THE ACCOUNTING EDUCATORS' JOURNAL
Volume XX
2010
pp. 109 - 134

Student Self Efficacy in Intermediate Accounting: A Tool to Improve Performance and Address Accounting Change

Royce D. Burnett
Southern Illinois University Carbondale

Li Xu
Southern Illinois University Carbondale

Samantha Kennedy
Southern Illinois University Carbondale

Abstract

The purpose of this study is to assess the extent self efficacy acts as a determinant of performance and how information gained about this link can be used to guide efforts to reform accounting education. To do so, we assess the predictive power of self efficacy on performance in the first Intermediate Accounting course (Intermediate I) in the presence of other demographic and environmental variables. We examine two measures of self efficacy: 1) a student's perception about his/her skills relative to the accounting cycle; and 2) a student's expectation about his/her grade in Intermediate I. Results indicate after controlling for other demographic and environmental variables, a student's perception about his/her skills does not impact first exam performance. In contrast, the perception of the capacity to earn a grade based on a summative analysis of self-awareness, knowledge and motivation is significantly associated with test performance. These confounding results indicate students' perception of ability is not always accurate while grade perception plays a significant role in performance. These results lead us to infer that efforts to reform Intermediate I could benefit from gathering more information about student perceptions (which proves to be useful in developing the curriculum of the course).

Introduction

The purpose of this study is to assess the extent self efficacy acts as a determinant of performance and how information gained about this link can be used to guide efforts to reform accounting education. This inquiry is important as evidence suggests accounting education reform continues to attract the interest of both the academic and professional communities (Albrecht and Sack 2000; Catanach et al. 2000; Donelan and Reed 1992; Russell et al. 2000; and Barsky et al. 2001). While numerous reform approaches have arisen, some critics assess these efforts as non-comprehensive (Barefield 1991; Krausz et al. 2002; Barsky et al. 2003; and Dosch et al. 2006). One reason cited to support this criticism is that the reform movement is largely based on the views of faculty members and practitioners and thus, is devoid of a student perspective (Barsky et al. 2001).

Extant literature supports the inclusion of two important student perspectives, perceptions and expectations, as critical components of an effective accounting education reform model. For example, Frederickson and Pratt (1995) assert accounting education creates value when three separate but inter-related variables are considered: student

demographics; student self-perception of knowledge (accounting skills); and student expectations (given the knowledge they acquire).

Self efficacy has been employed to investigate the role of accounting students' perceptions and expectations on performance (Stone 1996; Burnett et al. 2008; and Christensen et al. 2002). Self efficacy is a person's beliefs concerning his/her ability to successfully perform a given task (Bandura 1977; 1982; and Bandura et al. 1980). Operationally, this theory posits that the level of confidence or "comfortableness" an individual possesses relative to the capacity to execute actions is important to a specific outcome. Prior research suggests analyzing the predictive power of self efficacy could prove instrumental to implementing accounting education reform (Stone et al. 1996). Such an analysis remains an open inquiry.

This paper tries to fill this void by assessing the extent self efficacy acts as a determinant of performance and how information gained about this link can guide reform of the first Intermediate Accounting (Intermediate I) course.[1] Following previous work, we assess the effect of self efficacy in the presence of other demographic and environmental variables known to affect performance. We extend previous work by examining two measures of self efficacy: 1) a student's perception about his/her skills relative to the accounting cycle; and 2) a student's expectation about his/her grade in Intermediate I.

We argue that these two measures capture different aspects of student self efficacy. Specifically, the first measure reflects a student's self evaluation of his/her ability to do well in Intermediate I. Use of this measure is consistent with prior research that acknowledge understanding the accounting cycle is relevant to Intermediate I performance (Sanders and Willis 2009; and Zakrzwski 2003). The second measure reflects a student's understanding of how his/her ability will be evaluated. Collectively, it can be inferred this measure provides access to the mixture of self-knowledge and realistic aspirations that motivate the student to achieve a designated learning outcome (Jackling 2005; Gul and Fong 1993; Tyson 1989; Eikner and Montondon 2001; and Svanum and Bigatti 2006). Moreover, because this measure provides a reasonably summative self-reported statement about a student based on an awareness of ability, self-knowledge and course evaluation, its use as a performance differential is deemed appropriate (Wendorf 2002).

We investigate the extent to which these two measures affect performance on the first test in Intermediate I and then employ our results to comment on how reform to this course might be approached. However, unlike previous work this paper investigates a portion of self efficacy *that cannot be explained* by observable variables. We do so through the utilization of a two stage regression model. Specifically, in the first regression we capture the residuals of a predictive model of self efficacy based on the relationship between the self-reported measures and a set of traditional and observable variables. In the second regression these residuals are used to predict test performance.

Structuring our study in this manner proves informative as we capture and then assess the predictive power of student competencies or self-assessed knowledge and aspirations that heretofore were completely unobservable and known only to the student. This approach is consistent with Keef and Roush's (1997) suggestion that truly informative investigations of the predictive power of self efficacy require access to subjective internal information known only to the student. Our approach also constructs a conduit to address the observation that unless the effects of privately held intervening variables associated with accounting education are measured, attempts to analyze and comprehend the dynamics of student performance will largely emerge as unsuccessful (Bartlett et al. 1993).

We choose Intermediate I as our research setting for several reasons. First, Intermediate I is one of the most difficult albeit important courses in any accounting curriculum (Eikner and Montondon 2001; Davidson and Baldwin 2005; and Jennings 1998).

[1] Accounting education reform is a broad based topical subject focused on developing, implementing and evaluating changes in the conceptual foundations of accounting education. Components of accounting education reform models include assessment, curriculum and instruction development, the use of technology, and faculty issues. We use our empirical results obtained to address curriculum and instruction reform in Intermediate I.

Second, the course attracts a diverse set of students with varying levels of skill (Burnett et al. 2008). Because of this diversity, Intermediate I has a high drop rate and is regarded as a "weed-out" course; two outcomes that come with a cost (Shoulders and Hicks 2008; and Lawrence and Taylor 2000). Thus, identifying factors that drive student performance in Intermediate I, particularly those relating to ability and motivation, could enhance the capacity of accounting departments to develop more effective curriculums and enrollment policies while simultaneously reducing costs (Waples and Darayseh 2005).

Finally, the Intermediate I curriculum has been criticized for being overcrowded and as such, unable to meet the growing needs of students and the business community (Anderson and Boynton 1992; Jennings 1998; and Catanach et al. 2000). One topical area under review to address this issue is the re-instruction of the accounting cycle in Intermediate I (Sanders and Willis 2009). One review indicates that inclusion of the accounting cycle has merit as it reduces the anxiety students have about the course (Zakrzwski 2003). Given this benefit, some suggest any attempt to understand the value of re-teaching these skills in Intermediate I would benefit from gaining insight about the perceptions students have about these skills and the role these perceptions play in performance (Sanders and Willis 2009).

Our results show that after controlling for the demographic and environmental variables known to affect test performance, a student's perception about his/her skills relative to the accounting cycle does not impact first exam performance in Intermediate I (which tests how well students know the basic steps of the accounting cycle). In contrast, a student's perception of grade is significantly associated with test performance. Our interpretation of these results is that a student's self evaluation of his/her ability to do well in Intermediate I may not be accurate and thus, cannot be directly related to actual performance. On the contrary, a student's perception of the capacity to earn a grade (based on a summation of self-awareness, knowledge and motivation) is significantly associated with performance.

The results of this paper lead us to infer that an effective approach to accounting reform requires more information about students. Accordingly, we suggest faculty should assess students' accounting skills and expectation of grades at the beginning of an upper level accounting course. We suggest one way to achieve this objective is to focus on curriculum and instructional models. While conducted within the context of Intermediate I, our study has wide implications for institutions, instructors and students, and contributes to the accounting education literature in two ways. First, our study adds to the literature that suggests understanding student perceptions and expectations is crucial for accounting education reform (e.g. Barsky et al. 2001). We do so by using an innovative method that finds that a student's understanding of his/her accounting ability and commitment to the effort he/she plans to put forth (which is unobservable and unique to students themselves) can have a direct impact on the grade he/she receives. Second, our study contributes additional and useful insights on how to address accounting education reform via student self efficacy (e.g., Stone et al. 1996; Burnett et al. 2008; and Christensen et al. 2002).

Literature Review and Motivation

Meeting the Challenges of Accounting Education Reform

Education reform is an ongoing goal of the accounting academic and practice communities. The Bedford Committee (Accounting American Association Committee 1986) was one of the first comprehensive reports to address accounting education reform. While informative, Barefield (1991) suggests the Bedford Committee report suffers from two major flaws. First, it provides relatively little insight about how to actually plan, organize, direct and control reform. Second, there is little direction on how changes should be implemented and sustained.

Albrecht and Sack (2000) provide the latest effort directed at accounting education reform. Sponsored by the American Accounting Association, the American Institute of Certified Public Accountants, the Institute of Management Accountants, and the Big 4 CPA firms in the USA, Albreacht and Sack's (2000) report indicate accounting education is not meeting the needs of the business community and has lost ground relative to other business disciplines. To reverse this trend, the report offers that educators need to focus on the factors that drive business environment changes.

Barksy et al. (2001) take issue with the Albreacht and Sack report and contend it is limited because it is largely based on the perceptions of faculty and practitioners. As a result, the authors suggest two additional components are required for an effective approach to reform: 1) analysis should be investigated in a setting where a change is occurring; and 2) analysis is most beneficial when it includes the perceptions of students. [2]

Student Perceptions: The General Notion

Traditional student demographics such as age, gender, and prior work experience have received extensive attention as predictors of performance (Eikner and Montondon 2001; Frakes 1977; Turner et al. 1997; Christensen et al. 2002; Didia and Hasnat 1998; and Burdick and Schwartz 1982). However, one criticism of these traditional variables is that they offer little commentary as to how they can be used to evaluate accounting education (Rebele et al. 1998). Moreover, moving beyond the use of traditional demographic variables is thought of as a way to significantly increase the reliability and predictability of a performance model (Frakes (1977). Evidence suggests that both approaches may have merit. For example, Turner et al. (1997) find a model that makes use of an expanded set of demographic and environmental variables can improve student performance predictability. In addition, Lawrence and Taylor (2000) note that the inclusion of a variable that captures how students are likely to evaluate and process information being taught has predictive merit.

While these approaches are noteworthy, it is important to understand that not all student attributes are readily accessible. Keef and Roush (1997) make this point by investigating the determinants of student performance using a set of general and specific attributes. Based on the results obtained, Keef and Roush (1997) argue it is important to observe that student performance is driven by two sets of factors: 1) a traditional and straight forward (objective-external) set; and 2) a more elusive and ambiguous (subjective-internal) set. Objective-external factors are readily identifiable and easily obtained. Examples of these factors include demographics and prior performance. Subjective-internal factors represent monopolistic information known only to students themselves such as motivation and effort.

A central premise also embedded in the Keef and Roush (1997) model is that the relationship between certain demographic variables is moderated by self concept (i.e., the way one perceives oneself). Results obtained suggest that self concept impacts the predictive power of other variables. As such, Keef and Roush (1997) conclude that isolating and measuring the impact of self concept is an inquiry worthy of further investigation.

Student Perception: A Guide to Accounting Education Reform

As noted in the previous section, existing observations suggest the determinants of student performance cannot be purely associated with traditional background characteristics (e.g., objective-external factors). Indeed, given the large amount of variation in academic performance that remains after controlling for these known individual characteristics, it may be important to identify and assess the impact of certain unobservable or privately held attributes (Stinebrickner and Stinebrickner 2003). This is particularly true for accounting students due to the fact that accounting programs depend on the development of skills over time (Jackling 2005). Indeed, Bartlett et al. (1993) suggest that as accounting students progress through an academic program, certain intangible characteristics related to motivation and ability will emerge and act as intervening variables (e.g., subjective-internal factors) relative to

[2] Indeed, existing evidence does advocate a role for student perception in the reform movement. For example, Frederickson and Pratt (1995) contend accounting education creates value when student demographics; student self-perception of knowledge (accounting skills); and student expectations (given the knowledge they acquire) are considered. Others suggest taking an assessment of the value of initial accounting skills provides insight about the future success of a student (Lee 1999; Rohde and Kavanagh 1996). This could be the case because accounting education builds a skill set in a sequential manner and thus, using student perceptions about ability throughout a curriculum may provide useful insight about current and future classroom performance (Burnett et al 2008). Finally, gaining access to student perceptions of the skills they acquire in a lower sequenced course and how they perceive these skills will be used in a higher level course could provide direction for reform (Sanders and Willis 2009).

performance. Thus, while difficult to measure, Bartlett et al. (1993) go on to state that any attempt to assess performance without a consideration of these variables will, at best, produce only marginal results.

One attribute receiving attention in the literature as a possible predictor of accounting student performance is perception. For instance, Ferreira and Santoso (2008) observe that students' perceptions influence learning approaches and that this, in turn, impacts learning outcomes (e.g., student performance). Accordingly, the authors contend student perceptions are a necessary component of any learning environment. Mladenovic (2000) agrees and contends student perceptions play an important part in the learning process as they influence learning approaches and learning outcomes. Weil et al. (2001) provide more evidence of such a link through a study of how student perceptions relate to the choice of accounting pedagogy and the development of key business skills. Results obtained suggest such relationships do exist.

Lucas (2001) suggests that both the curriculum and learning environment affect student perception and as such, the extent to which these perceptions contribute to academic performance is an important inquiry worthy of review. Finally, Barsky et al. (2001) add an interesting twist to existing commentary. Specifically, the authors assert that managing student perceptions and expectations is critical to enhancing the attractiveness of accounting as an academic major as well as a business activity. As such, the authors indicate reform models that include student perceptions can help to promote the sustainability of accounting as both an academic and professional pursuit.

In the literature, the skill set/performance link and its relation with self concept has been addressed via the theory of self efficacy. Self efficacy is a person's belief concerning his or her ability to successfully perform a given task (Bandura 1977; 1982; and Bandura et al. 1980). Operationally, self efficacy can be seen as the level of confidence or "comfortableness" that an individual possesses relative to his/her ability to execute actions deemed important to a specific outcome. In other words, self efficacy influences one's choice of activities (Bandura 1977; 1982; and Bandura et al. 1980).

Self efficacy plays a critical role in self-motivation when dealing with unfamiliar tasks and is often thought of as an important determinant of future performance (Tesch et al. 2006; Silver et al. 1995; and Lent et al. 1986). Such is the case because self efficacy beliefs control a person's ability to mobilize the physical, intellectual and emotional resources needed to successfully accomplish a task (Stone et al. 1996). Thus, self efficacy beliefs can influence the thought patterns and choices of behavior directed towards task performance (Hackett and Betz 1989).

Research linking self efficacy to accounting education is limited. Stone et al. (1996) investigate the relationship between self efficacy, knowledge and skills by conducting studies exploring the differing effects of accounting education instruction. Results reveal that perceptions are useful as a diagnostic measure of student ability but the predictive power of self efficacy could diminish after an extended period of the delivery of common, course specific instruction. Given these mixed signals, Stone et al. (1996) call for future research to investigate the complex relationship between student knowledge, accounting skill and self efficacy, and how the results obtained might be used to guide approaches adopted to reform accounting education.

Burnett et al. (2008) explore the perceptions that both accounting and non-accounting majors in Intermediate I have about their accounting abilities before and after the administration of a practice set designed to provide a review of the accounting cycle. Results obtained find both groups have similar perceptions of their accounting skills at initial and follow-up evaluations. However, changes in perception within the two groups vary. Burnett et al. (2008) indicate that while their results can be used to guide certain direct resource allocation and curriculum change tasks, they should be viewed as incomplete because they have not been benchmarked against any actual performance related to the direct application of these skills. Consequently, they call for future research to do so. Finally, Christensen et al. (2002) investigate the extent of the direction of self efficacy. Results obtained imply little is known about the self regulatory nature of student behavior. As such, the authors call for future research to identify ways to raise student competency and confidence relative to their skills and to assess what students can anticipate from having such skills.

Taken together, current evidence implies that an analysis of the predictive power of self efficacy could prove useful to efforts adopted to address accounting education reform. Indeed, as the Frederickson and Pratt (1995) model indicates, accounting education reform should be motivated by a desire to capture how student demographics, self efficacy, and an assessment of skill affect performance. Yet, a reasonable observation can be made that current efforts to address this link have been limited to using only traditional or readily observable student attributes (e.g., Burnett 2008, Christensen et al. 2002).

Moreover, while studies have investigated the role of self efficacy in accounting education (Stone et al. 1996; Burnett et al. 2008; and Christensen et al. 2002), none have done so in a fashion that attempts to link self efficacy and its impact on performance to the development of approaches to address accounting education reform. For example, while Burnett et al. (2008) do attempt to associate self efficacy in Intermediate I with reform, they fall short in that they do not actually include the impact of self efficacy on performance. As such, any inferences they make about the relationship are incomplete. Thus, given these shortcomings the question of how student perceptions affect performance and how the perception/performance link can be used to guide efforts to address accounting education reform remains an open inquiry.

The Setting

The purpose of this study is to assess the extent student self efficacy acts as a determinant of performance in Intermediate I, and then to use the information obtained to address curriculum and instructional model reform for the course. Following previous work, we assess the effect of self efficacy in the presence of other demographic and environmental variables known to affect performance. However, our study extends previous work in that we address the self efficacy/ student performance/accounting reform link by investigating the extent to which student perceptions about their skills and grade expectations (both attributes that are unobservable and only known to students themselves) affect performance.

We conduct our investigation in Intermediate I for three reasons. First, we argue Intermediate I is an appropriate setting because it is the course often regarded as the cornerstone of the accounting curriculum and as such, sets the tone for how future academic performance will be evaluated (Eikner and Montondon 2001; Davidson and Balwin 2005; Jennings 1998; and Burnett et al. 2008). In addition, the pedagogy of the course is largely dependent upon information taught in previous courses (Zakrzwski 2003).[3] This dependence on prior course content is important because without a proper foundation developed from previous courses, a student in Intermediate I could spend the entire semester playing catch-up rather than learning (Waples and Darayseh 2005). Given these observations, Intermediate I is a fruitful environment to investigate the perception/performance/reform link because performance in this course is closely related to what students learn from prior accounting courses and how they might perform in the future. As such, much can be learned relative to structuring accounting education reform through a review of the performance differentials of this course.

Second, much attention has been given to the magnitude of the material covered in Intermediate I and observations made that the course may be reaching the point of information overload (Anderson and Boynton 1992; Sunder 2009;

[3] As an example of this dependence, take how the course is offered and structured at our school (while we draw on our school for support, it is likely that the scenario we describe is typical of most accounting programs). Specifically, Intermediate I is the first high-level accounting course taken by business students. The course covers topics like accounting regulations, principles and assumptions, accounting cycles and financial statements, cash, receivables, inventories, PP&E, intangibles and current liabilities. The first four weeks of Intermediate I at our school are used to teach accounting principles and assumptions related to the basic steps in the accounting cycle. Students are then tested on their knowledge of this area. From a pedagogy standpoint, we recognize that these materials are prerequisites for Intermediate I and as such, form the foundation for future instruction in the course. Thus, from a curriculum perspective, we link the instruction of Intermediate I with that received in our introductory course.

and Sanders and Willis 2009). This concern is likely to increase as the instruction related to the adoption of the International Financial Reporting Standards is anticipated to be included in the Intermediate I curriculum (Sunder 2009). This "crowding out" effect in Intermediate I could present a problem because it might limit or even prevent the presentation of materials deemed important to students and the professional community (Burnett et al. 2008). Thus, using Intermediate I as a setting to learn more about how course content affects motivation and student perceptions about ability is a natural starting point towards developing an effective curriculum and instructional model for the course (Waples and Darayseh 2005).

For example, a component of instruction in several Intermediate I curriculums that many view might be contributing to the "crowding out" effect is the re-teach of information taught in principles classes related to the accounting cycle (Sanders and Willis 2009). The basis of debate over this element focuses on the extent to which students need to be reintroduced to the previously taught information. Some argue the information should be presented in Intermediate I because it is the basis for material that will be taught throughout the course (Waples and Darayseh 2005). Yet, others observe programs might have a valid basis for considering the elimination of the information from Intermediate I since any student who passed the prerequisite courses should, on balance, have already mastered the information (Sanders and Willis 2009). Unfortunately, the extent students possess a mastery of this information is held in a monopolistic fashion by the students themselves (Shoulders and Hicks 2008).Thus, the outcome associated with a decision to eliminate the "re-teach" of previously presented information may not be known prior to an examination that tests that subject matter.[4] Given this dilemma, it may be important to actually assess the extent to which student perceptions about the skills associated with prior accounting knowledge affect future performance in Intermediate I. In doing so, instructors can develop instructional models that provide students with an optimal chance to succeed in the course (Sanders and Willis 2009).

Finally, Intermediate I is a good setting because it sets the tone for future evaluations. Specifically, students are aware that the Intermediate I grade is viewed as an indicator of overall accounting acumen and plays a major role in academic progression as well as future job opportunities (Eikner and Montondon 2001; Burnett et al. 2008; and Turner et al. 1997). Thus, Intermediate I, more than any other accounting course, may be where student perceptions play a major role in attaining learning outcomes (Turner et al. 1997).

Methodology

The subjects and procedures used in this study are described below.

Subjects

Subjects consisted of 72 students enrolled in Intermediate I at a large university in the Midwest. In order to eliminate bias caused by teaching styles, all students participating in the study were taught by the same instructor (See Bernardi and Bean 1999). Students were not compensated to participate, but nevertheless, all 72 (100 percent) enrolled students participated.

Experimental Design

The objective of this study is to determine the predictive power of self efficacy relative to student performance in Intermediate I and to assess how the information obtained might be used as input to reform the course. To do so, we

[4] While it may be true that prior to the first exam in any course, indicators of student performance (i.e., prior course grades, class participation, and homework assignments) may be present, it is nevertheless important to note that these factors are only part of an entire framework used to determine performance. Moreover, they are ancillary when compared to actual exam results. Additionally, given the typically high failure and drop-out rates applicable to Intermediate I, it is valid to assume that there may be other "unobservable factors" at play that motivate and indeed, de-motivate, student performance in the course. Part of our objective is to identify and assess the predictive power of these variables on student performance.

gather information from students based on the instrument used by Burnett et al. (2008)[5]. The instrument, a self-report paper and pencil questionnaire, was administered during the third week of the semester the course was offered. Conducting a skills inventory analysis at the beginning of a course is important because it prods students into a conscious effort to identify and evaluate those skills that will serve them well (Hicks and Richardson 1984). Moreover, it is important to gain access to student-held information about skills and perceptions in Intermediate I (Eikner and Montondon 2001).

Self efficacy is measured by two variables: 1) a student's perceptions about his/her skills relative to the accounting cycle; and 2) a student's expectations about his/her grade in Intermediate Accounting I. The first measure provides information relative to the extent students feel that they will be able to perform at the beginning of the course based on their perception of accounting cycle skills obtained in introductory accounting courses. Introductory accounting course content is important because it shapes student perceptions of future success (Geiger and Ogilby 2000). Accordingly, having a fuller understanding of the accounting cycle is a good indicator of success in Intermediate Accounting I (Morgan et al. 1985; and Eikner and Montondon 2001). Moreover, students who demonstrate aptitude relative to the information presented in introductory accounting are much more likely to perform better in Intermediate I (Huang et al. 2005). Finally, as more and more accounting programs adopt diagnostic tests to evaluate the accounting ability of students prior to admission into upper level accounting courses, it is appropriate to assume that students are aware of the importance of these skills relative to future performance (Waples and Darayseh 2005).

Relative to the first measure, the questionnaire administered contained 18 statements related to the accounting cycle that were taught to students in the introductory accounting course. Responses solicited asked students to indicate the extent to which they feel comfortable with a particular cycle skill (based on a Likert scale from [1 – 5] with 5 as the highest). In line with seminal research on self efficacy (e.g., Silver et al. 1995; Lent et al. 1986; and Lent et al. 1984), the responses are summed and the total is interpreted as a student's self perception relative to ability.

The second measure, the self-reported expectation of the final grade for the course, provides information about expected course grade performance. Gul and Fong (1993) suggest that information about grade perception is important because it provides insight about student awareness as to how their skills will be evaluated and valued. In addition, Gul and Fong (1993) suggest perceptions about grades are a viable indicator of the actual awareness that students have about their abilities. Tyson (1989) goes further and suggests grade expectations provide insight about student motivation but notes that because these perceptions are more intrinsic in nature, measuring them may prove difficult. Nevertheless, the authors note that not to include them in an analysis of performance would render knowledge about the predictive power of student attributes incomplete. In association, Christensen et al. (2002) suggests that gaining insight about the relationship between expected grade and classroom performance provides information about the self-regulatory behavior of students.

Finally, this measure reflects a student's understanding of how ability will be evaluated and provides access into just how the mixture of self-knowledge and realistic aspirations held by the student will motivate him/her to achieve a designated learning outcome (Jackling 2005; Gul and Fong 1993; Tyson 1989; Eikner and Montondon 2001; and Svanum and Bigatti 2006). Moreover, because it provides a reasonably summative self reported statement about a student based on an awareness of ability, self-knowledge and course evaluation, the use of this measure as a performance differential is deemed appropriate (Wendorf 2002).

The self-reported expectation of the final grade for the course is also obtained from the instrument. Expected grades were based on a scale from (0 – 4) with the value of grades following the traditional academic distribution where: 0 = F; 1=D; 2= C; 3=B; and 4=A.

[5] The decision to adopt the Burnett et al. (2008) instrument was based on two observations. First, the instrument addressed our research question. Specifically, it asks students to provide their assessment of the skills they possess relative to the accounting cycle. Second, adopting an instrument used in previous work bolsters internal validity.

Finally, in order to assess the impact of self efficacy on student performance, actual measures of performance are required. Student performance is based on the results posted on the first Intermediate I exam. While all students completed the questionnaire, only 67 actually took the first exam.[6] Thus, we subject our analysis to robust testing by investigating our proposed relationships using a full (N=72) sample and a reduced (N=67) sample.

Multivariable Regression Models

The goal of our study is to examine whether self efficacy will impact student test performance in Intermediate I. We employ a multi-variable regression analysis to investigate this query. Prior literature suggests that gender (GENDER) (Eikner and Montondon 2001); age (AGE) (Frakes,1977); status as an accounting major (ACCT) (Turner et al. 1997); cumulative grade-point (CUMGPA) (Turner et al. 1997); course workload (LOAD) (Didia and Hasnat 1998); and prior accounting work experience (WORKEXP) (Burdick and Schwartz 1982) represent the traditional or objective external information likely to act as predictors of performance (TEST). Thus, we choose to include GENDER, AGE, ACCT, CUMGPA, LOAD and WORKEXP in the model as our control variables.

Our variable of interest is self efficacy. Very little direction is available to gain access to the elusive subjective-internal aspect of this variable largely because, by definition, this information is usually known only to the student and cannot easily be obtained. As we discussed before, we construct two measures for self efficacy: self-measured ability (ABILITY) and anticipated grade (GRADE). Our intent is to directly use these two variables as the independent variables in the following ordinary least squared (OLS) regression model:

$$TEST = \beta + \beta_1 GENDER + \beta_2 AGE + \beta_3 ACCT + \beta_4 CUMGPA + \beta_5 LOAD + \beta_6 WORKEXP + \beta_7 ABILITY + \varepsilon \quad [1]$$

$$TEST = \beta + \beta_1 GENDER + \beta_2 AGE + \beta_3 ACCT + \beta_4 CUMGPA + \beta_5 LOAD + \beta_6 WORKEXP + \beta_7 GRADE + \varepsilon \quad [2]$$

where:

GENDER	=	Dichotomous variable equal to 1 if student is a male and 0 otherwise.
AGE	=	Age of student.
ACCT	=	Dichotomous variable equal to 1 if student is an accounting major and 0 otherwise.
CUMGPA	=	Cumulative grade point average at start of semester in which Intermediate I was taken (4.0 basis).
LOAD	=	Current semester course load.
WORKEXP	=	Dichotomous variable equal to 1 if student has accounting work experience and 0 otherwise.
ABILITY	=	the students self-measured ability
GRADE	=	the students self-reported expectation of the final grade

However, an important caveat with the above OLS regression is that prior studies (e.g., Christensen et al. 2002) have shown that self efficacy (ABILITY and GRADE) is directly influenced by ACCT, ACCTGPA, LOAD, and WORKEXP. Hence, including self efficacy and these four variables as explanatory variables in the OLS regression model may lead to inconsistent results (See Greene 2007 for more detailed information).

To circumvent this issue, we choose to adopt the following two-stage regression model.

Stage 1:

$$SELF_i = \alpha_0 + \alpha_1 ACCT + \alpha_2 ACCTGPA + \alpha_3 LOAD + \alpha_4 WORKEXP + \varepsilon \quad [3]$$

Stage 2

$$TEST = \beta + \beta_1 GENDER + \beta_2 AGE + \beta_3 ACCT + \beta_4 CUMGPA + \beta_5 LOAD + \beta_6 WORKEXP + \beta_7 \widehat{SELF}_i + \varepsilon \quad [4]$$

[6] It should be noted that the five students who did not take the exam had not withdrawn from the course either prior to or at exam time. Moreover, reviews conducted up to two weeks after the exam indicate that these same students had not withdrawn. Thus, it is conceivable that, at the time of the exam, these students can be described as validly enrolled and participating.

where:

GENDER	=	Dichotomous variable equal to 1 if student is a male and 0 otherwise.
AGE	=	Age of student.
ACCT	=	Dichotomous variable equal to 1 if student is an accounting major and 0 otherwise.
ACCTGPA	=	Grade point average in prior accounting classes taken (4.0 basis);
CUMGPA	=	Cumulative grade point average at start of semester in which Intermediate I was taken (4.0 basis).
LOAD	=	Current semester course load.
WORKEXP	=	Dichotomous variable equal to 1 if student has accounting work experience and 0 otherwise.
SELFi	=	1) ABILITY which is the student's self-reported ABILITY relative to the accounting cycle; 2) GRADE which is the students self-reported expectation of the final grade
$\widehat{SELFi}$	=	the residual of SELFi from the first stage regression.

The two-stage regression model is conducted in the following way. In the first stage, we regress SELF on the ACCT, ACCTGPA, LOAD and WORKEXP variables. The residual from the first stage regression, which by construction is independent of the ACCT, ACCTGPA, LOAD and WORKEXP variables, is then used in the second regression; it is a measure of the portion of self efficacy that cannot be explained by ACCT, ACCTGPA, LOAD and WORKEXP variables. In other words, these harvested residuals relate to competency or motivation that are completely unobservable and known only to the student. This approach is consistent with Keef and Roush's (1997) suggestion that a more informative investigation of the predictive power of self efficacy requires access to subjective-internal information known only to the students themselves.

Empirical Tests Results

Panel A and Panel B of Table 1 present the descriptive statistics for the full sample and the reduced sample. For 72 students in the full sample, most are male and have declared accounting as a major. The mean (median) age of the students is 23.43 (22) years. The mean (median) cumulative GPA for all students is 2.80 (2.69), which are lower than their accounting-related GPA (mean and median accounting GPA are 3.12 and 3.00, respectively). In this semester, students on average are taking 4.08 courses in addition to the Intermediate I. The students have limited accounting working experiences (0.21 year mean and 0 year median). For the two self efficacy proxies, the mean and median values of ABILITY are 69.65 and 70.50; and the mean and median values of GRADE are 3.42 and 3.0. For the first test grade, the mean and median values are 56.25 and 60 (The full grade is 100).

There are 7 students who did not take the first test and we exclude these students from the full sample to get a reduced sample. The descriptive statistics for the reduced sample are reported in Panel B of Table 1. The results for the reduced sample are similar to those reported in Panel A.

Since several independent variables are incorporated in a regression model, the statistical inference on the variables could be affected by multicollinearity. Multicollinearity is a high degree of correlation (linear dependency) among several independent variables. It commonly occurs when some of the independent variables measure the same concepts or phenomena. In Table 2, we present the correlation coefficients between all independent variables in the regressions for the full sample (the correlation coefficients for the un-tabulated reduced sample are similar). Results obtained find none of the absolute values of the correlation coefficients is larger than 0.50, which suggests multicollinearity is not an issue in our tests.

We first report the results from the OLS regression model. In this model, we include ABILITY (or GRADE) along with ACCT, CUMGPA, LOAD and WORKEXP variables in the OLS regression models (equations [1] and [2]). In essence, this test examines the impact of the entire self efficacy (which captures the portion of competency or motivation observable to outsiders as well as the portion of competency or motivation completely unobservable and known only to the student).

The results are reported in Table 3. The full sample results are reported in Panel A and the reduced sample results are reported in Panel B. Model 1 includes only AGE and GENDER variables as independent variables. Both AGE

and GENDER are related to student demographic information. Model 2 includes two additional variables ACCT and CUMGPA as independent variables. Both ACCT and CUMGPA are related to students' study ability. Model 3 includes two more independent variables LOAD and WORKEXP, which are used to capture students' study efforts. Model 4 includes ABILITY and all variables in Model 3. Model 5 includes GRADE and all variables in Model 3. We find that GRADE is significantly positively associated with TEST (at 10% level) for both the full and reduced samples. In contrast, there is no significant association between ABILITY and TEST for both full and reduced samples. These results are consistent with what are reported in Table 4 and Table 5. We also find that adding ABILITY in the model increases the adjusted R-squares from 18% to 20% for the full sample (from 17% to 19% for the reduced sample), and adding GRADE in the model increases the adjusted R-squares from 18% to 33% for the full sample (from 17% to 24% for the reduced sample). Our interpretation of these results is that students with high grade expectations are more likely to achieve a higher grade on the first test. In contrast, students with high assessment of ability are not necessary to achieve a higher grade on the first test.

As we discussed before, one caveat with the above OLS regression is that prior studies (e.g., Christensen et al. 2002) have shown that self efficacy (ABILITY and GRADE) is directly influenced by ACCT, ACCTGPA, LOAD and WORKEXP. Hence, including self efficacy and these four variables as explanatory variables in the OLS regression model may lead to inconsistent results (See Greene 2007 for more detailed information). To circumvent this issue, we choose to use a two-stage regression model. In essence, this model examines the impact of the portion of competency or motivation completely unobservable and known only to the student.

The first stage regression model examines the relation between self efficacy and student characteristics (equation [3]). The results for the first stage model are reported in Table 4. Panels A and B present the results for the full and reduced samples, respectively. With respect to Panel A, the results show that ABILITY is significantly positively associated with accounting-related working experience (at 10% level), and GRADE is significantly positively associated with past accounting-related GPA (at 10% level). The results in Panel B are similar to what are reported in Panel A. The above results suggest that students' self-evaluated ability related to the accounting cycle is more likely to be associated with their accounting-related experiences while students' self-projected future grades are more likely to be related with their accounting-related GPA.

Table 5 reports the results for the second-stage regression model that examines whether the residual of ABILITY ($\widehat{\text{ABILITY}}$) from Table 4 will be associated with the students' first test grade (equation [4]). The results are reported in Table 5 Panel A (for full sample) and Panel B (for reduced sample). Model 1 includes only AGE and GENDER variables as independent variables. Both AGE and GENDER are related to student demographic information. Model 2 includes two additional variables ACCT and CUMGPA as independent variables. Both ACCT and CUMGPA are related to students' study ability. Model 3 includes two more independent variables LOAD and WORKEXP, which are used to capture students' study efforts. The last model, Model 4, include all variables. We find no significant association between $\widehat{\text{ABILITY}}$ and TEST. Moreover, adding $\widehat{\text{ABILITY}}$ in the model does not increase the adjusted R-squares, which suggests that $\widehat{\text{ABILITY}}$ does not explain the variations in TEST variable. Our interpretation of these results is that students' self evaluation of their accounting ability does not affect their actual grade on the first test.

Table 6 reports the results for the second stage regression model that examines whether the residual of GRADE ($\widehat{\text{GRADE}}$) from Table 4 will be associated with the students' first test grade (equation [4]). The results are reported in Table 6 Panel A (for full sample) and Panel B (for reduced sample). Model 1 includes only AGE and GENDER variables as independent variables. Both AGE and GENDER are related to student demographic information. Model 2 includes two additional variables, ACCT and CUMGPA, as independent variables. Both ACCT and CUMGPA are related to students' study ability. Model 3 includes two more independent variables LOAD and WORKEXP, which are used to capture students' study efforts. The last model, Model 4, include all variables. We find that $\widehat{\text{GRADE}}$ is significantly positively associated with TEST (at 10% level), which suggests that students with higher grade expectations are more likely to achieve a higher grade in the first test. Moreover, adding $\widehat{\text{GRADE}}$ in the model increases the adjusted R-squares from 18% to 29% for the full sample (from 17% to 21% for the reduced sample). Our interpretation of these results is that $\widehat{\text{GRADE}}$ can explain the variations in TEST variable.

Implications for Accounting Education Reform in Intermediate I

The focus of our study is to capture certain heretofore unobservable or privately held student perceptions and to assess the predictive power of these perceptions on performance in Intermediate I. Obtaining this information is important because it provides access to attributes not routinely known about students (which can be used to understand how students assess ability and what motivates students to perform). Our results purport two interesting outcomes:1) perceptions about accounting cycle skills do not relate to performance, and 2) perceptions of the capacity to earn a grade (based on a summative analysis of self-awareness, knowledge and motivation) are significantly associated with performance.

Interpretatively, our results also provide some much needed direction relative to Intermediate I reform. For instance, relative to the first outcome, prior literature suggests students may not fully capture their intellectual capacity when assessing ability; i.e., self reported responses may be askew because students may over or underestimate their own ability (Christensen et al. 2002). This presents a significant dilemma for Intermediate I students who need to assess their own accounting cycle skills, as a solid understanding of these skills is an important component for success in the course (Zakrwski 2003). In other words, if Intermediate I students do not have a true picture of their skills, then their performance in the course might suffer. Thus, it is appropriate to presume that a value adding aspect of Intermediate I pedagogy should include a way for students to gain a more realistic and accurate assessment of skill.

Our second outcome infers that grade expectations play a part in Intermediate I performance. This could be the case because accounting students assign value to their educational experience based on how academic performance contributes to employment (Barsky et al. 2001). Moreover, because grades play a major role in Intermediate I performance assessment, students invariably develop and use grade targets to guide the amount of study time and other resources they will allocate to the course (Turner et al. 1997).

Finally, as both the amount and difficulty level of the material covered in Intermediate I are significant, student motivation is a big factor for success in the course (Waples and Darayseh 2005). As a consequence, Intermediate I instructors can often find themselves struggling trying to figure out: 1) how to adjust students to the difficulty level of Intermediate I in a very short time and; 2) how to motivate students with varying levels of skills and diverse backgrounds via traditional class room teaching. Thus, it is reasonable to assert that an effective approach to Intermediate I reform should include efforts to enhance student motivation.

Proposed Solutions

Efforts to implement Intermediate I reform are not without challenge. One of the biggest challenges involves introducing reform to a course that is already crowded with an often unyielding subject agenda. Specifically, the charge of Intermediate I instructors is to cover a broad array of very important and very detailed topics in one semester. Take, for example, the typical outline for Intermediate I at our school. In one semester, our instructors are expected to teach 13 chapters (based on Kieso and Weygandt, Thirteen Edition) in 16 weeks. The general focus of instruction in the course is to introduce students to the detailed task of associating financial statement analysis and reporting with accounting theory and technicalities. In addition, course content includes re-teaching the accounting cycle. Thus, while comprehensive, the Intermediate I teaching agenda is crowded. As a consequence, significant time constraints emerge which invariably forces instructors to either leave out certain topics or not cover material in the depth they would prefer. Under these conditions, our instructors fear students may not be experiencing the most optimal learning experience. In association, students often feel rushed and unsure of their abilities throughout the semester.

Given these conditions and the results of our study, we suggest the following framework for Intermediate I curriculum reform. Initially, we advocate a reform framework that excludes the re-teaching of the accounting cycle materials. We make this recommendation in order to address and minimize the time constraints currently present in the course. However, given that prior evidence (Zakrwski 2003; and Sanders and Willis 2009) suggests accounting cycle knowledge improves performance in Intermediate I, it is inherent that students have a solid understanding of this material at the beginning of the course. Moreover, as it is intuitively quite possible that some students may not

possess this foundation upon entering Intermediate I, we suggest individual tutoring sessions targeting reinforcement be provided based on student requests. Ideally, a student's request for tutoring services should be based on a perceived need. Accordingly, we propose student requests for these services be based on input they acquire from a self-assessment of their accounting cycle skill set, which can be obtained using a skills inventory checklist similar to the one employed in this study. This approach provides the student with a benchmark to assess ability.

Yet, the results from our empirical investigations show that a student's perceptions about his/her skills relative to the basic steps in the accounting cycle are not significantly associated with first exam performance in Intermediate I (which tests how well students know the basic steps of the accounting cycle). One reason for these results could be that students may not know how to properly assess their skill level (Christensen et al. 2002). Thus, under our framework we contend that a student's self evaluation should only be part of the basis used to request tutoring services (related to the basic steps in the accounting cycle) as this evaluation may not be altogether accurate.

Specifically, since (based on our results) a student's perceptions about his/her skills relative to the basic steps in the accounting cycle may not be accurate, we suggest a supplemental diagnostic test be adopted in order to help students evaluate their skill set. Thus, as constructed, our framework includes two separate but inter-related skill assessments. The rationale behind the "coupling" of a self reported assessment with the results of a diagnostic test is that such a structure provides a complete picture for students to compare perceived ability to actual performance. This comparison works to provide a more accurate assessment of skill which, in turn, can be used to guide a student to make a more informed decision relative to adopting a necessary step (i.e., the selection to seek out and participate in tutoring) that could contribute to possible improvements in Intermediate I performance.

Our study also shows that a student's expectation about his/her grades in Intermediate I is significantly associated with the first test performance (after controlling for factors such as course load, prior GPA, and work experiences). We argue that a student's expectation about his/her grades implies the commitment to the efforts he/she plans to put forth, which is significantly associated with the actual grade of the first test. Thus, under our curriculum framework we suggest grade motivation has a significant role and as such, propose the following.

Initially, we propose the curriculum of Intermediate I should assess students' expectations about their grades at the beginning of the semester. Then, given the information obtained, students should be divided into groups based on their expectations about their grades in Intermediate I. Finally, the student groups should be monitored and dealt with based on their expectations. [7]

For example, students with lower expectations should be closely monitored relative to course load, extracurricular activities and other factors that might influence students' performance. Explicitly, a discussion with these students about the rigor of Intermediate I and the need to ensure that a balance exists between school and other activities when taking Intermediate I might prove especially beneficial. Interestingly, these discussions might also reveal reasons early on why a student may not expect do well in Intermediate I and accordingly, instructors can use this information to develop ways to reduce the possibility of low performance. For instance, the instructor might find out that a student has low expectations because of course or work loads. In this instance, the instructor could discourage students in this group from taking a load of more than five courses in one semester while taking Intermediate 1. Moreover, students in this group with a part-time job should be advised to reduce their course load or to reduce their work hours while taking Intermediate 1.

[7] While such monitoring efforts might prove difficult for other accounting courses due to size, the very nature and reputation of Intermediate I results in smaller enrollments. Also, because this course is the "crown" of most accounting programs, extra resources are often allocated to it. As such, it is completely reasonable to assume that increased student monitoring is possible for the course. Finally, note that while we have taken care to isolate and describe certain curriculum reform activities adopted to address students in a particular group, in reality all of the actions we outline can be used to assist the entire classroom population. As such, we recognize that these reform recommendations can be applied to all students.

Students in this group might also need more incentives to perform. Thus, we suggest instructors provide more incentives for these students so that they will be more committed to the course. For instance, instructors might guide students to an understanding of how a bad grade in Intermediate 1 could impact their future career plans. Instructors can also use these individual discussions to understand why a student expects a low grade, and then try to provide corresponding support. For example, a student may expect a low grade because he/she has to work part time and has no time to attend the regular tutoring sessions. The instructor could arrange a special tutoring session to accommodate the student's schedule. A student may also expect a low grade because he/she does not have web access at home which is needed to access any online supplementary course materials. The instructor could reserve the school's computer lab for the course so students can access the course materials.

For those who have higher expectations, the key is to keep them motivated to study in order to achieve the outcomes they expect. In doing so, instructors want to ensure that grade expectation and grade outcomes converge in order to avoid student disillusionment. Several approaches can be adopted to accomplish this.

First, we suggest highly motivated students be provided with access to self study resources (outside of the classroom). Moreover, these students could be encouraged to participate in honors programs that require a thesis for completion. The focus of the thesis could be a particular aspect of accounting that may be of interest to them. Collectively, these actions could result in directing highly motivated students to teach themselves the contents of topics which may not be covered in class due to the time limitation. In addition, these actions provide access to topical areas that the student might want to pursue once employed.

Second, we contend that while students with high grades expectations for Intermediate I are aware of the rigor of the course, they also have some perspectives about the benefits that await them upon successful completion (i.e., a high grade) of the course. Under our model, it is important that instructors reinforce the perceptions of the benefits and opportunities that arise from successful completion. For example, working through accounting student organizations, instructors could implement a speaker series where former graduates return to campus to provide insight about their professional careers. A key aspect of this forum would be to emphasize how success in the classroom converts to success in the profession. Moreover, these forums should include a diverse set of speakers from all aspects of business. In doing so, students become aware of the many different opportunities that may avail to them based on successful classroom performance. Finally, to provide a more immediate incentive, extra points could be awarded to students for attending and participating in these forums.

Conclusions

This paper assesses the extent to which student self efficacy acts as a determinant of performance and how information gained about this link can be used to guide accounting education reform. We examine two measures of self efficacy: 1) a student's perceptions about his/her skills relative to the accounting cycle; and 2) a student's expectations about his/her grade in Intermediate I. We argue that these two measures capture different aspects of a student's self efficacy. The first measure reflects a student's self evaluation of his/her ability to do well in Intermediate I. The second measure reflects a student's commitment to the efforts he/she is willing to put forth. We find that, after controlling for the demographic and environmental variables known to affect performance, a student's perceptions of their accounting skills do not impact first exam test performance in Intermediate I. In contrast, a student's perceptions of grade are significantly associated with the test performance. Our interpretation of these results is that a student's self evaluation of his/her ability to do well in Intermediate I may not be accurate and is not directly related to the actual grade. On the contrary, a student's commitment to the efforts he/she plans to put forth is significantly associated with the actual grade.

Based on these results, we propose curriculum changes for Intermediate I. The changes we propose (relative to our experience with student Intermediate I performance) reflect an effort on our part to understand how students perceive their abilities, and what motivates them to achieve outcomes (i.e., an acceptable grade) that will be of value in the educational and employment markets. Moreover, to the extent possible we have tried to obtain information monopolistically held by the students. This information can be used to create a more informative model of the

skill/motivation/performance relationship to provide some direction for Intermediate I course reform (in terms of curriculum and instruction).

Our specific results, however, can also be cast in general form to accounting education. Specifically, accounting education reform should start by gaining more information about students and using this information to motivate students. We suggest that since students appear to be unable to form an accurate perception of their accounting skills, it is necessary to assess the level of students' skills at the beginning of the semester to help students identify their skill level. The assessment provides a clear guide for the students on how much efforts they need to expend in the course. To be effective, we suggest that the self assessments and diagnostic tests be conducted prior to the entry into a course. That way, a student will be aware of his/her strengths and weaknesses before the start of class and will be able to make suitable tutoring or other arrangements.

We also suggest that it is necessary to assess students' expectations about their grades at the beginning of the semester since a student's expectation about his/her grades implies the commitment to the efforts he/she plans to put forth. To do so, we suggest accounting faculty need to provide individual counseling and advisement. Yet, this recommendation in and of itself also creates a dilemma. Specially, to achieve this goal, accounting faculty should be given more time to devote to the educational process outside the classroom. Yet, under most programs today faculty members are not awarded for advising. In fact, this role is often relegated to advising departments where a particular advisor may or may not have a formal accounting education. Under these conditions, advisees are one step removed from those who actually administer instruction or evaluate performance. The result is that advisees may have a misguided perspective on what it takes to get through the curriculum. [8] Based on these observations, we suggest our framework as only a beginning input to overall accounting education reform. Indeed, extended steps toward reform will require that all parties (i.e., students, faculty, administrators and employers) be engaged.

Our results should be not considered without addressing the limitations of the study. For example, as we have intimated, due to the native structure of its focus our study is limited by the sample as it was drawn from a particular institution. Thus, the results we obtain may not be generalizable to other institutions or academic settings. Accordingly, this limitation should be considered when interpreting our findings. In addition, the findings are confined within the context of Intermediate I. Finally, we also recognize that we investigate reform via the use of how the first Intermediate I test performance is shaped by accounting information and skills obtained in a previous course. We admit that different outcomes could emerge if self efficacy was investigated within a different course setting or for a different test in Intermediate I.

Notwithstanding these limitations, we contend our work offers future opportunities for further research in this area. For instance, future research could inquire as to what conditions in the global business community motivate students to perform (i.e., attain grade targets) and how performance can be tied to the opportunities associated with the growing role of accounting in society. Two consequences could emerge from such an inquiry. First, student motivations related to the pursuit of an accounting degree can be captured in a more global context. As such, the question of how to address the sustainability of accounting as an academic and professional pursuit is given attention. Second, students pursuing accounting as a major or minor who are not necessarily interested in traditional job placements may identify opportunities available to them as successful graduates. In doing so, students are likely to be motivated to perform in order to reach those goals. The results of a study that investigates these inter-relationships will provide solutions to address how our academic community can use the accounting curriculum to

[8] Involving accounting professors in the advising process may bring realism to the accounting curriculum and may allow them to learn how to better identify factors monopolistically held by the student about ability and motivation. As we have demonstrated, it is access to this type of information that allows one to better plan for accounting education reform. Thus, with effective counseling, students may be better served by the development of reforms that focus on their needs. In doing so, the skill/perception/performance link is enhanced by reforms that are based on a student focused model and in the end, all players are satisfied.

produce more focused, well rounded and informed graduates (who can perform in the growing niches that can only be fulfilled by those with a broad base of accounting knowledge).

References

Albrecht, W. Steve., and Robert J. Sack. *Accounting Education: Charting the Course through a Perilous Future.* Vol. 16. Sarasota, Fla.: American Accounting Association, 2000.

American Accounting Association (AAA), Committee on the Future Structure, Content and Scope of Accounting Education (The Bedford Committee),"Future Accounting Education: Preparing for the Expanding Profession". *Issues in Accounting Education* (Spring) (1986): 168 – 195.

Anderson, James A., and William C. Boynton. "Managing the Intermediate Accounting Overload: An Experiment." *Journal of Accounting Education* 10 (1992): 297-307.

Bandura, Albert. "Self Efficacy: Toward a Unifying Theory of Behavioral Change." *Psychological Review* 84 (1977): 191 – 215.

Bandura, Albert, Nancy E. Adams, Arthur B. Hardy, and Gary N. Howells. "Tests of the Generality of Self-Efficacy Theory." *Cognitive Therapy and Research* 4(1) (1980): 39-66.

Bandura, Albert. "Self Efficacy Mechanism in Human Agency." *American Psychologist* 37 (1982): 122 - 147.

Barefield, Russell. "A Critical View of the AECC and the Converging Forces of Change." *Issues in Accounting Education* 6(2) (1991): 305 – 312.

Barsky, Noah P., and Anthony H. Catanach. "Perception Is Reality: Managing Student and Parental Expectations Is Critical to Increasing Accounting Enrollments." *Management Accounting Quarterly* Fall (2001): 22-32.

Barsky, Noah, Anthony Catanach, and Bette Kozlowski. "Creating Strategic Responses to Critical Risks Facing Accounting Education". *Issues in Accounting Education* 18(4) (2003): 445 – 462.

Bartlett, Susan, Michael Peel, and Maurice Pendlebury. "From Fresher to Finalist: A Three Year Analysis of Student Performance on An Accounting Degree Programme." *Accounting Education* 2 (2) (1993): 111 – 122.

Bernardi, Richard A., and David F. Bean. "Preparer Versus User Introductory Sequence: The Impact on Performance in Intermediate Accounting I." *Journal of Accounting Education* 17 (1999): 141-56.

Burdick, Richard, and Bill N. Schwartz. "Predicting Grade Performance for Intermediate Accounting." *Delta Pi Epsilon Journal* 24(3) (1982): 117-127.

Burnett, Royce, Mark Friedman, and Ya-wen Yang. "The Change of Students' Perception of Accounting Skills in Intermediate Accounting: A Guide for Accounting Education Reform." *The Accounting Educators' Journal* XVII (2008): 81-101.

Catanach Jr., Anthony H., David B. Croll, and Robert L. Grinaker. "Teaching Intermediate Financial Accounting Using a Business Activity Model." *Issues in Accounting Education* 15(4) (2000): 583-603.

Christensen, Theodore E., Timothy J. Fogarty, and Wanda A. Wallace. "The Association between the Directional Accuracy of Self-Efficacy and Accounting Course Performance." *Issues in Accounting Education* 17(1) (2002): 1-26.

Davidson, Ronald, and Bruce Baldwin. "Cognitive Skills Objectives in Intermediate Accounting Textbooks: Evidence From End-of-Chapter Material." *Journal of Accounting Education* 23 (2005): 79 – 95.

Didia, Dal, and Baban Hasnat. "The Determinants of Performance in the University Introductory Finance Course." *Financial Practice and Education* Spring/Summer (1998): 102-107.

Donelan, Joseph G., and Ronald O. Reed. "Characteristics of Accounting Programs: A Survey of Students' Perceptions." *Journal of Accounting Education* 10 (1992): 191-209.

Dosch, Robert J., and Jacob R. Wambsganss. "The Blame Game: Accounting Education Is Not Alone." *Journal of Education for Business* May/June (2006): 250-254.

Eikner, A. Elaine, and Lucille Montondon. "Evidence on Factors Associated with Success in Intermediate Accounting 1." *Accounting Educators' Journal* XIII (2001): 1-17.

Ferreira, Aldonio, and Andrijani Santoso. "Do Students' Perceptions Matter? A Study of the Effects of Students' Perceptions on Academic Performance." *Accounting and Finance* 48 (2008): 209 – 231.

Frakes, Albert H. "Introductory Accounting Objectives and Intermediate Accounting Performance." *The Accounting Review* LII(1) (1977): 200-210.

Frederickson, James R., and Jamie Pratt. "A Model of the Accounting Education Process." *Issues in Accounting Education* 10(2) (1995): 229-246.

Geiger, Marshall A., and Suzanne M. Ogilby. "The First Course in Accounting: Students' Perceptions and Their Effect on the Decision to Major in Accounting." *Journal of Accounting Education* 18 (2000): 63-78.

Greene, William. H. Econometric Analysis. Sixth Edition. Prentice Hall. Upper Saddle River, New Jersey, 2007.

Gul, Ferdinand, and Steve Fong. "Predicting Success for Introductory Accounting Students: Some Further Hong Kong Evidence." *Accounting Education* 2 (1) (1993); 33 – 42.

Hackett, Gail, and Nancy E. Betz. "An Exploration of the Mathematics Self-Efficacy/Mathematics Performance Correspondence." *Journal for Research in Mathematics Education* 20(3) (1989): 261-273.

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

Huang, Jiunn, John O'Shaughnessy, and Robin Wagner. "Prerequisite Change and Its Effect on Intermediate Accounting Performance." *Journal of Education for Business* May/June (2005): 283-88.

Jacking, Beverly. "Perceptions of the Learning Context and Learning Approaches; Implications for Quality Learning Outcomes in Accounting." *Accounting Education: An International Journal* 14(3) (2005): 271 – 291.

Jennings, Ross. "Concepts Before Rules: A new Approach to Intermediate Accounting." *Issues in Accounting Education* 13(4) (1998): 833 – 850.

Keef, Stephen P., and Melvin L. Roush. "New Zealand Evidence on the Performance of Accounting Students: Race, Gender, and Self-Concept." *Issues in Accounting Education* 12(2) (1997): 315-330.

Krausz, Joshua, Allen Schiff, Jonathan Schiff, and Joan Van Hise. "Predicting Success in Graduate Financial Statement Analysis Courses - Do Traditional Predictors of Accounting Success Apply?" *Accounting Educators' Journal* XIV (2002): 1-8.

Lawrence, Robyn, and Larry W. Taylor. "Student Personality Type Versus Grading Procedures in Intermediate Accounting Courses." *Journal of Education for Business* Sept/Oct (2000): 28-35.

Lee, Dominica. "Strength of High School Accounting Qualification and Student Performance in University-Level Introductory Accounting Course in Hong Kong." *Journal of Education for Business* May/June (1999): 301 – 306.

Lent, Robert W., Steven D. Brown, and Kevin C. Larkin. "Relation of Self-Efficacy Expectations to Academic Achievement and Persistence." *Journal of Counseling Psychology* 31(3) (1984): 356-362.

Lent. Robert W., Steven D. Brown, and Kevin C. Larkin. "Self-Efficacy in the Prediction of Academic Performance and Perceived Career Options." *Journal of Counseling Psychology* 33(3) (1986): 265-269.

Lucas, Ursula. "Deep and Surface Approaches to Learning Within Introductory Accounting: A Phenomenographic Study." *Accounting Education* 10(2) (2001): 161 – 184.

Mladenovic, Rosina. "An Investigation Into Ways of Challenging Introductory Accounting Students' Negative Perceptions of Accounting." *Accounting Education* 9(2) (2000): 135 – 155.

Morgan, Robert G., Michael F. Cornick, and William F. Kauder. "Predicting Student Success in Intermediate Accounting 1." *Journal of Education for Business* Nov. (1985): 80-84.

Rebele, James E., Barbara A. Apostolou, Frank A. Buckless, John M. Hassell, Laurence R. Paquette, and David E. Stout. "Accounting Education Literature Review (1991-1997), Part 1: Curriculum and Instructional Approaches." *Journal of Accounting Education* 16(1) (1998): 1-51.

Rohde, Fiona H., and Marie Kavanagh. "Performance in First Year University Accounting: Quantifying the Advantage of Secondary School Accounting." *Accounting and Finance* 36 (1996): 275-285.

Russell, Keith A., C.S. Bud Kulesza, W. Steve Albrecht, and Robert J. Sack. "Charting the Course Through a Perilous Future." *Management Accounting Quarterly* Fall (2000): 4-11.

Sanders, D. Elaine, and Veronda F. Willis. "Setting the P.A.C.E. for Student Success in Intermediate Accounting." *Issues in Accounting Education* 24(3) (2009): 319-337.

Shoulders, Craig D., and Sam A. Hicks. "ADEPT Learning Cycles Enhance Intermediate Accounting Student Learning Success." *Issues in Accounting Education* 23(2) (2008): 161-182.

Silver, William S., Terence R. Mitchell, and Marilyn E. Gist. "Responses to Successful and Unsuccessful Performance: The Moderating Effect of Self-Efficacy on the Relationship between Performance and Attributes." *Organizational Behavior and Human Decision Processes* 62(3) (1995): 286-299.

Stinebrickner, Ralph, and Todd Stinebrickner. "Working During School and Academic Performance." *Journal of Labor Economics* 21(2) (2003): 473 - 491

Stone, Dan N., Vairam Arunachalam, and John S. Chandler. "An Empirical Investigation of Knowledge, Skill, Self-Efficacy and Computer Anxiety in Accounting Education." *Issues in Accounting Education* 11(2) (1996): 345-376.

Sunder, Shyam. "IFRS and the Accounting Consensus." *Accounting Horizons* 23(1) (2009): 101 – 111.

Svanum, Soren, and Silvia Bigatti. “Grade Expectations: Informed or Uniformed Optimism, or Both.” *Teaching of Psychology* 33 (1) (2006): 14 – 18.

Tesch, Debbie B., Marianne Murphy, and Elaine Crable. "Implementation of a Basic Computer Skills Assessment Mechanism for Incoming Freshmen." *Information Systems Education Journal* 4(13) (2006): 3-11.

Turner, Jerry L., Sarah A. Holmes, and Casper E. Wiggins. "Factors Associated with Grades in Intermediate Accounting." *Journal of Accounting Education* 15(2) (1997): 269-288.

Tyson, Thomas. “Grade Performance in Introductory Accounting Courses: Why Female Students Outperform Males.” *Issues in Accounting Education* 4(1) (1989): 153 – 160.

Waples, Elaine, and Musa Darayseh. "Determinants of Students' Performance in Intermediate Accounting." *Journal of College Teaching and Learning* 2(12) (2005): 87-92.

Wendorf, Craig. “Grade Point Average and Changes in (Great) Grade Expectations” (in Faculty Forum). *Teaching in Psychology* 29(2) (2002): 136 – 138.

Weil, Sidney, Peter Oylelere, Joanna Yeoh, and Colin Firer. “A Study of Students’ Perceptions of the Usefulness of Case Studies for the Development of Finance and Accounting-Related Skills and Knowledge.” *Accounting Education* 10(2) 2001: 123 – 146.

Zakrzwski, Deborah. “Ease the Pain of Intermediate Accounting”. *Pennsylvania CPA Journal* Summer (2003): 26.

Table 1
Descriptive Statistics

Panel A: Full Sample

Variable	N	Mean	Std Dev	Median	Minimum	Maximum
GENDER	72	0.61	0.49	1.00	0.00	1.00
AGE	72	23.43	5.69	22.00	19.00	53.00
ACCT	72	0.71	0.46	1.00	0.00	1.00
CUMGPA	72	2.80	0.73	2.69	1.18	4.00
ACCGPA	72	3.12	0.71	3.00	2.00	4.00
LOAD	72	4.08	0.95	4.00	2.00	6.00
WORKEXP	72	0.21	0.41	0.00	0.00	1.00
ABILITY	72	69.65	9.89	70.50	46.00	93.00
GRADE	72	3.42	0.62	3.00	2.00	4.00
TEST	72	56.25	29.35	60.00	0.00	100.00

Panel B: Reduced Sample

Variable	N	Mean	Std Dev	Median	Minimum	Maximum
GENDER	65	0.58	0.50	1.00	0.00	1.00
AGE	65	23.42	5.84	22.00	19.00	53.00
ACCT	65	0.74	0.44	1.00	0.00	1.00
CUMGPA	65	2.85	0.73	2.73	1.18	4.00
ACCGPA	65	3.15	0.72	3.44	2.00	4.00
LOAD	65	4.11	0.97	4.00	2.00	6.00
WORKEXP	65	0.20	0.40	0.00	0.00	1.00
ABILITY	65	69.72	10.04	71.00	46.00	93.00
GRADE	65	3.49	0.59	4.00	2.00	4.00
TEST	65	62.31	23.93	64.00	0.00	100.00

This table reports the descriptive data for the key study variables. Panel A reports based on all students enrolled at the time of the first Intermediate I exam. Panel B reports based on all students enrolled at the time of the first exam who actually took the first Intermediate I exam The variable definitions are: GENDER = Dichotomous variable equal to 1 if student is a male and 0 otherwise; AGE = Age of student; ACCT = Dichotomous variable equal to 1 if student is an accounting major and 0 otherwise; CUMGPA = Cumulative grade point average at the start of the semester in which Intermediate I was taken (4.0 basis); ACCTGPA = Grade point average in prior accounting classes taken (4.0 basis); LOAD = Current semester course load; WORKEXP = Dichotomous variable equal to 1 if student has accounting work experience and 0 otherwise; ABILITY = Student self-reported ability relative to the accounting cycle; GRADE = Student self-reported expectation of the final course grade; TEST = Grade posted by student on the first Intermediate I exam.

TABLE 2
Pearson Correlation Analysis

Full Sample (N=72)

	GENDER	AGE	ACCT	CUMGPA	ACCGPA	LOAD	WORKEXP	ABILITY	GRADE	TEST
GENDER	1.00	-0.01	-0.26**	-0.13	-0.24**	-0.02	-0.01	-0.03	-0.15	-0.06
AGE		1.00	0.04	-0.25**	0.15	-0.18	0.40***	0.10	-0.01	0.04
ACCT			1.00	0.13	0.07	-0.24	0.18	0.21*	0.19	0.23*
CUMGPA				1.00	0.30**	0.14	0.06	0.08	0.20	0.38***
ACCGPA					1.00	0.02	0.15	0.22*	0.25**	0.36***
LOAD						1.00	-0.01	-0.09	-0.01	-0.09
WORKEXP							1.00	0.36***	0.15	-0.11
ABILITY								1.00	0.36***	0.15
GRADE									1.00	0.44***
TEST										1.00

This table provides a correlation analysis of the key study variables. Spearman Rank correlation analysis (un-tabulated) provides similar results. The results are based on all students enrolled at the time of the first Intermediate I exam (results based on all students enrolled at the time of the first exam who actually took the first Intermediate I exam are similar (un-tabulated). The variable definitions are: GENDER = Dichotomous variable equal to 1 if student is a male and 0 otherwise; AGE = Age of student; ACCT = Dichotomous variable equal to 1 if student is an accounting major and 0 otherwise; CUMGPA = Cumulative grade point average at the start of the semester in which Intermediate I was taken (4.0 basis); ACCTGPA = Grade point average in prior accounting classes taken (4.0 basis); LOAD = Current semester course load; WORKEXP = Dichotomous variable equal to 1 if student has accounting work experience and 0 otherwise; ABILITY = Student self-reported ability relative to the accounting cycle; GRADE = Student self-reported expectation of the final course grade; TEST = Grade posted by student on the first Intermediate I exam. *, **,*** denote statistical significance at the 0.10 , 0.05 and 0.01levels for two tailed tests.

Table 3
The Relation between (Performance) TEST and (Self Efficacy) ABILITY and GRADE [a]

$TEST = \alpha + \beta_1 GENDER + B_2 AGE + B_3 ACCT + B_4 CUMGPA + B_5 LOAD + B_6 WORKEXP + B_7 ABILITY_i + \epsilon$

$TEST = \alpha + \beta_1 GENDER + B_2 AGE + B_3 ACCT + B_4 CUMGPA + B_5 LOAD + B_6 WORKEXP + B_7 GRADE_i + \epsilon$

Panel A: Full Sample (N=72)

Independent Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	53.21 *	-8.39	-13.03	-45.51	-71.83
	(15.60)	(21.27)	(27.80)	(36.33)	(29.36)
GENDER	-3.48	2.15	2.57	2.40	5.06
	(7.18)	(6.83)	(6.70)	(6.66)	(6.10)
AGE	0.22	0.49	0.98	1.02	1.09 **
	(0.62)	(0.57)	(0.63)	(0.62)	(0.60)
ACCT		11.65	13.01 **	11.66	10.23
		(7.35)	(7.57)	(7.58)	(6.90)
CUMGPA		15.53 *	17.16	16.84 *	14.57 *
		(4.55)	(4.52)	(4.50)	(4.15)
LOAD			-2.19	-1.84	-1.97
			(3.54)	(3.52)	(3.21)
WORKEXP			-18.38	-22.35 *	-22.39 *
			(8.67) *	(9.08)	(7.92)
ABILITY				0.47	
				(0.34)	
GRADE					18.73*
					(4.81)
Adjusted R Squares	-2.4%	15%	18%	20%	33%

Panel B: Reduced Sample (N=65)

Independent Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	54.30 *	5.59	17.34	-11.90	-22.34
	(13.04)	(18.28)	(23.66)	(30.50)	(28.04)
GENDER	3.02	6.54	6.05	6.02	7.54
	(6.09)	(5.89)	(5.75)	(5.69)	(5.56)
AGE	0.26	0.48	0.73	0.77	0.84
	(0.52)	(0.48)	(0.52)	(0.52)	(0.50)
ACCT		6.94	6.14	4.68	5.71
		(6.65)	(6.88)	(6.88)	(6.61)
CUMGPA		12.78 *	14.07 *	13.59 *	12.50 *
		(3.91)	(3.84)	(3.81)	(3.75)
LOAD			-4.32	-4.07	-3.83
			(2.99)	(2.96)	(2.88)
WORKEXP			-12.15	-15.64 **	-16.40
			(7.56)	(7.84)	(7.47) *
ABILITY				0.43	
				(0.29)	
GRADE					11.41 *
					(4.72)
Adjusted R Squares	-2.4%	13%	17%	19%	24%

a This table reports the results of regressing student performance on a series of independent variables. Panel A reports based on all students enrolled at the time of the first exam. Panel B reports based on all students enrolled at the time of the first exam who actually took the exam. Standard errors are reported in the parentheses. *, ** denote statistical significance at the 0.10 and 0.05 levels for two tailed tests. GENDER = Dichotomous variable equals 1 if student is a male and 0 otherwise; AGE = Age of student; ACCT = Dichotomous variable equals 1 if student is an accounting major and 0 otherwise; CUMGPA = Cumulative grade point average at the start of the semester in which Intermediate I was taken (4.0 basis); CCTGPA = Grade point average in prior accounting classes taken (4.0 basis); LOAD = Current semester course load; WORKEXP = Dichotomous variable equals 1 if student has accounting work experience and 0 otherwise; ABILITY = Student self-reported ability relative to the accounting cycle; GRADE = Student self-reported expectation of the final course grade; TEST = Grade posted by student on the first Intermediate I exam. The standard errors are reported in the parentheses under the coefficients.

Table 4
The Relation between Self Efficacy and Student Characteristics- First-Stage [a]
$SELF_i = \alpha + \beta_1 ACCT + B_2 ACCTGPA + B_3 LOAD + B_4 WORKEXP + \epsilon$

Panel A: Full Sample (N=72)

Independent Variables	Dependent Variable($SELF_i$) ABILITY	GRADE
Intercept	61.24 *	2.56 *
	(7.28)	(0.48)
ACCT	2.81	0.22
	(2.51)	(0.17)
ACCTGPA	2.38	0.20 **
	(1.57)	(0.10)
LOAD	-0.62	0.01
	(1.1)	(0.08)
WORKEXP	7.42 *	0.14
	(2.75)	(0.18)
Adjusted R Squares	13%	4%

Panel B: Reduced Sample (N=65)

Independent Variables	Dependent Variable($SELF_i$) ABILITY	GRADE
Intercept	60.76 *	2.93 *
	(7.98)	(0.49)
ACCT	3.63	0.12
	(2.85)	(0.17)
ACCTGPA	2.08	0.151
	(1.66)	(0.10)
LOAD	-0.40	-0.02
	(1.27)	(0.08)
WORKEXP	7.00 *	0.28
	(3.05)	(0.19)
Adjusted R Squares	11%	4%

a This table reports the results of regressing student self-reported measures of self efficacy on a series of independent variables. Panel A reports based on all students enrolled at the time of the first Intermediate I exam. Panel B reports based on all students enrolled at the time of the first Intermediate I exam who actually took the exam. Standard errors are reported in the parentheses. *, ** denote statistical significance at the 0.10 and 0.05 levels for two tailed tests. The variable definitions are: ACCT = Dichotomous variable equal to 1 if student is an accounting major and 0 otherwise; ACCTGPA = Grade point average in prior accounting classes taken (4.0 basis); LOAD = Current semester course load; WORKEXP = Dichotomous variable equal to 1 if student has accounting work experience and 0 otherwise; ABILITY = Student self-reported ability relative to the accounting cycle; GRADE = Student self-reported expectation of the final course grade; TEST = Grade posted by student on the first Intermediate I exam. The standard errors are reported in the parentheses under the coefficients.

Table 5
The Relation between (Performance) TEST and (Self Efficacy) ABILITY - Second-Stage[a]

$TEST = \alpha + \beta_1 GENDER + B_2 AGE + B_3 ACCT + B_4 CUMGPA + B_5 LOAD + B_6 WORKEXP + B_7 \widehat{ABILITY} + \epsilon$

Panel A: Full Sample ((N=72)

Independent Variables	Model 1	Model 2	Model 3	Model 4
Intercept	53.21 *	-8.39	-13.03	-13.92
	(15.60)	(21.27)	(27.80)	(27.83)
GENDER	-3.48	2.15	2.57	21.19
	(7.18)	(6.83)	(6.70)	(6.72)
AGE	0.22	0.49	0.98	1.03
	(0.62)	(0.57)	(0.63)	(0.63)
ACCT		11.65	13.01 **	12.94
		(7.35)	(7.57)	(7.57) **
CUMGPA		15.53 *	17.16	17.18 *
		(4.55)	(4.52)	(4.52)
LOAD			-2.19	-2.16
			(3.54)	(3.54)
WORKEXP			-18.38	-18.62
			(8.67) *	(8.67) *
$\widehat{ABILITY}$				0.34
				(0.35)
Adjusted R Squares	-2.40%	15%	18%	18%

Panel B: Reduced Sample ((N=65)

Independent Variables	Model 1	Model 2	Model 3	Model 4
Intercept	54.30 *	5.59	17.34	16.66
	(13.04)	(18.28)	(23.66)	(23.64)
GENDER	3.02	6.54	6.05	5.75
	(6.09)	(5.89)	(5.75)	(5.75)
AGE	0.26	0.48	0.73	0.77
	(0.52)	(0.48)	(0.52)	(0.52)
ACCT		6.94	6.14	6.08
		(6.65)	(6.88)	(6.87)
CUMGPA		12.78 *	14.07 *	13.94 *
		(3.91)	(3.84)	(3.84)
LOAD			-4.32	-4.28
			(2.99)	(2.99)
WORKEXP			-12.15	-12.40
			(7.56)	(7.55)
$\widehat{ABILITY}$				0.31
				(0.29)
Adjusted R Squares	-2.34%	13%	17%	17%

a This table reports the results of regressing student performance on a series of independent variables. Panel A reports based on all students enrolled at the time of the first Intermediate I exam. Panel B reports based on all students enrolled at the time of the first Intermediate I exam who actually took the exam. Standard errors are reported in the parentheses. *, ** denote statistical significance at the 0.10 and 0.05 levels for two tailed tests. The variable definitions are: GENDER = Dichotomous variable equal to 1 if student is a male and 0 otherwise; AGE = Age of student; ACCT = Dichotomous variable equal to 1 if student is an accounting major and 0 otherwise; CUMGPA = Cumulative grade point average at the start of the semester in which Intermediate I was taken (4.0 basis); WORKEXP = Dichotomous variable equal to 1 if student has accounting work experience and 0 otherwise; $\widehat{ABILITY}$ =Residuals associated with regressing student self-reported ability relative to the accounting cycle on certain student characteristics (see Table 4) ; TEST = Grade posted by student on the first Intermediate I exam. The standard errors are reported in the parentheses under the coefficients.

Table 6
The Relation between (Performance) TEST and (Self Efficacy) GRADE-Second Stage [a]

$TEST = \alpha + \beta_1 GENDER + B_2 AGE + B_3 ACCT + B_4 CUMGPA + B_5 LOAD + B_6 WORKEXP + B_7 \widehat{GRADE} + \epsilon$

Panel A: Full Sample (N=72)

Independent Variables	Model 1	Model 2	Model 3	Model 4
Intercept	53.21*	-8.34	-13.03	-16.03
	(15.60)	(2.28)	(27.80)	(25.93)
GENDER	-3.48	2.15	2.56	3.74
	(7.18)	(6.82)	(6.69)	(6.26)
AGE	0.22	0.49	0.98	1.15 **
	(0.62)	(0.57)	(0.62)	(0.59)
ACCT		11.64	13.01 **	13.88 **
		(7.35)	(7.57)	(7.06)
CUMGPA		15.53 *	17.16	15.85 *
		(4.55)	(4.52) *	(4.23)
LOAD			-2.19	-1.78
			(3.54)	(3.31)
WORKEXP			-18.38 *	-19.28 *
			(8.66)	(8.08)
$\widehat{GRADE}$				16.47 *
				(5.02)
Adjusted R Squares	-2.4%	14%	18%	29%

Panel A: Reduced Sample (N=65)

Independent Variables	Model 1	Model 2	Model 3	Model 4
Intercept	54.29 *	5.59	17.34	15.27
	(13.04)	(18.28)	(23.66)	(23.21)
GENDER	3.03	6.54	6.05	6.65
	(6.09)	(5.89)	(5.75)	(5.64)
AGE	0.27	0.48	0.73	0.85
	(0.52)	(0.48)	(0.52)	(0.52)
ACCT		6.94	6.14	6.60
		(6.65)	(6.88)	(6.75)
CUMGPA		12.78 *	14.07 *	13.29 *
		(3.91)	(3.84)	(3.79)
LOAD			-4.33	-4.09
			(2.99)	(2.93)
WORKEXP			-12.15	-12.81 **
			(7.56)	(7.42)
$\widehat{GRADE}$				8.97 **
				(4.85)
Adjusted R Squares	-2.4%	13%	17%	21%

a This table reports the results of regressing student performance on a series of independent variables. Panel A reports based on all students enrolled at the time of the first Intermediate I exam. Panel B reports based on all students enrolled at the time of the first Intermediate I exam who actually took the exam. Standard errors are reported in the parentheses. *, ** denote statistical significance at the 0.10 and 0.05 levels for two tailed tests.

The variable definitions are: GENDER = Dichotomous variable equal to 1 if student is a male and 0 otherwise; AGE = Age of student; ACCT = Dichotomous variable equal to 1 if student is an accounting major and 0 otherwise; CUMGPA = Cumulative grade point average at the start of the semester in which Intermediate I was taken (4.0 basis); WORKEXP = Dichotomous variable equal to 1 if student has accounting work experience and 0 otherwise; $\widehat{GRADE}$ = Residuals associated with regressing student's self-reported expectation of final course grade on certain student characteristics (see Table 4); TEST = Grade posted by student on the first Intermediate I exam. The standard errors are reported in the parentheses under the coefficients.