

Can We Improve Student Performance in the Introductory Business Finance Course?

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Abstract

Successful completion of the introductory business finance course is a requirement in most undergraduate business programs. Prior research suggests that it is possible to develop a predictive model of academic performance in this course so that students likely to experience difficulty in business finance can be identified before the course begins. The purpose of this study is to evaluate several activities that might be beneficial to students identified as likely to have difficulty in the course. The results of this study suggest that extraordinary efforts by the instructor to improve the performance of poor performing students produce marginal results.

I. Introduction

This paper is a continuation of research reported by Howard and Redmon (2006) on the determinants of academic performance in the introductory business finance course. There was interest at the university where the research was performed with improving the university's graduation rate. It was noted that 1) earning a grade of C or higher in the introductory business finance course was a graduation requirement for most of the students in the School of Business and Economics; 2) there was a high degree of nonsuccess in the course; and 3) some students did not graduate because they did not successfully complete the course. Thus, improving performance in the business finance course would lead to an increase in the university's graduation rate. The introductory business finance course had been identified as one of the courses at the university where the nonsuccess rate was 30% or higher, where nonsuccess was identified as earning a grade of F (failure), I (incomplete), or W (withdrawal).

In developing models of performance in business courses, researchers have found a variety of factors that are statistically related to student success in the courses examined: experience with personal computers, cumulative grade point average, grades in accounting, economics and mathematics courses, hours of employment, SAT and ACT scores, and transfer status. The Howard and Redmon (2006) study extended the literature in a very significant way: it developed a predictive model of academic performance in the business finance course, and then using that model a determination was made of which students were likely to experience difficulty in the course. We are aware of no other study where the models developed were then used to predict student performance (in another group of students that were not used to develop the model) so that students likely to experience difficulty in the course could be identified.

It is not sufficient to identify those students likely to perform poorly in the course and simply report those findings in a research report; there should be some remediation efforts extended by the instructor so that student performance might be improved. The purpose of this study is to extend the literature even further by evaluating extraordinary efforts by the instructor

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to assist those students identified as likely to experience difficulty in the business finance course. The model developed by Howard and Redmon (2006) was applied to a new group of business finance students, final grades were predicted for all students in the course, and special attention was extended by the instructor to assist those students who were predicted to receive a grade of D or F in the course.

II. Literature Review

Several researchers have evaluated the factors that determine academic performance in the introductory business finance course. Ely and Hittle (1990) found that experience with personal computers, the student's major, and success in the finance prerequisite courses were significantly related to success in the finance course. The years of high school math, the level of high school math, the grade in college calculus, and the number of hours of work were also tested but found to be insignificant. On the other hand, Didia and Hasnet (1998) found that grades in mathematics were significantly related to performance in the introductory business finance course. Age, cumulative grade point average, and grades in beginning accounting and economics were also positively related to course performance. Chan, Shum, and Wright (1997) found that class attendance was marginally related to success in the finance course and that a mandatory attendance policy did not improve performance.

In an analysis of performance in an introductory marketing course, Borde (1998) found a positive correlation between GPA and course performance, and a negative relationship between hours of employment and course performance. Students who transferred from a community college did not perform as well in the marketing course as did nontransfer students.

Performance in cost accounting was evaluated by Kirk and Spector (2006). They found that grade point average and performance in managerial accounting and in the first statistics course were positively related to performance in cost accounting. They also looked at sequencing of courses and found that students performed better in cost accounting if they had completed Intermediate Accounting I, and that accounting students performed better in the introductory business finance course if they had completed cost accounting.

Performance in the introductory economics course was evaluated by Okpala, Okpala, and Ellis (2000) and by Ballard and Johnson (2004). Okpala, Okpala, and Ellis found that students who possessed a high degree of confidence in their school performance and who had well-defined study strategies performed better in the economics course; grade point average and SAT scores were also positively related to course performance. Ballard and Johnson found that ACT scores and whether or not the student took calculus were positively related to success in economics.

Another impact on the grades of college students was employment. One of the studies in this area was by Jeffrey DeSimone (2008). It was found that full time employment in fact reduced the grades of the student. The effects were stable across time, gender, class, and age. However, the effects did vary by health status, maternal schooling, religious background and especially race/ethnicity. A second study by Arano and Parker (2008) also looked at the effects of student work on academic performance. The results of the study were that student employment did hurt the grades of freshmen students. For upperclassmen, the negative effect on

grades only showed up after working longer hours. The negative effect on grades was weakest among juniors, followed by seniors and sophomores.

The study by Howard and Redmon (2006) forms the basis for this current study. The details of our study are shown below.

III. Data and Methodology

We conducted this study at a mid-sized state-supported university located in North Carolina. One of the schools at the university is the School of Business and Economics, which offers majors in accounting, business education, finance, management, management information systems, marketing, business economics, general economics, and transportation. The school, which has an enrollment of approximately 1500 students, is made up of four departments: accounting, business administration, business education, and economics/transportation. The accounting and business programs of the school are accredited by the AACSB International – the Association to Advance Collegiate Schools of Business; this is the premier accrediting agency for academic programs in business and accounting.

The university attracts students ranging widely in age, academic ability, economic status, and motivation. The business finance course is required for all majors in the School of Business and Economics except students majoring in general economics. Students majoring in accounting, finance, and management are required to earn a grade of C or higher in the course. Virtually all of the students taking the course are business students; rarely will there be a student with another major taking the course as an elective.

Our initial data consist of students who took the introductory business finance course in their curriculum and graduated in December 2003, May 2004, or December 2004. There were 213 students who were graduated during that period. After correcting for missing data, the sample size was reduced to 143. Much of the missing data was due to transfer students who took some of the courses used as explanatory variables in this study at other institutions. As noted, some studies have found transfer status to be significantly related to course performance. There is also a perception that community college transfers are not adequately prepared for university level courses, and thus do not perform as well as non-transfer students (Didia and Hasnat, 1998). Thus, this dichotomous variable was tested separately using all 213 students.

Regression analysis is the methodology used in this study. This statistical procedure is consistent with the methodology used in the studies reviewed above. Simple and multiple linear regressions were used to determine the relationship between the dependent variable, grade earned in the introductory business finance course and the explanatory variables. Five separate regressions were used in this study, with different explanatory variables, to avoid the problem of multicollinearity. A list of explanatory variables is given in Table I.

The first set of regressions included gender, high school grade point average, the verbal SAT score, and the math SAT score as explanatory variables. Using the SAT score is consistent with the review of studies reported by Gehring (2001) in which SAT scores were used to predict overall college performance. It is also consistent with Okpala, Okpala, and Ellis (2000) and Ballard and Johnson (2004) who used SAT scores and ACT scores, respectively, in predicting

performance in introductory economics courses. The present study converted ACT scores into SAT equivalents using a standard transformation formula. The dichotomous variable gender was coded 1 for males and 0 for females. Gender was also included in two of the studies reviewed above. There is some evidence that females might outperform their male colleagues: (1) a report recently released by the U.S. Department of Education indicated that there has been a steady decline in the academic performance of boys in elementary and high school (Freeman, 2004); on several assessments males performed lower than females; (2) the female graduation rate was higher than the male graduation rate in fourteen of the sixteen universities in the UNC system (Education Trust 2005); and (3) the authors of this study have noted that over the past several years students inducted into Beta Gamma Sigma, the business honorary society, have been overwhelmingly female.

The second set of regressions included the student's grade point average prior to taking the business finance course and the number of semester hours attempted before taking the course. The hypothesis is that a student's grade point average before taking business finance would be a good predictor of their performance in the course. If a student has done well in other courses, it would be relevant to determine if their earlier performance is an indication of future performance. Further, it is hypothesized that students who attempted a large number of hours before taking the course may be at risk of performing poorly in that class. Students in the School of Business and Economics who follow their designated curriculums will take business finance during their junior year. Most students who take the course in the first semester of the junior year will have completed between 66 and 72 hours; those who take the course in the second semester will have completed between 81 and 88 hours. A substantially larger number of attempted hours is an indication of courses repeated because of withdrawals or low grades in those repeated courses.

The third set of regressions included the average grade in the two required English courses and the average grade in college algebra and calculus. These courses are taken in the student's freshman year. Using math courses to predict future performance in quantitatively oriented courses (such as business finance) is consistent with the work of Ely and Hittle (1990) and Ballard and Johnson (2004). It does seem logical that performance in math courses would be an indicator of performance in business finance. Using the English variable as an explanatory variable is consistent with the fact that writing skills are important for performing well on essay exams and preparing reports in the business finance course. Although business finance is a heavily quantitative course, there are qualitative concepts that are related to skills learned in English courses.

The fourth set of regressions included the grade earned in business communications (basically a writing course), the average grade in the two required statistics courses, the average grade in micro and macro economics, and the average grade in the two required accounting courses. These courses are taken in the sophomore year. The rationale for using the business communications course as a predictor of performance in business finance is similar to that indicated above for English courses. Although none of the studies mentioned earlier used statistics as a predictor, the two statistics courses are quantitative courses and considering the earlier hypotheses, should be analyzed as a predictor of performance in the business finance course. The justification for the economics variable as an explanatory variable for performance

in business finance is that finance is a subset of economics and therefore performance in economics courses may be a good predictor of a student's performance in business finance. Perhaps the most logical explanatory variable for business finance is accounting since understanding some of the material in the business finance course requires specific knowledge taught in accounting.

The fifth set of regressions tests whether transfer students perform as well as nontransfer students in business finance. This variable was also used in the Didia and Hasnat (1998) and Borde (1998) studies. Transfer status is important to study since there is some perception that transfer students underperform nontransfer students. This dichotomous variable was coded 1 for transfer students and 0 for nontransfer students.

Other studies have included explanatory variables such as number of hours working, participation in extracurricular activities, class attendance, number of hours spent studying, and experience with personal computers. We decided to use variables that are already available to advisors and instructors prior to the beginning of class, rather than these other variables that are not readily available without discussion with the students. If an advisor knows which advisees who are planning to take business finance are at risk of performing poorly, based on the known explanatory variables, the student can be offered pointed advice that may result in better performance in the courses. Similarly, if an instructor knows the background of his students and the probability of their success in his course, based on known explanatory variables, he may be in a better position to help meet their needs.

IV. Results

The variables used in the study are listed in Table I and the regression results are shown in Table II through Table VI. With the exception of Regression 5, the F-statistics indicate that the null hypothesis that the regression coefficients are jointly equal to zero can be rejected at the .01 level of significance. The overall fits, as measured by R^2 , are good for the first four sets of regressions.

In Regression 1 (see Table II), the grade earned in business finance was regressed against the gender of the student, the student's verbal and math SAT scores, and the student's high school grade point average. The student's high school grade point average was significant at the .01 level and the math SAT score was significant at the .10 level. Neither gender nor the verbal SAT score was significant in predicting performance in the business finance course. These results suggest that skills, study habits, and motivation demonstrated in high school may carry over into the college classroom.

In Regression 2 (see Table III), the grade earned in business finance was regressed against the student's grade point average before taking the business finance course and the number of hours the student attempted before taking the business finance course. Grade point average was positively related to course performance and the number of attempted hours was negatively related to course performance; both were statistically significant at the .01 level. Cumulative grade point average may reflect attitude toward learning, motivation, an environment conducive to learning, and ultimately, mastery of course content. These factors are reflected in performance in the business finance course. The negative relationship between the number of

attempted hours and performance in business finance suggests that students who have attempted a large number of hours before taking the course are at risk of performing poorly in the course; the fewer the number of hours taken before business finance, the better a student will perform.

In Regression 3 (see Table IV), the grade earned in business finance was regressed against the average grade received in the two required English courses and the average grade received in college algebra and calculus. As shown in the significance column, the math variable was statistically significant at the .01 level but the English variable was not statistically significant. It is logical that the math courses would be significant since the business finance course is heavily quantitative.

In Regression 4 (see Table V), the grade earned in business finance was regressed against the grade received in the business communications course, the average grade received in the two required statistics courses, the average grade received in the two required accounting courses, and the average grade received in the required micro and macro economics courses. The statistics and economics variables are statistically significant at the .05 level and the accounting variable is significant at the .01 level; the business communications variable was not statistically significant. It is logical that the statistics courses would be significant because the business finance course is quantitative and students who perform well in statistics would be expected to do well in business finance. Further, since finance is a subset of economics, it is logical that a student's performance in economics would be an indicator as to their performance in business finance. The strong significance of accounting is expected since some of the material taught in accounting is used directly in business finance. Students who have not mastered the relevant accounting concepts are not likely to perform well in finance. The insignificance of the business communications variable here, and the insignificance of the average grade in English courses and the verbal SAT score in previous regressions, is somewhat puzzling. It appears that students who possess good writing and reading skills are no more likely to perform well in business finance than students whose skills in these areas are weaker.

In Regression 5 (see Table VI), the grade earned in business finance was regressed against whether or not the student was a transfer student. This variable is not statistically significant, indicating that transfer students perform as well in business finance as do nontransfer students.

In summary, we found the following variables to be positively related to performance in the introductory business finance course: high school grade point average, university grade point average before taking business finance, the number of hours attempted before taking business finance, the math SAT score, and grades earned in college algebra, calculus, economics, statistics, and accounting. Not statistically significant were gender, the verbal SAT score, transfer status, and grades earned in English and business communication.

V. Testing the Model

The test of a model is whether that model can predict future results. After all, the purpose of this study is to assist teachers and advisors in identifying students who may encounter problems or difficulties when taking the introductory finance course. Therefore, it is not enough to look at the past and choose variables that explained past behavior. The model must be able to

predict future behavior reasonably well so those students who may encounter problems can be identified and helped.

To this end, the models, in this study, were tested on students in three sections of the introductory finance course for the fall semester of 2005. The number of students in the three sections was 70. However, due to missing data, in some of the models the number of students was less than 70. The coefficients from the first four regression models were applied to the student data to calculate a predicted grade for each student. The first four regression models were used because these models were statistically significant.

Table VII shows the results of the tests of the four models. The best results were obtained from regressions 1, 2, and 4, where 90% or more of the students' actual grades were either accurately predicted or were within one letter grade of the predicted grade. Overall, then, the ability of the models to predict students' grades within one grade of the actual grades was very high. Although, obviously, we would prefer that the model predict the exact grade 100 percent of the time, the results obtained in this study do provide teachers and advisors a powerful tool in identifying students who may have problems in the introductory finance course. By identifying those students who may have difficulty, both teachers and advisors can provide needed assistance prior to the student taking the introductory finance course

VI. Developing a Remediation Procedure

Since the regression models developed in this research are able to identify students likely to experience difficulty in the course, our next question is: Can we develop a procedure to assist those students in completing the course successfully? Models 1, 2, and 4 had the greatest degree of predictive accuracy; thus we decided to use them in the next phase of this study. These three models were applied to sixty-one students taking the introductory business finance course during the fall semester of 2007. Thirty of the students were registered in a class that met from 8:30 – 9:50 am on Tuesday and Thursday, and the other thirty-one students met from 1:00 – 2:20 pm on Tuesday and Thursday. The same material was covered in both sections, and the same instructor taught both classes.

Complete data were available for the calculation of predicted grades for each student on at least two of the three models. Since most of the students taking the course are required to earn a grade of C or higher in the course, we concluded that a student was at risk of poor performance in the course if any of the models predicted a grade of D or F. Using this criterion, three students were determined to be at risk of poor performance by all three models, eighteen were identified as at risk students by two of the models, and nine students were deemed to be at risk by at least one of the models. Thus, thirty students, about half of the students registered for the two classes, were predicted by at least one of the models to receive a final grade of D or an F in the course. (A grade of F was assigned to two students who registered for the course, never attended, and never withdrew; calculations for these students were not included in this study.)

It is these thirty students that are the focus of this investigation. Can we, as instructors, who know which students are likely to encounter difficulties in the course, design a set of intervention techniques that will salvage most of these students? And can the techniques be

applied in an unobtrusive manner so that the at risk students are not identified, either publicly or privately?

Our approach was to apply our intervention techniques to all of the students in each of the two classes, since a large portion of each class consisted of the targeted students. In one-on-one conversations with at risk students outside of class, advice was discreetly provided, but students were not informed of their at risk status. Beyond the normal instructional procedures employed by the instructor, the following intervention techniques were utilized in an attempt to improve student performance.

The “Junior Year Drop” Stressed

Students in the School of Business and Economics take general education and lower level business courses (introduction to business, accounting, economics, and statistics) in the freshman and sophomore years; they begin their major program requirements in the junior year. The first semester junior courses normally include business finance, intermediate or managerial accounting, money and banking, management concepts, and management science. These courses are much more demanding than courses taken during the first two years. It is not uncommon for students with high grade point averages at the end of the sophomore year to earn lower grades in the junior year because of the more rigorous courses. Students were warned on the first day of the introductory business finance class that more work will be required in all of their junior year classes than had been the case in their previous courses. Students were warned that a drop in the grade point average during the junior year could be avoided if they recognized that their study habits might need to be revised.

Homework Problems Reviewed

Problems were assigned daily for homework after quantitative topics had been discussed in class. The homework problems were graded, returned to students, and discussed in class. The concepts which formed the basis for the problems were reviewed again to ensure student understanding.

Concept Sheet Provided

After an exam students have often complained that “I didn’t know what to study” or “I didn’t know what you expected.” To ensure that students knew what was expected of them, a list of key concepts was distributed to students on the first day of class. There is a “language of finance” that students must learn. The concepts and issues were discussed in class, and students were asked to be able to explain, discuss, or describe the concepts and issues, or to be able to answer questions about them in a multiple choice context. Students were informed that their examinations would be based on the quantitative topics covered in their homework assignments as well as the concepts listed on the concept sheet. Thus, there should be no question as to what they were expected to know for the examinations.

Schedule of Daily Activities Solicited

Students today are not just “students;” many are involved in a host of other activities that consume their time. So that students can see exactly how their time is being spent on all of their commitments, they were asked to complete a “Daily Schedule” form. Columns on the form consisted of days in the week (Sunday – Saturday), and hours in the day (6:00 am – 2:00 am of

the following day) were in the rows. There was particular interest by the instructor in the time allocated to study for the business finance course. Students who were carrying a full academic load and who were participating in other time-consuming activities found it difficult to schedule sufficient study hours. Completing the form helped some of them realize the need to reevaluate some of their commitments.

Feedback Provided in a Timely Manner

Students need to know where they stand in each of their courses at all times. Thus, every effort was made to provide prompt feedback to the students during the course. Homework problems submitted were graded and returned the next class period and exams were returned and reviewed two class periods after the exams were given.

Extra Classes Conducted

Review sessions were held to provide additional assistance for students in the course. Concepts discussed in class were reviewed, additional problems were worked, and questions were answered. Most of the questions raised were related to homework and other problems. Review sessions were conducted by the course instructor and by another business finance instructor.

Office Hours Extended

The dean of the School of Business and Economics requires that each faculty member post and observe ten office hours per week. These hours were printed on the course syllabus which was distributed on the first day of class. Students were informed that additional hours were being held and that they were welcome to come and discuss the course material.

Questions Encouraged

It is important that students feel comfortable asking questions in class. Students were informed on the first day of class that questions were welcome in the class, that the instructor could be stopped at any time if a question arose, and that there was no “dumb” question. If a section of a chapter was unclear, students were asked to bring that fact to the attention of the course instructor so that additional clarity could be provided. Students were asked to do their part – to read the assigned chapter before class so that they would have some knowledge of what was to be discussed in class.

Current Business News Incorporated in Class Discussions

A concerted effort was made to incorporate current business activities into the class discussions. There were numerous opportunities to relate recent business events to material discussed in class. To include active student participation in these discussions, students were encouraged to subscribe to (at the student discount rate) and read the Wall Street Journal.

Tutoring Lab for Basic Math Skills Provided

Students in the School of Business and Economics are required to complete a college algebra course and a calculus course (each with a minimum grade of C) in the freshman year. However, it was evident in the business finance course (taken in the junior year) that some students had forgotten some of the basic math skills – for example, rounding properly, finding the percent of a number, changing a fraction to a decimal or a percent. It is apparent that

extensive use of calculators has become a crutch for some students. The School of Business and Economics provides a math lab with personal instruction for those students who need to improve their basic math skills. The lab is staffed several hours each week for student review.

VII. Remediation Results

These are the techniques that were used in two sections of the introductory business finance course in an attempt to improve the performance of students who were identified as at risk of performing poorly by regression models developed earlier. Most of the techniques had been utilized previously but were intensified for these students. Our results were not encouraging. Of the thirty students who were the main focus of our attention, twenty-three either received a D, an F, or withdrew; those that withdrew had failed one or two exams prior to the deadline for dropping a course. Thus, in spite of our extra efforts, approximately 77% of the students expected to have difficulty were, in fact, not successful in the course. These students will of course have to repeat the course if they expect to earn their degrees.

Where do we go from here? What advice can we give to students that we know are expected to perform poorly? There are several factors that we can consider.

First, there are many students at the university who receive no financial support from their families and do not qualify for scholarships; they are supporting themselves with loans and employment. Most students who work full-time and attempt to carry a full academic load find it nearly impossible to perform well in all of their classes, especially during the junior year. It would be advisable for business finance instructors and advisors who find students in this situation to advise them very strongly to consider reducing their course load or the number of hours worked each week.

Secondly, some students do not know how to study – they do not know how to read a chapter in a textbook, how to take notes in class, or how to prepare for an exam. There are some techniques that successful students use, but other students have never learned them. Perhaps a study skills workshop could be offered at the beginning of each semester, and our at risk students could be encouraged to attend.

Thirdly, some students entering the introductory business finance course have a weak academic background and an inadequate foundation upon which to build. They have just barely managed to pass some of their earlier courses, and are confronted with courses that are more complex and more time-demanding. These students need strong academic advisors early in their college careers to assist them in improving their weak academic backgrounds, which may have been apparent from their high school records.

Fourthly, some students are highly motivated to learn while others seem to demonstrate a lack of a culture of academic achievement. Some students show a joy and excitement for learning; they want to excel, they ask penetrating questions, and they participate enthusiastically in classroom discussions. Other students enjoy the college life but academics are decidedly secondary. They are often tardy or absent from class, written assignments are too often prepared carelessly, and reading assignments are sometimes not completed. The following questions may be evidence of a lack of a culture of academic achievement: “Do I need to know that for the

exam?” “Can we have some extra credit?” “What do I need to get a C in this course?” “Can you reduce the amount of material covered on the exam?” “Would you tell us exactly what is going to be on the final exam?” Students who are highly engaged and who are interested in learning for the sake of learning would not generally ask questions of this type. See Jones (2007) for a discussion of creating a culture of academic achievement.

Fifthly, there is significant evidence that students' confidence and belief in themselves play a very important role in their academic success. Students with low self-esteem and little confidence in their academic ability may perform poorly in finance (and other courses) no matter what procedures the instructor attempts to implement. See Jones (2006) and Okpala, Okpala, and Ellis (2000) for a discussion of this issue.

Finally, some students may not have an appropriate combination of interest, motivation, aptitude, and prior experiences to perform well in an introductory business finance course. Some students may have a proclivity for success in electrical engineering; others may be more inclined to succeed in biology, art, accounting, or English literature. Success in business finance does require a certain level of motivation, aptitude, and background. For some students that are lacking in these areas, the best advice might be for them to consider a major that does not require a course in business finance.

VIII. Conclusion

This paper is a continuation of a study that was designed to provide helpful information for advisors and faculty members teaching the introductory business finance course. Since the federal government requires that universities participating in the federal loan program report their graduation rates, there is great concern by university administrators with improving those rates. The introductory finance course is required by most of the programs in the School of Business and Economics; thus poor performance in this course has a negative impact on the university's graduation rate. The identification of students likely to perform poorly in the course and the application of appropriate measures to help them succeed would provide a valuable service to the students and to the university.

Models were developed which quite accurately predicted students' grades in the introductory business finance course. Students whose grades were predicted to be a D or an F became the focus of this study. Techniques were developed and applied to those students in an attempt to generate a successful outcome for them. These methods were not generally successful in improving the performance of students who were predicted to perform poorly. Of the thirty students who were deemed to be at risk, twenty-three did in fact receive a grade of D or F, or they withdrew from the course.

We suggest that there are three possible conclusions that can be drawn from these results:

1. Students at risk of performing poorly might be informed discreetly of our models and their status as predicted by the models. Such knowledge might encourage students to focus better, to reduce their employment hours, and to allocate more time to preparing for their classes. There might be an emergence of the attitude that “If you tell me that there is something that I cannot do, I will show you that I can do it.”

2. There may be some students who, no matter what techniques are implemented by the instructor, are not likely to perform well in the introductory business finance course. These students should be encouraged to pursue other majors that are more suited to their aptitudes and interests.

3. There may be other techniques that were not considered in this study which might improve the performance of the at risk students. We will attempt to find them and implement them in future classes.

What is the answer to our question: Can we improve student performance in the Introductory Business Finance Course? We answer with a resounding yes; yes, but there must be a combination of student commitment to excellence and instructor willingness to reach out to his students if the performance of the at risk students is to be improved. Techniques implemented by the course instructor can be successful *only* when there is cooperation between the instructor and his students; the course instructor cannot do it alone.

TABLE I. Variables Used In The Study

GBF: Grade in business finance
 GENDER: 1=Male, 0 = Female
 HSGPA: High School Grade Point Average
 VSAT: Verbal SAT score
 MSAT: Math SAT score
 GPABBF: Cumulative GPA just before taking business finance
 HRSBBF: Number of hours attempted before enrolling in the business finance course
 AVACC: Average grade achieved in the first two accounting courses
 AVENG: Average grade achieved in the first two English courses
 AVMAT: Average grade achieved in college algebra and calculus
 BUSCOM: Grade in business communication
 AVSTA: Average grade achieved in the first two statistics courses
 AVECO: Average grade achieved in micro and macro economics
 TRANS: 1= transfer student, 0 = nontransfer student

TABLE II. Regression 1

Regression 1

$$GBF_i = b_0 + b_1GENDER + b_2HSGPA + b_3VSAT + b_4MSAT \quad (1)$$

Variable	Coefficient	t-statistic	Significance
CONSTANT	-2.270	-3.421	.001
GENDER	-.104	-.529	.598
HSGPA	.869	4.340	.000
VSAT	.001	.739	.461
MSAT	.003	1.972	.051

$R^2 = .275$
 F-Value = 13.093
 Significance = .000

TABLE III. Regression 2**Regression 2**

$$GBF_i = b_0 + b_1GPABBF + b_2HRSBBF \quad (2)$$

Variable	Coefficient	t-statistic	Significance
CONSTANT	-1.025	-1.633	.105
GPABBF	1.306	7.875	.000
HRSBBF	-.007	-2.648	.009

$$R^2 = .443$$

$$F\text{-Value} = 55.674$$

$$\text{Significance} = .000$$

TABLE IV. Regression 3**Regression 3**

$$GBF_i = b_0 + b_1AVENG + b_2AVMAT \quad (3)$$

Variable	Coefficient	t-statistic	Significance
CONSTANT	-.172	-.445	.657
AVENG	.202	1.516	.132
AVMAT	.239	5.299	.000

$$R^2 = .260$$

$$F\text{-Value} = 24.551$$

$$\text{Significance} = .000$$

TABLE V. Regression 4**Regression 4**

$$GBF_i = b_0 + b_1BUSCOM + b_2AVSTA + b_3AVACC + b_4AVECO \quad (4)$$

Variable	Coefficient	t-statistic	Significance
CONSTANT	-.384	-1.559	.121
BUSCOM	.135	1.394	.166
AVSTA	.191	2.000	.048
AVACC	.458	4.111	.000
AVECO	.250	2.133	.036

$$R^2 = .494$$

$$F\text{-Value} = 33.697$$

$$\text{Significance} = .000$$

TABLE VI. Regression 5

Regression 5

$$GBF_i = b_0 + b_1 TRANS \quad (5)$$

Variable	Coefficient	t-statistic	Significance
CONSTANT	1.867	17.562	.000
TRANS	.256	1.501	.135

R² = .001
 F-Value = .09
 Significance = .765

TABLE VII. Model Results

	Regression 1	Regression 2	Regression 4	Regression 4
Number of students with complete data	69	70	58	39
Number (and percent) of Students Whose Grades Were Predicted Accurately	25 (36%)	33 (47)	12 (21)	19 (49)
Number (and percent) of Students Whose Grades Were Within One Grade of the Predicted Grade	38 (55%)	30 (43)	31 (53)	17 (43)
Number (and percent) of Students Whose Grades Were Either Accurately Predicted or Were Within One Grade of the Predicted Grade	63 (91%)	63 (90%)	43 (74%)	36 (92)

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