
Age 17-21	0.9443175	4.5699	2	155	**0.0118**
Age 22-24	0.9493186	4.1375	2	155	**0.0178**
Age 25-30	0.9517434	3.9295	2	155	**0.0216**
Age 31-35	0.9878844	0.9443	2	154	0.3912
Freshman	0.9978659	0.1657	2	155	0.8474
Sophomore	0.9885248	0.8996	2	155	0.4088
Junior	0.9964496	0.2761	2	155	0.7591
Senior	0.996487	0.2732	2	155	0.7613
Work Related Degree	0.9916195	0.6550	2	155	0.5209
Work not Related	0.983308	1.3156	2	155	0.2713
Not Working	0.9863567	1.0720	2	155	0.3449
Activity Hrs. 0	0.9929379	0.5512	2	155	0.5774
Activity Hrs. 1-5	0.9945291	0.4263	2	155	0.6537
Activity Hrs. 6-10	0.9973158	0.2086	2	155	0.8120
Activity Hrs. 11-15	0.9971673	0.2202	2	155	0.8026
Activity Hrs. 16-20	0.9975945	0.1869	2	155	0.8297
Activity Hrs. 26-30	0.9909461	0.7081	2	155	0.4942
Activity Hrs. 36-40	0.993392	0.5155	2	155	0.5982
Activity Hrs. >40	0.9995158	0.0375	2	155	0.9632
Accounting	0.990281	0.7606	2	155	0.4691
Finance	0.9844302	1.2257	2	155	0.2964
Management	0.9773762	1.7939	2	155	0.1697
Marketing	0.9854163	1.1470	2	155	0.3203
Undecided	0.9704109	2.3631	2	155	**0.0975**
Other Major	0.9917506	0.6447	2	155	0.5262
No Major Listed	0.9933433	0.5194	2	155	0.5959
Reside at Home	0.9883841	0.9108	2	155	0.4043
Share Apartment	0.996748	0.2529	2	155	0.7769
Reside on Campus	0.9991869	0.0631	2	155	0.9389
Other or Not Marked	0.9978354	0.1681	2	155	0.8454
Parents College	0.9980178	0.1539	2	155	0.8575
Siblings in College	0.9969263	0.2389	2	155	0.7877
No Family Attended	0.9990902	0.0706	2	155	0.9319
Dropped Class	0.97793	1.7490	2	155	0.1774
Keep Job Graduate	0.9969895	0.2340	2	155	0.7916

Appendix C
Table 2
Full Model: AA

Parameter	Value	F	DF #	DF Den	Prob. >F
Whole Model	0.2467689	2.0062	102	202	**<.0001**
Intercept	0.9951968	0.2437	2	101	0.7842
Hours Completed	0.9702166	1.5502	2	101	0.2172
African American	0.9780796	1.1318	2	101	0.3265
White	0.9663491	1.7585	2	101	0.1775
Single	0.9570481	2.2440	2	100	0.1113
Single Parent	0.9888529	0.5693	2	101	0.5677
Hours Working 0-5	0.9767983	1.1995	2	101	0.3056
Hours Working 6-10	0.933637	3.5895	2	101	**0.0312**
Hours Working 11-15	0.9909864	0.4593	2	101	0.6330
Hours Working 16-20	0.9994373	0.0284	2	101	0.9720
Hours Working 21-25	0.9855749	0.7391	2	101	0.4801
Hours Working 26-30	0.991111	0.4529	2	101	0.6371
Hours Working 31-35	0.9926577	0.3735	2	101	0.6892
Hours Working 36-40	0.9303051	3.7833	2	101	**0.0260**
Hours Working 41-45	0.9969614	0.1539	2	101	0.8575
Hours Working >46	0.9805281	1.0029	2	101	0.3705
Age 17-21	0.9728427	1.4097	2	101	0.2490
Age 22-24	0.9701662	1.5529	2	101	0.2166
Age 25-30	0.9813141	0.9616	2	101	0.3857
Age 31-35	0.9049686	5.3030	2	101	**0.0065**
Freshman	0.9935739	0.3266	2	101	0.7221
Sophomore	0.9853757	0.7495	2	101	0.4752
Junior	0.985584	0.7387	2	101	0.4803
Senior	0.9908243	0.4677	2	101	0.6278
Work Related Degree	0.9770403	1.1867	2	101	0.3094
Work not Related	0.974525	1.3201	2	101	0.2717
Not Working	0.9847472	0.7822	2	101	0.4602
Activity Hrs. 0	0.9687043	1.6315	2	101	0.2008
Activity Hrs. 1-5	0.9622349	1.9820	2	101	0.1431
Activity Hrs. 6-10	0.9989846	0.0513	2	101	0.9500
Activity Hrs. 11-15	0.9926269	0.3751	2	101	0.6882
Activity Hrs. 16-20	0.9810687	0.9745	2	101	0.3809
Activity Hrs. 21-25	0.977555	1.1595	2	101	0.3178
Activity Hrs. 26-30	0.9955199	0.2273	2	101	0.7971
Activity Hrs. >40	0.9672506	1.7098	2	101	0.1861
Accounting	0.9973589	0.1337	2	101	0.8750
Finance	0.995627	0.2218	2	101	0.8015
Management	0.989571	0.5322	2	101	0.5889
Marketing	0.9912441	0.4461	2	101	0.6414
MIS	0.963319	1.9229	2	101	0.1515
Undecided	0.9999787	0.0011	2	101	0.9989
Other Major	0.9946816	0.2700	2	101	0.7639
No Major Listed	0.9940533	0.3021	2	101	0.7399
Reside at Home	0.9666299	1.7434	2	101	0.1802
Share Apartment	0.9955651	0.2250	2	101	0.7989
Reside on Campus	0.9961109	0.1972	2	101	0.8214
Other or Not Marked	0.9801849	1.0209	2	101	0.3640
Parents College	0.9952158	0.2428	2	101	0.7849

Siblings in College	0.9953243	0.2372	2	101	0.7892
No Family Attended	0.9940042	0.3046	2	101	0.7381
Dropped Class	0.9535037	2.4626	2	101	**0.0903**
Keep Job Graduate	0.9113978	4.9094	2	101	**0.0092**