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RESEARCH ARTICLE

An Analysis of Student Perceptions of Introductory Accounting Classes

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Abstract

We identified whether relationships exist between the initial and final perceptions ofintroductory accounting classes for students inAccounting, Business Administration, and Economics majors. Studies in education and psychology show howtheself-efficacy andself-determination theoriescan explain student perceptions, motivation and performance. These studies also assertthat success at the beginning of a course can condition performance throughout the remainder of the course.Our sample consisted of 145 students in Accounting, Business Administration and Economics majors at a public Brazilian university. Data was analyzed by Wilcoxon and Mann-Whitney tests and canonical and multiple regression. We found that students in all three majors had positive initial perceptions of introductory classes and that students in accounting majors were the most optimistic. Accounting students also saw introductory accounting classes as more relevant to their academic and professional performance than did Business Administrationand Economics students. Additionally, our findings suggest that expected grades, perceived difficulty, and motivation affectacademic performance in introductory accounting classes. Based on the results of our study and the situation in Brazil where students must choose majors at the time of enrollment, we inferred that institutions of higher education can improve student performance by using strategies that reduce the difficulty of the teaching/learning process, improve student motivation, and increase student awareness of the relevance of introductory accounting classes for their education and profession.

Keywords: *Academic performance, Introductory accounting, Motivation, Student perceptions.*

Introduction

The Accounting Education Change Commission (AECC) identified the first year of accounting classes as a critical educational component for not only accounting majors but for all business majors [1,2]. Williams [3] commented that the first accounting class is not only important for students entering accounting professions but for all professions that use accounting information. Several studies have investigated the factors affecting student performance inintroductory accounting classes [4-12].

Bernardi and Bean [13] asserted that most students with above-average performance in introductory accounting classes frequently acquired better jobs after graduating and generally performed better throughout their education. These authors associated the abilities, skills and work ethics learned in these introductoryclasses with performance in subsequent classes. Therefore, evaluating academic performance, especially in introductory accounting classes, is relevant given its potential to influence the education of future professionals.

Academic performance can be influenced by several variables. These variables have been grouped into three categories: faculty, institution and students [14,15,16]. Education, institutional facilities (e.g. libraries and classrooms), and the way teaching is organized can influence student performance (Leal, Miranda and Carmo, 2013). Student attributes such as background, time managementskills, motivation, and other demographic, behavioral and psychological variables can also influence academic performance [16].

Student motivation and optimism can also affect the learning process [17]. The self-efficacy theory tries to explain this influence through the concepts of self-efficacy. Theseconceptsrepresent expectations and convictions in ones abilities to taketheactions needed to attain a certain level of performance [18]. The processimpliesself evaluation, a perception of and a belief in ones intelligence, abilities and knowledge. Thus, the self-efficacy theorycan contribute to academic resultssince it not only takes into consideration anindividual's capacity for self-determinationbut also environmental influences [19].

The self-determination theory also discusses intrinsic and extrinsic aspects of motivation and asserts that an individual possesses personal and internal attributes that derive satisfaction from completing activities and that the individual can also be motivated by external sources to obtain positive outcomes. An intrinsically motivated student has a greater chance of achieving strong academic performance [20].

Optimism is linked to the concepts of self-efficacy and self-determination [21]. Researchers on this subject state that low levels of optimism lead to poorer academic performance. Bandeira et al.[22] argued that past situations or events influence expectations of future events. Thus, according to these authors, negative events have internal causes (intrinsic motivation) related to pessimism, whereas optimism is correlated to other concepts (self-esteem, locus of control and self-efficacy).

Geiger and Ogilby [9] and Mandilas, Kourtidis and Petasakis [11] identified that student perceptions of introductory accounting classes can affect performance in these subjects. Geiger and Ogilby [9] and Mandilas, Kourtidis and Petasakis [11] used the same questionnaire in different countries to show that student perceptions of introductory accounting classes affectperformance in these classes and may even affect choice of profession. These authors also found that students majoring in accounting had more positive perceptions of introductory accounting classes than did students in related fields.

In Brazil, university majors are usually chosen towards the end of adolescence. This can be a difficult stage in life to make a decision that requires strong social support and that conforms with personal expectations, desires, and potential [12]. Nevertheless, there are indications that the process of choosing a major is not strongly supported, and that this may be one of the reasons students leave majors in Business Administration and Accounting.

According to Dias; Theóphilo; Lopes 63% of the students who left the accounting major at a Brazilian public university (2004-2008), claimed to have quit because they had made a poor decision when choosing their major. Cunha, Nascimento and Durso state that the main reason for students to leave a major is a lack of motivation due to an inappropriate choice of major.These authors affirm that an improper choice of major can result in dissapointment, which in turn can lead to a lack of motivation.

Higher education in Brazil differs from higher education in North America and Greece [9,11] in that students need to choose and take classes in their major from the moment they start their university education. In the United States for example, business students start their education by studying subjects that are common to all business majors and only choose a specific major after this initial phase has been completed. Thus, introductory accounting classes in Brazil are adapted to the needs of each specific major. For example, classes for Accounting majors focus more on producing economic-financial information, whereas classes for Business Administration and Economics majors are focused more on interpreting and dealing with such information.

Williams [3] believes that introductory accounting classes will continue to be a relevant factor for students considering Accounting majors. Moreover, these subjects will continue to be essential for not only students in Accounting and Business Administration, but for an increasing number of students from other courses. Accordingly, it is aropriate to investigate the factors that affect student performance in Accounting and related majorswho take introductory accounting classes, since their performance may be influenced by their perceptions and expectations of various aspects of theseclasses [23,24,22].

Therefore, our objective was to identify whether a relationship exists between the initial and final perceptions of Accounting, Business Administration and Economics students in introductory accounting classes and their performance. Student performance was measured by final grades in the subjects. Perception was identified using a tool developed by Geiger and Ogilby [9].The sample consisted of 145 students in introductory classes during the second semester, 2012 at a public Brazilian university. Identifying how students feel about introductory accounting disciplines is recommended for two main reasons.

First, the information may provide a better understanding of course content and the teaching/learning process and therebyhelp teachers focus the educational process since. Second, students may benefit from this improved focus by receiving better grounding in introductory subjects, which may help them to become better qualified professionals. Better professional qualifications, in turn, can improve the image of a professional in the eyes of employers, society and other accounting

professionals. Additionally, because this research contributes to information from a Brazilian perspective, it may prompt reflections over differences between educational models in Brazil and other countries.The results of this study and a review of the literature indicate that even though majors must be chosen at enrollment time in Brazil, other factors such as infrastructure, motivation, teacher profiles and methodologies can influence subsequent student performance and whether students remain in a major.

This study has six sections: an introduction, theoretical background, hypotheses, methodology, results and final considerations.

Literature Review

In this section, we present the theoretical aspects of the self-eficacy and self-determination theories and their influence on the perception, motivation and performance of students in introductory accounting classes. We also discuss previous studies on introductory accounting classes and factors that may affect student performance.

Self-eficacy and Self-determination Theories

Our study is based on the premise that student perceptions ofintroductory accounting classes can influence and perhaps explain academic performance. A literature review establishes the relationships between the self-eficacy and self-determination theories and the objectives of this study because they contribute to our understanding of the factors related to motivation and the results of the educational process.

Motivation is essential for education because motivated students learn more easily [25]. Oliveira et al. [26] showed the relevance of understanding student needs given that a lack of motivation results in negative factors such as emotional stress, boredom, fatigue and poor learning.
The self-determination theory shows that motivation is key to all levels of the teaching-learning process [20,27,16]. Accordingly, Vroom's [28] Motivation Theory was modeled by Porter and Lawler with two aspects: intrisic motivation and extrinsic motivation.

For Siqueira and Wechsler [29], intrinsic motivation is when students gain pleasure and satisfaction from performing activities by themselves simply because the activities are enjoyable and interesting. According to the authors, extrinisic motivation is perceived when students are motivated to perform activities by external rewards and recognition. Thus, according to Lens, Matos and Vansteenkiste [27] motivation impacts and is impacted by factors such as motives, reasons, abilities, interests, expectations, prospects, and other environmental influences.

Guimarães and Boruchovitch [20] state that a perception of success or competence in a previous activity is one of the factors that may increase intrinsic motivation. Thus, webelieve that strong performance in introductory accounting classes can promote student autonomy in a way that will lead to intrinsic motivation. From another perspective, the environment and the teacher can simultaneously influence student motivation.

According to Bzuneck [30] self-efficacy beliefs are expectations related to the self or "personal perceptions of one's own intelligence, skills, knowledge, etc., which are represented by the term capacities." These refer to a strong belief in one's capacity to work towards a certain degree of pre-determined or expected performance. These ideas are also strongly linked to studies on motivation because according to Bandura [31,19,32] self-eficacy influences motivation by encouraging people to act in way that allowsthem to visualize the course of action, resources, and efforts needed to reach their objectives.

Bandura [31] identifies four factors based on self-efficacy: successful experiences, vicarious experiences, verbal persuasion and physiological states. Successful experiences are the most important sources of self-efficacy because they represent previous experiences in similar activities with potentially positive and negative effects. In other words, previous success in a task builds the belief that future occurrences will also be successful [33]. Therefore, studying student perceptions and performance at the beginning of a class can show whether positive or negative beliefs are being constructed.

Beliefs of self-efficacy can also be produced through vicarious experiences that occur when the success of a colleague motivates a student to start an activity. Therefore, the personal attributes of these individuals must be considered. Verbal persuasion can also promote self-efficacy through positive feedback from professors or othersregarding abilities, competence, etc. Physiological states related to the health of an indivudual such as stress or anxiety also can affect beliefs of self-efficacy.

The perceptions analyzed in our research are related to self-efficacy because motivated students

believe in their abilities and are able to create plans of action to consistently achieve academic objectives throughout their education.

Fig. 1 summarizes how these theories are related to and support the objectives of this study. The figure also establishes linksbetween the factors that generate self-efficacy beliefs and success in introductory accounting subjects that can produce self-efficacy beliefs, which in turn can positively affect performance throughout the entire degree. This type of motivation can also arise from aspects of intrinsic and extrinsic motivation.

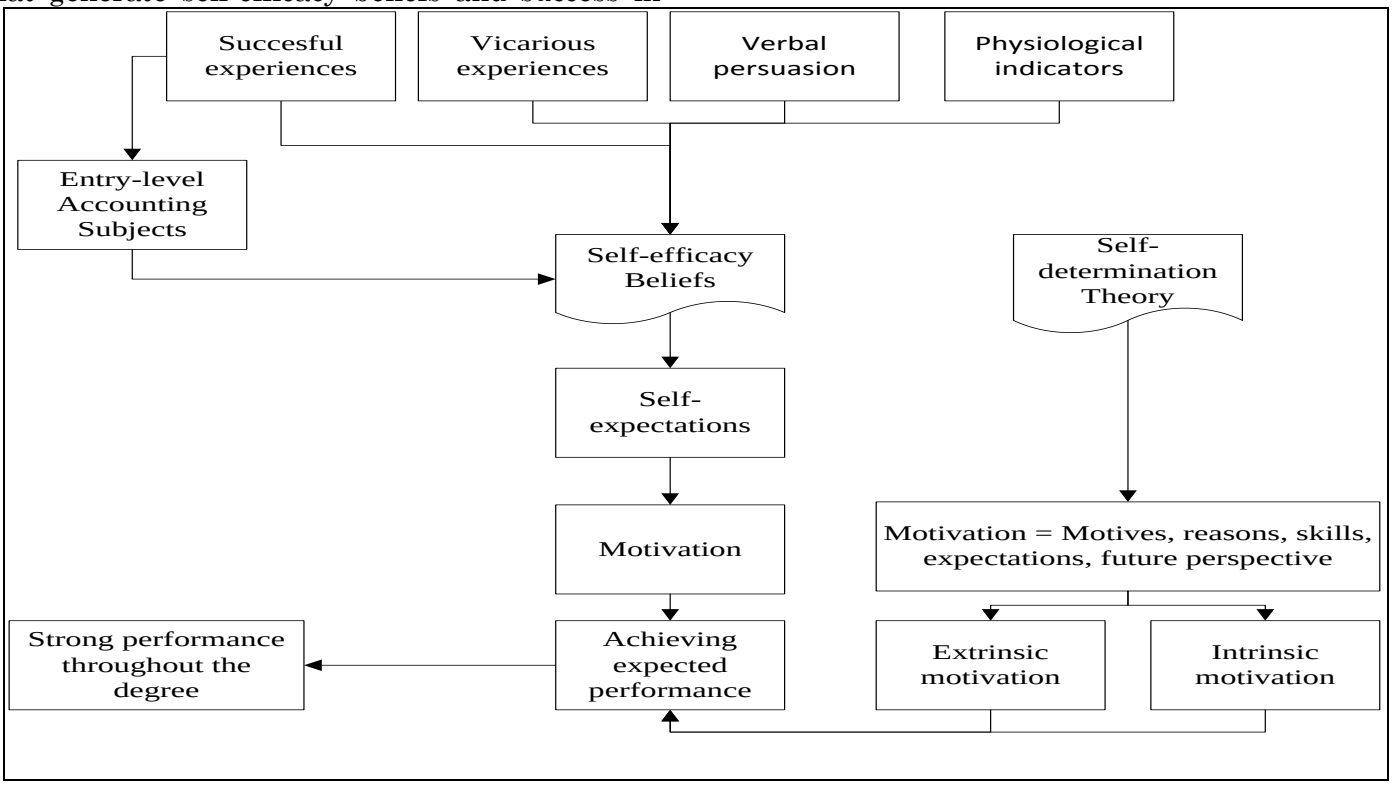

Fig.1:Relationships between the self-determination and self-efficacy theories and academic performance
Source: Prepared by authors.

The following sections will present previous studies on additional factors impacting student performance in and perceptions of introductory accounting classes.

Other Factors that Affect Student Performance

International and Brazilian studies have researched introductory accounting classes [24,9,34,35,12]. These studies have investigated whether and how student perceptions of introductoryaccounting classes relate to academic performance throughout the rest of the accounting degree.Additionally, they examine whether initial and final student perceptions are related to performance in these classes, and compare whether the perceptions of students and teachers differ by teaching methodology.

Bernardi and Bean [24] and Danko, Duke and Franz [23] sought to use the performance of students in introductory accounting classes as a basis for estimating the performance of these students in subsequent classes. The authors found thatstudent performance in an accounting degree was influenced by performance in the introductory accounting disciplines, suggesting that the prerequisite system is appropriate. Similarly, BernardiandBean [13] found that performance in the first intermediate accounting class explains approximately 50% of the performance in the second intermediate accounting class.

Alves, CorrarandSlomski [36] determined whether teaching and other educational resources such as equipment and specialized study environments affected student performance in undergraduate accounting courses. They achieved this by examining results from the Brazilian National Course Examinations (ExameNacional de Cursos). These researchers found that teachers had an important impact on the performance of their students in three main aspects: subject area, teaching techniques, and educational resources. Computer access was also significantly important, whereas libraries were not as significant. The researchers concluded that the government needs to consider greater investments in educational resources, new technical-pedagogical concepts,

and most importantly, teacher training. Steenkamp, Baardand Frick [37] identified factors associated with successful teaching in initial accounting modules, including professional practice, classroom attendance, homework completion and personal motivation. The authors also commented on other factors affecting student success such as reading ability, extroversion/introversion, whether the students were studying the module for the first time, and whether the students had part-time jobs.

Student Perceptioons of Introductory Accounting Classes

The literature demonstrates that perception plays an important role in choosing a career. Inman, WenzlerandWickert [38] stated thatstudents are influenced by their perceptions when choosing an area of study.Hermanson, Hermanson and Ivancevich [39] identified that student perceptions of accounting and related areas influence their decisions to either prioritize or not the study of accounting. According to these authors, students in accounting majors have a more positive perspective of accounting jobs and the social status of the profession than do students in Business Administration and Economics. For these researchers, introductory accounting classes can attract good students to accounting majors, suggesting that these higher quality students could also be retained [40].

Some studies attempted to identify teacher perceptions [6] or student perceptions [41,42,43] of introductory accounting classes. Similarly, Heiat and Brown [35] discovered that students choose to stay in Accounting majors because they are genuinely interested in the subject.

Cohen and Hanno [43] attempted to predict and explain why students choose Accountingmajorsand discovered that students reject the subject because they perceive it as boring. Chen, Jones and McIntyre ascertained that both students in accounting majors and students in Business Administration and Economics did not value the first year of the accounting degree. The results of this research suggest that these students were not convinced that the accounting classeswould help them succeed in their careers. Germanou, Hassall and Tournas [44] compared accounting students from Malaysia and England and specifically looked at why students chose the accounting profession, and the association between student perceptions and their choice an accounting career.Gassneret al. [45] studied Accounting students in federal universities in the South of Brazil and analyzed differences between teaching perceptions and preferences regarding educational structure and support, organization of the subject, social-emotional environment, and assessment strategies. The paper was written to improve student education and reduce weaknesses in teachers and teaching methodologies. Improving these two educational areas can result in better professionals and more conscientious citizens. The results show that students want teachers to explain subjects more orally and didactically and less theoretically.

Geiger and Ogilby [9] investigated the perceptions of North American students regarding the first year of study in accounting and how these perceptions affect their choice of profession. Mandilas, Kourtidis and Petasakis [11] applied atool developed by Geiger and Ogilby [9] to a group of 120 Greek students. The authors specifically examined the relationship between changes in perception, final grades and choice of profession. The authors found that the choice of the accounting profession depended on academic performance in the first year of the degree. Therefore, students who performed better in introductory accounting classes chose to major in Accounting.

Geiger and Ogilby's [9] tool consists of ten assertions related to student perceptions of introductory accounting classes. In general, students are questioned at the beginning of a semester about the relevance of the class for there degree and career, whether taking the class will be rewarding, whether the studentswill appreciate taking the class, whether the class is difficult and/or boring, whether the students believe they can learn effectively, whether the professor will influence what is learned, whether the students will spend time studying, and expected final grades. The same questionnaire, with questions phrased in the past tense, is conducted at the end of the to determine if the initial perceptions changed during the semester. Additionally, the grades expected at the beginning of the semester are compared to the actual final grades.

Thus, the questionnaire involves aspects of the self-efficacy theory and intrinsic motivation as well as the extrinsic motivation of the self-determination theory. For example, students who believe they have the skills and abilities needed to learn successfully, students with previous successful experiences with the content of the introductoryaccounting classes, and students who are motivated to learn and believe they are able to

learn will have greater chances for success in classes. Grades are an example of extrinsic motivation. However, grades also involve aspects of instrinsec motivation since, according to the authors, students who believe they can get high grades are actually able to do so.

Therefore, introductory accounting classes are important for student achievement, progress in subsequentsubjects in the degree, choosing a major (when this choice occurs after the first year of study) and choosing a profession. Moreover, factors such as initial perception, expectations, teacher skills, and school facilities influence student performance.

Hypotheses

We tested four hypotheses to investigate whether student perceptions in Brazil, where students choose their degrees before entering university, are the same as in countries where students choose their majors after taking common introductory classes, including introductory accounting classes.Two questionnaires created by Geiger and Ogilby [9] were used to identify initial and final student perceptions.

Geiger and Ogilby [9] andMandilas, Kourtidis and Petasakis [11] found that students in accounting majors had more optimistic initial impressions of introductory accounting classes than did students in other majors. In Brazil, introductory accounting classes within the accounting major focus on teaching students to prepare and analyze economic-financial reports. The focus of these same classes in the Business Administration and Economics degrees is on the handling and interpretation of these reports.According to these authors,students in accounting majors feel more strongly than students in related majors that introductory accounting classes are more important for their future academic and professional success. In Brazil, introductory accounting classes within the accounting major focus on teaching students to prepare and analyze economic-financial reports. The focus of these same classes in the Business Administration and Economics degrees is on the handling and interpretation of thesereports.Therefore, the first hypothesis is that:

H1 - Students in accounting majors have a more optimistic perception of introductory accounting classes than do students in related majors (Business Management and Economics).

The second hypothesis is tested by confronting each of the initial and final perceptions.Geiger and Ogilby's [9] results suggest thatall student perceptions changed during the semester, except their perceptions of their professor. In other words, their initial and final perceptions were significantly different. Conversely, Mandilas, Kourtidis and Petasakis [11] showed that only two of the ten variables (motivation and grade) changed during the semester.

After entering the university, students meet upperclassmen and learn their opinions on the university, the major, subjects, and professors. Before enrollment or at the beginning of each semester, most students try to learn about the professor, difficulty, and relevance of a class for their success in future classes and profession. Students use this information, usually garnered from upperclassmen, to create their own perceptions of the class, professor, and grade expectations. The expected grade also depends on a student's self image, previous performance in related subjects, and other factors related to intrinsic motivation.
Our second hypeothesis explores this question:

H2 - Student perceptions of introductory accounting classes in Accounting, Business Administration and Economics degrees change during a given semester.

This perspective considers that students in accounting degrees may have initial perceptions of introductory accounting classes that differ from those of students in related degrees. These differences could also appear in final perceptions.

Mandilas, Kourtidis and Petasakis [11] found that initial student perceptions ofintroductory accounting subjects regarding variables such as "course relevance," "apreciation," "motivation," "educational expectations," and "expected grades" are significantly different between students in accounting degrees and other degrees. Regarding final perceptions, the authors found significant differences in the following variables (in addition to the variables listed for initial perceptions): "degree and career relevance," "difficulty," and "boredom." Therefore the third hypothesis is:

H3 - The initial and final perceptions of introductory accounting subjects from students in accounting majors are different from those of students in Business Administration and Economics.

Geiger and Ogilby [9] andMandilas, Kourtidis and Petasakis [11] found that initial student perceptions of introductory accounting

subjectscan affect the performance of these students duringthe classes. Our study measures performance using the final grades at the end of a semester. Therefore, hypotheses H4 and H5 are:

H4 - Initial perceptions of introductory accounting classes affect final perceptions for students in Accounting, Business Administration and Economics.

H5 - Initial and final perceptions of introductory accounting classes affect final grades for students in Accounting, Business Administration and Economics.

Research Procedure

Our study is descriptive with a quantitative aroach. Initial and final student perceptions were acquired through two questionnaires created byGeiger and Ogilby [9] and also used by Mandilas, Kourtidis and Petasakis [11]. The first questionnaire consisted of eleven questions about the students' initial perceptions of the introductory accounting subjects (Table 1). The second questionnaire consisted of ten questions about the students' final perceptions of the introductory accounting subjects (Table 1).

Table1: Initial and final perceptions

Variable		Questionnaire 1 –Initial Perceptions	Questionnaire 2 – Final Perceptions
Major	MAJ	1. This class will help me perform well in my degree.	1. This class will help me perform well in my degree.
Career	CAR	2. This class will help me perform well in my career.	2. This class will help me perform well in my career.
Reward	REW	3. Performing well in this class will be personally rewarding.	3. Performing well in this class was personally rewarding.
Time	TIME	4. I plan to spend more time on this class than I do on other classes this semester.	4. I spent more time on this class than I did on other classes this semester.
Appreciation	APREC	5. I am looking forward to this class.	5. I appreciatedtaking this class.
Difficulty	DIF	6. This class will be difficult.	6. This class was difficult.
Boredom	BOR	7. This class will be boring.	7. This class was boring.
Motivation	MOT	8. I am highly motivated to do well in this class.	8. I was highly motivated to do well in this class.
Learning	LEARN	9. I expect to learn a lot in this class.	9. I expected to learn a lot in this class.
Professor	PROF	10. The professor will affect my opinion about the use of this class.	10. The professor affected my opinion about the use of this class.
Grade		11. What grade do you expect to get in this class? ---------- points.	Final grade

Source: Prepared by authors.

For each of the first ten questions in the questionnaires on initial and final perceptions, the students were to rate perceived importance on a scale from 1 (not important) to 10 (very important). The expected grade in question 11 (initial perceptions) is a continuous variable for which the students were to record a grade from 0 to 10. The final grade (questionnaire 2) was obtained from the coordinator of each degree.

The eleven question in the questionnaire on initial perceptions and the ten questions from the questionnaire on final perceptions (Table 1) were originally in English in the studies of Geiger and Ogilby [9] and Mandilas, Kourtidis and Petasakis [11]. These questions were translated to Portuguese by a translator of English origin. After the translation, a pretest was conducted to validate the questionnaires. Ten students in Accounting majors and five students in Business Administration majors participated in the pretest. Their suggestions focussed mainly on question form and typing errors and were therefore checked and included into the questionnaires.

Sample Selection

The sample consisted of students taking introductory accounting classes within Accounting, Business Administration, and Economics degrees at a Brazilian public university during the second semester of 2012 (Table 2).Two introductory accounting classes were offered in the Accounting curriculum (AC). The first was offered during the first semester (Introductory Accounting I – Int-I) and the second during the second semester (Introductory Accounting II – Int-II).In the Business Administration (BA) curriculum the introductory accounting classes were offered in the third (Accounting I – Acct-I) and fourth (Accounting II – Acct-II) semesters. The Economics (ECO) curriculum offered only one introductory accounting course (Accounting and Balance Sheet Analysis – AandBA). Each of the accounting classes in the AC and BA curricula were available as both day and evening classes; however, the accounting class in the ECO curriculum was only offered during the day.

Table 2: Classes analyzed

Major	Subject	Class	Semester
Accounting (AC)	Int-I	Day and Evening	1st
	Int-II	Day and Evening	2nd
Business Administration (BA)	Acct-I	Day and Eveningt	3rd
	Acct-II	Day and Evening	4th
Economics (ECO)	AandBA	Day	1st

Source: Prepared by authors.

The introductory accounting classes offered in AC, BA and ECO are mandatory; however, they do not require prerequisites, nor are they prerequisites for any other classes in these majors. In addition to these introductory accounting classes, other elective accounting classes are offered to BA and ECO majors, such as analysis of financial statements and cost analysis.

It should be noted that each of these five introductory accounting classes (Table 2) was given by a different professor. All five professors hold degrees in Accounting. Professors of accounting classes are chosen by the dean of the AC department based on teacher availablilty, background, and interest.

The printed questionnaires were composed of closed questions and given in person during the first and last weeks of the second semester, 2012. Students participating in undergraduate research projects wher were not related in any way to the introductory accounting classes, explained the content and importance of research and invited students to voluntarily participate in answering questions after signing a consent form. The questionnaires were always applied during the regular class times (Table 2) and professors were not present to avoid inhibiting the students. The professors were contacted in advance to determine the best time to apply the questionnaire (either at the beginning or end of a class).

The number of students in the introductory accounting classes of AC, and the combined BA and ECO were 180 and 176, respectively (Table 3). However, only 98 (54%) of the students in AC and 47(27%) of the students in BA and ECO responded to both questionnaires (initial perceptions and final perceptions).

Some professors finished the semester before the last week of class, making it impossible for some students to respond to the questionnaire on final perceptions. Additionally, some students left these classes, which further reduced participation in the questionnaire on final perceptions.

Therefore, the total sample consisted of 145 AC, BA, and ECO students who took introductory accounting classes during the semester.

Table 3: Sample group by course

Sample composition	AC				BA		ECO	BA+ECO		AC + BA + ECO	
	Int I	Int II	Total	%	Acct I	Acct II	AandBA	No.	%	No.	%
Number of students in 2nd semester classes, 2012	85	95	180	100%	57	91	28	176	100%	356	100%
(-) Number of students who did not respond to the questionnaire	17	17	34	19%	19	33	1	53	30%	87	24%
(-) Students who only responded to the questionnaire on initial perceptions	10	12	22	12%	0	10	1	11	6%	33	9%
(-) Students who only responded to the questionnaire on final perceptions	18	8	26	14%	20	28	17	65	37%	91	26%
(=) Sample–Students responding to both questionnaires (initial and final perceptions)	40	58	98	54%	18	20	9	47	27%	145	41%

Source: Prepared by authors.

Statistical Tests

Depending on the normality of the variables, the first three hypotheses were evaluated by either parametric (Student's t-test) or nonparametric

(Wilcoxon and Mann-Whitney) tests of differences between means. The *Kolmogorov-Smirnov* (*K-S*) and *Shapiro-Wilk* (*S-W*) tests were used to determine if the variables were normally distributed.

Two statistical dependency techniques (canonical and multiple regression) were used to test the H4 hypothesis. Canonical correlation makes it possible to evaluate the relationship between multiple independent variables (metric or non-

metric) and multiple dependent variables (metric or non-metric) [46].

The objective of analyzing canonical correlations is to summarize information from each linear combination of response variables.
Our canonical regression model is specified in Equation 1.

Equation 1:

$$MAJ_{pfi} + CAR_{pf} + REW_{pf} + TIME_{pf} + APREC_{pf} + DIF_{pf} + BOR_{pf} + MOT_{pf} + LEARN_{pf} + PROF_{pf} + FG_{pf} = \beta_0 + \beta_1 MAJ_{pi} + \beta_2 CAR_{pi} + \beta_3 REW_{pi} + \beta_4 TIME_{pi} + \beta_5 APREC_{pi} + \beta_6 DIF_{pi} + \beta_7 BOR_{pi} + \beta_8 MOT_{pi} + \beta_9 LEARN_{pi} + \beta_{10} PROF_{pi} + \beta_4 IG_{pi} + \varepsilon_{it}$$

The eleven dependent variables in Equation 1 represent the final perceptions of the students in introductory accounting courses in AC, BA, and ECO (Table 1). The independent variables are the eleven variables representing initial perceptions (Table 1).

Multiple regression analysis was used to identifiy the relationship between the initial student perceptions of the introductory accounting classes and their final grades in these classes. Equations 2 and 3 specify the multiple regression models.

Equation 2:

$$FG_{pf} = \beta_0 + \beta_1 MAJ + \beta_2 CAR_{pi} + \beta_3 REW_{pi} + \beta_4 TIME_{pi} + \beta_5 APREC_{pi} + \beta_6 DIF_{pi} + \beta_7 BOR_{pi} + \beta_8 MOT_{pi} + \beta_9 LEARN_{pi} + \beta_{10} PROF_{pi} + \beta_4 NI_{pi} + \varepsilon_{it}$$

Equation 3:

$$FG_{pf} = \beta_0 + \beta_1 MAJ_{pf} + \beta_2 CAR_{pf} + \beta_3 REW_{pf} + \beta_4 TIME_{pf} + \beta_5 APREC_{pf} + \beta_6 DIF_{pf} + \beta_7 BOR_{pf} + \beta_8 MOT_{pf} + \beta_9 LEARN_{pf} + \beta_{10} PROF_{pf} + \varepsilon_{it}$$

The model in Equation 2 identifies the relationship between initial perceptions (explanatory variables) and student performance (FG – dependent variable – final grade in the subject). Equation 3 models the relationship between performance (FG – final grade in the subject) and FP – final perception.

Equations 1, 2 and 3 were used to test the H4 hypothesis. In other words, they were used to test whether the initial perceptions of entry level accounting classes from students in AC, BA, and ECO affected their final perceptions and final grades.

Results

Table 4 shows the number of respondents separated by major, class, gender, semester, day/evening classes, andwhether this was the first time taking the class. Women predominated in AC (62%) and men predominated in BA and ECO (aroximately 60%). Approximately 94% of the applicants were taking the classes for the first time. The average age of the AC students was 20.3 and the combined average age of the BA and ECO students was 21. Students who reported that they were not in the same semester as the rest of their classmates and were taking the class for the first time were classified as “Others” in Table 4.

Before performing the mean comparison tests, it was necessary to first use the Kolmogorov-Smirnov and Shapiro-Wilk tests to identify whether the variables were normally distributed. The results rejected the normality hypothesis and it was therefore not possible to use the parametric test.

Table 4:Profile of respondents

Variables		AC				BA		ECO	BA+ECO		TOTALAC+BA+ECO	
		Int I	Int II	Total No.	%	Acct I	Acct II	A and BA	No.	%	No.	%
Gender	Feminine	27	34	61	62%	7	9	3	19	40%	80	55%
	Masculine	13	24	37	38%	11	11	6	28	60%	65	45%
	Total	40	58	98	100%	18	20	9	47	100%	145	100%
Age	Average	20.4	20.1	20.3		21.6	20.6	20.7	21.0		20.6	
Semester	first	40	0	40	41%	0	0	9	9	19%	49	34%
	second	0	48	48	49%	0	0	0	0	0%	48	33%
	third	0	2	2	2%	16	0	0	16	34%	18	12%
	fourth	0	0	0	0%	2	19	0	21	45%	21	14%
	fifth	0	2	2	2%	0	0	0	0	0%	2	1%
	seventh	0	2	2	2%	0	0	0	0	0%	2	1%
	Others	0	4	4	4%	0	1	0	1	2%	5	3%
	Total	40	58	98	100%	18	20	9	47	100%	145	100%
Class	Day	24	27	51	52%	9	10	9	28	60%	79	54%
	Evening	16	31	47	48%	9	10	0	19	40%	66	46%
	Total	40	58	98	100%	18	20	9	47	100%	145	100%
Taking the class for the 1st time	Yes	40	53	93	95%	18	18	8	44	94%	137	94%
	No	0	5	5	5%	0	0	0	0	0%	5	3%
	Others	0	0	0	0%	0	2	1	3	6%	3	2%
	Total	40	58	98	100%	18	20	9	47	100%	145	100%

Source: Prepared by authors.

The test that best fits the first two hypotheses was the Wilcoxon signed rank test since this test is recommended for testing ordinary or continuous variables that are not normally distributed [46]. This test analyzes paired data and takes into account the magnitude of the difference.

Table 5 summarizes the initial and final student perceptions of the introductory accounting classes in AC and the combined BA and ECO. The average initial and final responses in the first and last columns of Table 5 are greater than 5 on a scale of 1 to 10. The average of the "Boring" variable, which measures a negative perception of the subject, was lower than 5 for both initial and final perceptions. Therefore, it can be inferred that the respondents from AC, BA, and ECO had a positive initial perception of the introductory accounting classes.

Table 5: Means tests of initial and final perceptions

Variable	Accounting					Bus. Admin. and Economics					General				
	I	F	*z*	*p-value*		I	F	*z*	*p-value*		I	F	*z*	*p-value*	
Major	9.77	9.54	-1.00	0.316		8.05	7.48	-0.97	0.330		9.24	8.94	-1.49	0.136	
Career	9.67	9.54	-0.92	0.359		8.26	7.50	-0.86	0.389		9.18	8.96	-1.26	0.209	
Reward	9.24	8.04	-4.40	0.000	***	7.71	7.13	-0.19	0.849		8.80	7.88	-3.73	0.000	***
Time	6.78	7.47	-1.97	0.049	***	4.03	5.00	-2.73	0.006	***	5.85	6.78	-3.24	0.001	***
Appreciation	6.97	7.16	-1.14	0.255		5.55	6.67	-2.34	0.019	**	6.42	6.87	-2.20	0.028	***
Difficulty	6.81	7.36	-1.89	0.059	**	5.64	6.22	-2.87	0.004	***	6.29	7.17	-3.22	0.001	***
Boredom	3.48	4.57	-2.39	0.017	**	4.00	4.38	-2.07	0.038	**	3.65	4.68	-3.08	0.002	***
Motivation	8.43	6.95	-4.67	0.000	***	6.86	5.98	-0.84	0.403		7.89	6.72	-4.28	0.000	***
Learning	9.53	8.99	-3.00	0.003	***	8.07	7.68	-0.50	0.618		9.07	8.63	-2.57	0.010	***
Professor	6.68	6.91	-0.85	0.393		6.68	6.92	-1.77	0.078	*	6.62	7.08	-1.84	0.066	*
Grade	8.58	6.62	-7.07	0.000	***	8.42	6.64	-5.42	0.000	***	8.56	6.64	-8.82	0.000	***

Source: Prepared by authors..

Note: ***, ** and * denote statistical significance at 1%, 5% and 10%, respectively. *I*represents initial perceptions and *F* represents final perceptions. Results of the Wilcoxon testare represented by *z* and the *p-value*.

The first hypothesis is corroborated given that the students in ACdemonstrated more optimistic initial impressions of the introductory accounting classes than did the BA and ECO students (Table 5). These results are similar to those of Geiger and Ogilby [9] and Mandilas, Kourtidis and Petasakis [11]. One probable justification for these results may be that AC students believe that they will need the knowledge acquired in the introductory accounting classes for success subsequent accounting classes. The same may not happen for Economics students because, for

example, they have only one mandatory accounting class in their course curriculum.

The z and p-value columns in Table 5 show the results of the Wilcoxon means comparison test. All of the variables in the General column, except for major and career, show significantly different mean initial and final perceptions. The professor variable is significant at 10% whereas the other variables are significant at 1%. The variables for time spent on the subject, appreciation, difficulty, boredom, and teacher impact on the usefulness of the subject increased from initial to final perceptions. However, the variables for personal reward, motivation, learning expectations and grade decreased from initial to final perceptions.

The average final grades (6.62 in AC and 6.64 in BA and ECO) were significantly less than the expected final grades (8.58 and 8.42, respectively), showing that students expected the class to be easier. These results were confirmed by increases in the difficulty variable in AC (from 6.81 to 7.36) and BA and ECO (from 5.64 to 6.22). Thus, the second hypothesis is true, suggesting that student perceptions of introductory accounting classes in AC, BA and ECO change during the semester.

Our results are somewhat different from those of Geiger and Ogilby [9] and Mandilas, Kourtidis and Petasakis [11].Geiger and Ogilby [9] found significant differences (t-test) between initial and final perceptions in the variables representing major, reward, boredom, motivation, and grade.Conversely, Mandilas, Kourtidis and Petasakis [11],analyzing AC, BA and ECO as a group, only found differences (Wilcoxon) in initial and final perceptions for motivation and grade.

Note that reward, motivation, and learning were only significantly different, decreasing from initial to final perceptions, for AC students (Table 5), whereas the appreciation and professor means were only statistically different, increasing from initial to final perceptions, for the BA and ECO students
Table 6 shows the average initial and final perceptions of introductory accounting subjects in AC and the combined BA and ECO.

Table 6 also shows the results of the *Mann-Whitney* means comparison test of the initial perceptions of the two groups (group 1 – AC and group 2 – BA and ECO) and of their final perceptions. Average initial perceptions were significantly different (1% significance) between AC and the combined BA and ECO students for the major, career, reward, time, appreciation, difficulty, motivation, and learning variables. All of the variables that were significantly different in initial perceptions were also significantly different in final perceptions, with the exception of gratification and motivation.

Table 6: Means test of initial and final perceptions between majors

Variable	Initial Perceptions					Final Perceptions				
	AC	**BA/ECO**	***z***	***p-value***	**Sig.**	**AC**	**BA/ECO**	***z***	***p-value***	**Sig.**
Major	9.77	8.05	-7.20	0.000	***	9.54	7.48	-6.68	0.000	***
Career	9.67	8.26	-6.32	0.000	***	9.54	7.50	-6.45	0.000	***
Reward	9.24	7.71	-4.59	0.000	***	8.04	7.13	-1.13	0.260	
Time	6.78	4.03	-5.81	0.000	***	7.47	5.00	-4.25	0.000	***
Appreciation	6.97	5.55	-3.53	0.000	***	7.16	6.67	-2.08	0.038	**
Difficulty	6.81	5.64	-3.81	0.000	***	7.36	6.22	-1.77	0.077	*
Boredom	3.48	4.00	-1.23	0.219		4.57	4.38	-0.71	0.479	
Motivation	8.43	6.86	-4.12	0.000	***	6.95	5.98	-1.39	0.165	
Learning	9.53	8.07	-5.44	0.000	***	8.99	7.68	-3.62	0.000	***
Professor	6.68	6.68	-0.43	0.666		6.91	6.92	-1.11	0.268	
Grade	8.58	8.42	-0.83	0.404		6.62	6.64	-0.49	0.624	

Source: Prepared by authors.
Note: ***, ** and * denote statistical significance at 1%, 5% and 10%, respectively. ACrepresents the Accounting major and BA/ECO represents Business Administration and Economics. The results of the Mann-Whitney test are represented by *z* and the *p-value*.

The mean initial perceptions were similar for boredom, professor and expected grade (Table 6). Specifically, the mean initial perceptions of AC students at the beginning of the 2012 semester were:

- Expected to be helpful for continuing academic performance (9.77), helpful for career (9.67), and success in the class would be personally rewarding (9.24). These scores were higher than those of students in the combined BA/ECO group (8.05, 8.26 and 7.71, respectively).
- Expected to spend more time studying (AC: 6.78, BA/ECO: 4.03),
- Believed they would appreciate the class more (AC: 6.97, BA/ECO: 5.55),
- Thought the class would be more difficult (AC: 6.81, BA/ECO: 5.64),

- Felt more motivated (AC: 8.43, BA/ECO: 6.86), and expected to learn much more (AC: 9.53, BA/ECO: 8.07),
- Scores for how much the professor would affect student opinions on the usefulness of the class were the same (6.68).

Therefore, we inferred that at the beginning of the semester, AC students expected that introductory accounting classes would be more relevant to their academic and professional performance than did students in BA and ECO.

At the end of the semester, AC students believed much more strongly than did BA/ECO students that introductory accounting classes would help their future academic and professional performance. Furthermore, AC students perceived that: 1) they spent more time on the class, 2) they appreciated the class more, 3) the class was more difficult, 4) they learned more in the class than did students in BA/ECO. Conversely, the mean final perceptions of AC and BA/ECO students were similar for the reward, boredom, motivation, professor, and final grade variables.

Table 6 shows that the initial and final perceptions from students in the accounting major differed from those of students in BA and ECO, corroborating the third hypothesis.

Relationship between Initial and Final Perceptions

Table 7 shows the results of the statistical tests for significant canonical correlations. First, there are eleven canonical functions in this study (CF1 - CF11) because the number of canonical functions (CF) is the set with the lowest number of variables (Favero et al., 2009) and the number of dependent and independent variables is equal. A canonical correlation and R^2, F and redundancy statistics were calculated for each of these functions.

Table 7 : Statistical tests of canonical functions

Canonical function	Canonical correlation	R^2 canonical	F	Probability	Redundancy
CF1	0.663	0.440	121.000	0.000	11.841
CF2	0.575	0.330	100.000	0.000	3.399
CF3	0.471	0.221	81.000	0.011	1.958
CF4	0.432	0.186	64.000	0.072	1.734
CF5	0.411	0.169	49.000	0.252	1.379
CF6	0.298	0.089	36.000	0.667	0.596
CF7	0.240	0.058	25.000	0.745	0.347
CF8	0.229	0.053	16.000	0.709	0.259
CF9	0.168	0.028	9.000	0.773	0.174
CF10	0.124	0.015	4.000	0.724	0.094
CF11	0.028	0.001	1.000	0.756	0.005
					21.786
Multivariate significance tests					
Statistic	**Value**	**Aroximate*F***		**Probability**	
Wilks' Lambda	0.154	121.000		0.000	
Pillais' Trace	1.591	121.000		0.000	
Hotelling's Trace	2.256	121.000		0.000	

Source: Prepared by authors.

Canonical correlations reflect the strength of the relationship between each pair of canonical variables. R^2 is the square of the canonical correlation and reflects the variance in a canonical set that is explained by another canonical set (i.e. the variance shared by two canonical sets) (Fávero et al., 2009). The canonical correlation between initial and final perceptions in CF1 is 0.663 and R^2 is 0.440. Note that this correlation is highest for CF1 and lower for the other functions, showing that CF1 has the highest explanatory power among the variables used in the study (Table 7).

When analyzed separately, only the first three functions were significant at the 95% confidence level (probability of F = 0.000, 0.000 and 0.011, respectively). However, the multivariate Wilks Lambda, Pillais' Trace, and the Hotelling's Trace tests showedthatthefunctions were statistically significant as a group (probability < 0.05).

Because of regression, the redundancy index (Table 7) is similar to R^2 [46]. This index shows the percentage of variance in a set of variables that can be explained by variance in another set of variables (Hair et al, 2005). According to these authors, there is no recommended lowest acceptable level of redundancy. Consequently, total redundancy of the dependent and independent variables is 21.786%. In other words, the initial student perceptions of introductory

accounting classes influence 21.786% of the variance of their final perceptions with much of this variance generated by the first canonical function (11.841%).

The analysis of the results can continue given that the canonical relationship (F) is statistically significant and the canonical root (R^2) and the redundancy index are acceptable.

Table 8 shows the canonical loadings for the dependent and independent variables of the eleven canonical functions. Canonical loading reflects the bivariate relationship between a given variable and a canonical variable. In other words, the canonical loading of each variable reflects the variance of the shared variable in the canonical set. Therefore, the higher the coefficient, the greater the importance of the variable in the derivation of the canonical set.

Table 8: Loading between dependent and independent variables and canonical variables

Variable	Canonical charging										
	CF1	**CF2**	**CF3**	**CF4**	**CF5**	**CF6**	**CF7**	**CF8**	**CF9**	**CF10**	**CF11**
Dependent variables (Final perception)											
Course	**0.794**	-0.025	-0.402	0.358	0.045	0.038	0.220	-0.107	0.005	-0.072	0.106
Career	**0.864**	0.009	-0.207	0.004	0.059	-0.211	0.205	-0.179	0.088	0.132	0.251
Reward	**0.540**	0.286	0.033	0.488	-0.070	-0.301	0.203	0.137	0.177	0.439	0.084
Time	0.472	0.199	-0.079	-0.006	**0.777**	0.005	-0.172	-0.099	-0.014	0.156	-0.253
Appreciation	0.394	0.121	0.350	**0.487**	0.382	0.166	0.218	-0.158	0.229	0.003	0.415
Difficulty	0.004	0.133	-0.213	-0.310	0.036	-0.246	-0.200	-0.092	**0.646**	-0.464	-0.312
Boredom	-0.466	-0.011	-0.493	-0.377	0.204	-0.283	0.411	-0.092	**0.646**	-0.464	-0.312
Motivation	**0.390**	0.372	0.367	0.382	0.112	**-0.407**	0.052	-0.328	-0.332	-0.099	-0.140
Learning	**0.687**	0.390	-0.010	0.102	0.059	-0.027	0.323	0.372	-0.184	-0.258	-0.132
Professor	0.053	**0.822**	-0.350	-0.021	-0.235	0.182	-0.062	-0.250	0.147	-0.049	0.140
Final Grade	0.265	0.100	0.305	0.158	-0.155	**0.480**	0.363	-0.355	0.037	**0.367**	-0.392
Independent variables (initial perception)											
Course	**0.791**	-0.018	-0.402	0.033	-0.100	-0.030	-0.237	-0.111	0.011	0.043	-0.360
Career	**0.784**	-0.269	-0.024	-0.340	-0.230	0.234	-0.137	-0.195	-0.174	0.033	-0.032
Reward	**0.733**	0.310	-0.029	-0.163	-0.183	-0.064	0.050	0.517	0.037	-0.120	-0.125
Time	0.383	0.206	-0.227	-0.431	**0.598**	-0.096	-0.209	0.033	-0.252	0.312	0.025
Appreciation	**0.633**	0.366	0.268	-0.032	0.470	0.265	0.088	-0.147	0.177	0.154	-0.129
Difficulty	0.230	0.060	-0.078	**-0.569**	0.345	-0.285	-0.059	-0.269	0.161	**-0.558**	-0.018
Boredom	-0.402	0.150	-0.430	**-0.428**	-0.145	-0.083	0.565	-0.175	-0.188	-0.035	-0.183
Motivation	**0.682**	0.131	0.050	0.169	0.140	-0.230	0.096	-0.368	0.112	0.123	0.492
Learning	**0.757**	-0.124	-0.357	0.123	0.088	0.322	-0.039	0.122	-0.051	-0.232	0.291
Professor	0.020	**0.718**	-0.116	-0.048	-0.110	0.239	-0.411	-0.212	-0.292	-0.238	0.208
Initial Grade	0.298	-0.102	0.110	0.454	0.207	-0.194	0.200	-0.083	**-0.679**	-0.214	-0.220

Source: Prepared by authors

Among the eleven dependent variables, Career had the greatest canonical loading in CF1 (0.864) followed by Major (0.794), Learning (0.687) and Reward (0.540). These variables had the greatest importance for CF1. Among the independent variables, Major (0.791), Career (0.784), Learning (0.757), Reward (0.733), Motivation (0.682) and Enthusiasm (0.633) were the most relevant for CF1.

Thus, even after taking into account the positive signs of the loadings, the initial perceptions of the students regarding major, career, reward, enthusiasm, motivation and learning had a positive impact on the final perceptions of the students regarding major, career, reward and learning, which partially confirms hypothesis H4. These relationships obtained from the canonical loadings in Table 8 are summarized in Table 9.

We inferred the following from the results in Tables 8 and 9:

CF1-The more motivated students are at the beginning of an introductory accounting class, the more enthusiastic the students will be to take the class. The greater the expectations are for learning, reward, and impact on academic and career performance the better the perception of learning, motivation, reward, and the importance of the class for academic and career performance will be at the end of the semester.

CF2-The initial student perceptions on the potential for the professor to affect student opinions on the usefulness of the class positively affected final perceptions of this variable. This result is in agreement with the means test in Table 4, where the initial and final mean perceptions of the professor did not differ.

CF4-The higher the initial perception that the class would be difficult and boring, the lower the enthusiasm to take the class.

CF5-The more time students were willing to spend on the class relative to other classes, the greater was the actual time spent.

CF9-The lower the expected grade in the class, the greater final perception that the class was difficult or boring.

CF10-The greater the initial impression that the class would be difficult, the lower the final grade.

Table 9: Relationships between final and initial perceptions

Function	Dependent Variables (Final Perceptions)	Independent Variables (Initial Perceptions)	Impact
CF1	Major, Career, Reward, Learning and Motivation (2nd. option)	Major, Career, Reward, Appreciation, Motivation and Learning	positive
CF2	Professor	Professor	positive
CF4	Appreciation	Difficulty, Boredom (3rd. option)	negative
CF5	Time	Time	positive
CF9	Difficulty, Boredom	Initial grade	negative
CF10	Final Grade (2nd Option)	Difficulty	negative

Source: Prepared by authors.

The last stage of estimating canonical correlations involves validating the results through sensitivity analysis [47]. According to Hair et al. [47] the correct approach to evaluating the sensitivity of results is to remove a dependent and/or independent variable. Table 10 shows the results of the CF1 sensitivity analysis. The stability of the canonical loadings was determined when initial grade, professor and enthusiasm were omitted from the analysis.

Table 10: Sensitivity analysis

Variable	Original StandardizedCoefficient	CF1 resultsaftereliminating:		
	CF1	Initial grade	Professor	Enthusiasm
Dependent variables (final perceptions)				
Course	0.794	0.792	0.787	0.802
Career	0.864	0.867	0.858	0.869
Reward	0.540	0.531	0.561	0.531
Time	0.472	0.468	0.481	0.443
Appreciation	0.394	0.369	0.399	0.356
Difficulty	0.004	0.028	0.014	0.007
Boredom	-0.466	-0.447	-0.472	-0.454
Motivation	0.390	0.362	0.423	0.368
Learning	0.687	0.685	0.717	0.661
Professor	0.053	0.089	0.134	0.024
Final Grade	0.265	0.259	0.275	0.239
Independent variables (initial perceptions)				
Course	0.791	0.803	0.789	0.805
Career	0.784	0.791	0.763	0.795
Reward	0.733	0.746	0.757	0.725
Tempo	0.383	0.395	0.395	0.37
Appreciation	0.633	0.634	0.658	omitted
Difficulty	0.230	0.240	0.231	0.208
Boredom	-0.402	-0.383	(0.389)	-0.387
Motivation	0.682	0.679	0.690	0.677
Learning	0.757	0.763	0.746	0.768
Professor	0.020	0.039	omitted	-0.02
Initial Grade	0.298	omitted	0.288	0.301

Source: Prepared by authors.

Table 10 shows that the canonical loadings of CF1 are stable and consistent when one independent variable (initial grade, professor and enthusiasm) is eliminated.

Relationship between Performance and Initial and Final Perceptions

Table 11 shows the results of the multiple regression analysis specified in Equation 2.Note that initial grade is the only initial perception variable that affects student performance (measured by final grade). The significant positive coefficient of the Initial Grade variable suggests that the higher the expected grade at the beginning of the semester, the higher the actual final grade.

Table 11: Multiple regression – initial perception and performance

Independent Variables	Coefficient	t	Sig.
Course	1.412	0.64	
Career	-0.925	-0.46	
Reward	-0.711	-0.66	
Time	0.204	0.24	
Appreciation	0.676	0.78	
Difficulty	-1.021	-1.18	
Boredom	-0.252	-0.29	
Motivation	0.238	0.29	
Learning	-0.999	-0.98	
Professor	0.404	0.78	
Initial Grade	0.295	2.15	**
Constant	51.236	3.72	***
No. Obs: 127			
R2 adjusted:0.1042			
F:0.0311			

Source: Prepared by authors.

Table 12 shows the results from Equation 3.The significant negative coefficient of the Difficulty variable suggests that the higher the perceived difficulty, the lower the actual final grade. The opposite occurs with Motivation. The significant positive coefficient of this variable shows that the more motivated a student is, the higher the final grade.

Table 12: Multiple regression – final perception and performance

Independent Variables	Coefficient	t	Sig.
Course	1.021	0.77	
Career	-1.085	-0.76	
Reward	1.489	1.60	
Time	0.253	0.36	
Appreciation	0.018	0.02	
Difficulty	-1.831	-2.73	***
Boredom	0.049	0.07	
Motivation	1.292	1.80	*
Learning	-1.136	-1.42	
Professor	0.773	1.44	
Constant	63.952	6.94	***
No. Obs: 127			
R2 adjusted:0.2307			
F:4.21 (prob: 0.0001)			

Source: Prepared by authors.

The results in Tables 11 and 12 do not allow rejection of hypothesis H5 since a student's expected grade at the beginning of the semester, the perceived difficulty of the class, and the student's motivation during the semester affect the student's performance. This result corroborates those of Geiger and Ogilby [9], Mandilas, Kourtidis and Petasakis [11] and Oliveira et al [26], since they show that intrinsic motivation can affect academic performance.

We performed the following diagnostic tests in order to test whether the models in Equations 2 and 3 were adequate: 1) calculation of the variable inflation factor (VIF) for each variable demonstrated the absence of multicollinearity problems (VIF<5) in both equations, 2) regressions were robustly specified, avoiding the occurrence of heteroscedasticity, 3) theRansey RESET test did not reject the specification of the models (F = 0.86. p-value = 0.46 for Equation 1, F = 0.44, p-value = 0.73 for Equation 2).

Final Considerations

This study was developed to identify if relationships exist between initial and final perceptions of introductory accounting classes from students in Accounting (AC), Business Administration (BA), and Economics (ECO) at a Brazilian university and academic performance.

In Brazil, students must choose their major before taking college entrance exams. If accepted, the student will begin taking classes specific to the selected major. Thus, introductory accounting classes in Brazil are adapted to the specific needs of each major (i.e. students in Accounting focus on studies that culminate in the preparation of economic/financial reports, whereas students in Business Administration and Economics focus on the manipulation and interpretation of these reports). Thus, unlike other countries, such as the US where business students start by studying

common subjects and only later need to choose a major, students in Brazil need to choose their major and career in their teens, before enrolling in specific disciplines.

The lack of maturity when choosing a major is one of the reasons why students drop out of courses in Brazil. Because of the different educational situation in Brazil, it is expected that our results would differ from those of Geiger and Ogilby [9] and Mandilas, Kourtidis and Petasakis [11] with samples of North American students.

One hundred and forty-five students in the second semester, 2012 at a Brazilian university participated in our study. Wilcoxon and Mann-Whitney tests were used to determine if mean initial and final perceptions of the students differed significantly by major.Canonical correlations were used to evaluate relationships between multiple independent variables (initial perceptions) and multiple dependent variables (final perceptions). Multiple regression was used to determine if the students' initial and final perceptions affected their performance in these introductory accounting classes.

Our results do not allow rejection of the five hypotheses, suggesting that: 1) AC students have a more optimistic perception of introductory accounting classes than do students from related majors (BA and ECO) even though all three courses have initial positive perceptions of these subjects, 2) student perceptions of these classes change during the semester, 3) initial and final perceptions of Accounting students on introductory accounting classes differ from those of BA and ECO students, 4) initial student perceptions of these classes affect their final perceptions and final grades in these classes.

The results specifically show that AC students initially perceive introductory accounting classes as more relevant to their academic and professional success than do BA and ECO students. According to mean final perceptions, AC students spend more time, appreciate more, and learn more in these introductory classes than BA and ECO students.

Additionally, canonical correlations suggest that the greater initial student perceptions are that the class will be difficult and boring, the lower their anxiety is to take the class, the lower the expected grade at the beginning of the semester, and the greater the final expectation that the class was difficult and boring. Furthermore, the greater initial perception that the class will be difficult, the lower the actual final grade.

Initial student perceptions affect performance given that the higher the initial expected grade in the introductory accounting class, the higher the final grade in the class. The final perceptions of these introductory classes also affect performance at the end of the semester in that: 1) the greater the difficulty perceived by the student during the class, the lower the final grade, 2) the higher the motivation perceived by the student during the class, the higher the final grade.

Our results corroborate most of the results found byGeiger and Ogilby [9] and Mandilas, Kourtidis and Petasakis [11] and show that initial student perceptions of introductory accounting classes affect academic performance in these classes.

Universities and professors could use our results to focus their efforts on introductory accounting classes in order to improve student motivation and perceptions. These efforts in turn, could improve student performance and reduce dropout rates. For example, professors could stress, verbally and through the course syllabi, the relevance of these classes for future educational and professional success. Moreover, because our study showed that grade expectations at the beginning of a class can affect final grades, professors and students could work together to generate optimism, positive thinking, and intrinsic motivation as well as revising beliefs and values. In other words, if students expect to earn "good" grades at the beginning of the semester, they may very well do so and vice versa.

The use of improved teaching methods and appropriately allocating professors with specific abilities can help reduce the difficulty and the perceived "boring nature," according to our study sample, of introductory accounting classes.

Our study may have been limited by sample representation given the number of students from Business Administration and Economics who did not complete the final perceptions questionnaire because they had eitherdropped out of the introductory accounting courses or simply did not come to class.Another limitation might be that the study only examined student perceptions from a single semester.

We recommend that future studies analyze relationships between student perceptions and academic performance by gender. It would also be interesting to increase the sample size by

evaluating student perceptions at other Brazilian and international institutions.

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