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Not All Best Practices Result in Best Performances: Two Empirical Studies of Online Accounting Education

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Not All Best Practices Result in Best Performances: Two Empirical Studies of

Online Accounting Education

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ABSTRACT

Exploring the impact of specific pedagogical strategies in online accounting education on student learning outcomes is central to this research. This two-study dissertation focuses on the influence of course delivery methods on student performance and the mediating function of accounting efficacy. A diverse sample of accounting and business students was quantitatively analyzed to determine the relationship between course structure, classroom justice, students' motivation and their accounting efficacy, applicability of learned material, and final grades. Even though certain teaching practices were advantageous, the combination of these practices did not always lead to improved student performance, according to the findings. Significant determinants of student learning outcomes were found to be course structure, classroom justice, and accounting efficacy, with accounting efficacy playing a pivotal mediating role on the impact of applicable learned material. The results of this research highlight the multifaceted character of accounting education and the significance of structured teaching methods centered on effectiveness and makes a substantial contribution to the academic discourse of accounting education by providing educators, institutions, and policymakers with crucial insights.

Keywords: student motivation, course structure, classroom justice, accounting efficacy, applicability of learned material, final grade.

BEST PRACTICES VERSUS BEST PERFORMANCES

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BEST PRACTICES VERSUS BEST PERFORMANCES

STUDY 1

Studies have shown that online education results in lower final grades for students (Bernard et al., 2004; Bird et al., 2022; Coates et al., 2004; Dutton et al., 2002; Kofoed et al., 2021; Xu & Jaggars, 2011) and statistically increases drop-out rates (Dash et al., 2022; Gomez-Zermeno & de La Garza, 2016; Jacobsen, 2019; Rawat et al., 2020; Wissing et al., 2022). Despite these negative effects of online education which have also been espoused by many instructors, according to the Pandemic and Student Engagement Report from the Center for Postsecondary Research (n.d.), 93% of undergraduate students received their education in online environments. Since online learning can make students feel less connected to their peers and teachers and students are more likely to get distracted when they do not have face-to-face instruction, the interactions between the student and the teacher and those between the student and the course material can have huge effects on their final grade. The literature reviewed supported the idea that the negative aspects of online learning for students can be mitigated by the approaches that instructors use to engage their students. For example, Koenig (2022) found that when students increased their interactions with other students, their final grade improved by as much as 8%.

The most effective approaches to teaching an introductory accounting course have been extensively studied and written about on an individual basis. These focused approaches encompass both the subject content and content delivery methods (Turner & Turner, 2017) and cover a wide range of topics, including the use of testing aids (Carpenter, 2012), clicker questions for responses (Premuroso et al., 2011), as well as team learning (Opdecam & Everaert, 2012) and active learning (versus passive learning)

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(Vanhorn et al., 2019). Sanders and Aplin-Houtz (2023) found that instructors who actively listened to negative student evaluations could then offer new approaches towards effective course content and delivery. Additionally, a portion of Study 1, focused on video viewing which was conducted by Goedl, Sanders, and Mallo and is currently in press to be published. The following is a brief description of the two approaches to course delivery examined in this study:

- The first approach focused on the number of lecture videos students watched and the percentage of the videos they watched and how these factors affected their final course grades. The data from the study was analyzed to find out how many course videos students should watch and how often they should watch them. The same students were also examined to see if their GPA, gender, major field of study, or age had any effect on their final course grade.

- The second approach was to increase the number of student assessments offered during a course. Carpenter (2012) found that the ultimate goal of learning was for students to be able to use the knowledge they gained and apply it in different situations elsewhere in their life. Carpenter referenced previous research (e.g., Pashler et al., 2007; Roediger & Butler, 2011; Roediger & Karpicke, 2006) that has demonstrated that after a person took a test, it improved how well they did on similar tests in the future. But much less is known about the benefits that testing offers students and how the knowledge that students gain from taking tests could be used in other

areas of their life. These types of benefits from test taking were explored in this study.

Scholars have recognized that these two course delivery methods, increasing the number of lecture videos created for students and the number of student assessments offered during a course, are among the best practices for course delivery (Afify, 2020; Butler & Roediger, 2007; Carpenter, 2012; Draus et al., 2014; Guo et al., 2014; Slemmons et al., 2018). The present study asserts that combining the two best practice delivery methods, increasing the number of lecture videos created for students and the number of student assessments offered during a course, would result in superior student performance as judged by their final exam grades.

The term "best practice" will be used throughout this study, which is defined as "a guideline or a standard that has been determined to be the best for achieving a desirable outcome" (Kinney, 2023). Bertram (2022) stated that the underlying principle of best practices is replication. Best practices happen when ideas are able to deliver results that can be replicated elsewhere. They act as blueprints, highlighting implementable examples and allowing evidence to propel effective policy decisions and change. Best practices are prevalent in all fields and have helped set standards, address challenges, and increase efficiency. Best practices were the focus of this study in the attempt to produce optimal results, specifically in the field of teaching.

As a new professor, I felt my primary focus was to become the best instructor possible. Even as a part-time adjunct professor I began to implement various best practices in teaching into my online classes, for example, offering concise video lectures and multiple exams per semester. After a few years of part-time teaching and having

begun a doctoral program, I considered topics for a dissertation that focused on teaching. I remembered a unique situation I had while teaching an introductory online accounting class in which I implemented a counterpoint way of teaching for the first time so that comparisons could be made between myself and another instructor. Because it was an introductory class, all business majors and some students from other select disciplines were required to take it. This means that these classes are always full and additional sections are often needed.

In the study, introductory accounting courses that were taught by me and another accounting instructor were observed—ten asynchronous sections over two semesters with each having approximately 70 students per semester, making the total number of students in the study approximately 300. The class design and content, including the syllabus, exam questions, exercise templates, and automated grading were the same for both instructors, wholly based on the more established instructor's curriculum. The differences between the courses, in addition to the instructors, were the number of videos the instructors made and offered to students, the length of these videos, and the number of assessments given to students during the semester. These differences in course delivery between the two instructors provided a unique opportunity to compare course outcomes and potentially establish best practices for other instructors.

The literature review revealed that over the years much has been written about various individually proven best practice techniques for instructors, but no studies were found in which a combination of best practices had been observed together. The literature review provided the reasoning for this study's proposal—that instructors utilizing better delivery methods would result in better student performance.

LITERATURE REVIEW

The term "educational theory" (Loveless, 2023) refers to a broad category of theories that describe the use, interpretation, and aim of education. Theoretical ideas can influence educational strategies, curricula, and evaluation methods in addition to helping explain the learning process of students. In this section, the three most common theories of education will be described separately, and this will help explain why the study concentrated on cognitive load theory.

BEHAVIORISM THEORY

Behaviorism as a learning theory is most helpful to apply when the goal of an educational intervention is to bring about a change in behavior. For instance, when a student incorrectly understands a concept, the instructor can immediately provide corrective feedback. Rostami and Khadjooi (2010), who study behavioral theory, stated that the behaviorist learning perspective is especially helpful for analyzing building skills and showing technical or psychomotor skills. People who are behaviorist-oriented focus on outwardly visible behavior and eschew ideas about thoughts or mental activity. According to behaviorism, learning happens when a person reacts positively to certain external stimulus—this is sometimes referred to as the stimulus-response hypothesis. For instance, when given a math flashcard with the equation of 6 multiplied by 8, the learner might respond with the number 48. The equation represents the stimulus, and the corresponding response represents the solution. The term "conditioning" is used by behaviorists to describe this sort of learning, which involves responding to specific stimuli (Clark, 2018). Furthermore, the essential ideas of the conditioned reflex form the foundation of behaviorist principles. Behaviorism does not include discussions of

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memory or how new habits or behavioral changes are remembered or stored for future use. Instead, behaviorism stresses observable behaviors that can be measured and emphasizes repetitive conduct that eventually develops into habits. Additionally, specific, measurable, terminal behaviors are used to express learning objectives (Rostami & Khadjooi, 2010).

COGNITIVISM THEORY

In the last half of the 20th century, cognitivism replaced behaviorism as the dominant theory for illuminating the psychology of learning as a cognitive process (Brieger et al., 2020). According to cognitive scientists, learning is an internal process that employs memory, thought, reflection, abstraction, and motivation to help a person adapt to their environment. The capacity of the brain to receive, analyze, and store information is referred to as cognitive load. To lighten the learner's cognitive load, pertinent information is frequently chunked or modified by instructors. When information is chunked it is organized by instructors into small, meaningful pieces of knowledge (Brieger et al., 2020). To understand how learners organize and connect new material with past knowledge, the cognitive approach places an emphasis on assigning knowledge with a significance. Because self-directed learning is a key component of online learning, it is beneficial for educational designers to apply the concepts of cognitive theory to minimize demands on the learners' memory without sacrificing the course content.

COGNITIVE LOAD THEORY

Cognitive load theory (Moreno & Park, 2010) is a model of how learners' working memories operate and the elements of pedagogical information that can fill up their limited short-term memory space (Sweller et al., 1998) and is based on the premise

that people process information in two ways, auditorily and visually. For example, when a person watches a video, auditory and visual information are processed simultaneously, with problems arising when a continuous flow of information results in overloading (Afify, 2020). Whereas short-term memory space is considered limited, long-term memory has no limits. So, when educators apply cognitive load theory to their teaching, their challenge is to provide students with enough knowledge that can be processed in their short-term memory and then can be stored effectively in their long-term memory.

THEORETICAL FRAMEWORK

When creating educational materials, including digital videos, cognitive load is regarded as one of the most important factors to consider. Numerous research studies (e.g., Ambrose et al., 2010; Chandler & Sweller, 1991; Chase & Simon, 1973) have recommended segment learning to lessen students' mental burden (Slemmons et al., 2018). The results of these studies demonstrated that segmenting lowered the mental effort of students, facilitated their learning, and enhanced their transmission of knowledge.

The two hypotheses for this study stated that the number of instructor videos used in a course and the length of these videos was directly related to students' final exam grades and that the number of assessments given by instructors in a course was directly related to students' improved final exam grades.

Figure 1 demonstrates the theoretical model used in this study. This model demonstrates that there is a direct relationship between the number of videos students viewed, the percentage of the videos they viewed, and the number of course assessments given by instructors in relationship to the students' final exam grades and final course

grades. However, this relationship was also mediated by student engagement, specifically

the amount of time the students engaged with the videos and assessments in Canvas, the

learning management system utilized at the university. Further, the relationship was

moderated by the student's gender.

FIGURE 1

Theoretical Framework

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┌─────────────────────────────────────────────────────────────┐
│ Student engagement (total minutes students engaged with      │
│ Canvas; mediator)                                            │
└─────────────────────────────────────────────────────────────┘
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┌──────────────────────────────────┐         ┌────────────────────┐
│ • Number of videos viewed        │    →    │ • Final exam grade │
│ • Percentage of videos watched   │         │ • Final course     │
│ • Number of assessments          │         │   grade            │
└──────────────────────────────────┘         └────────────────────┘
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┌──────────────────────────────────────────────────┐
│ Student gender (stereotype threat; moderator)     │
└──────────────────────────────────────────────────┘
```
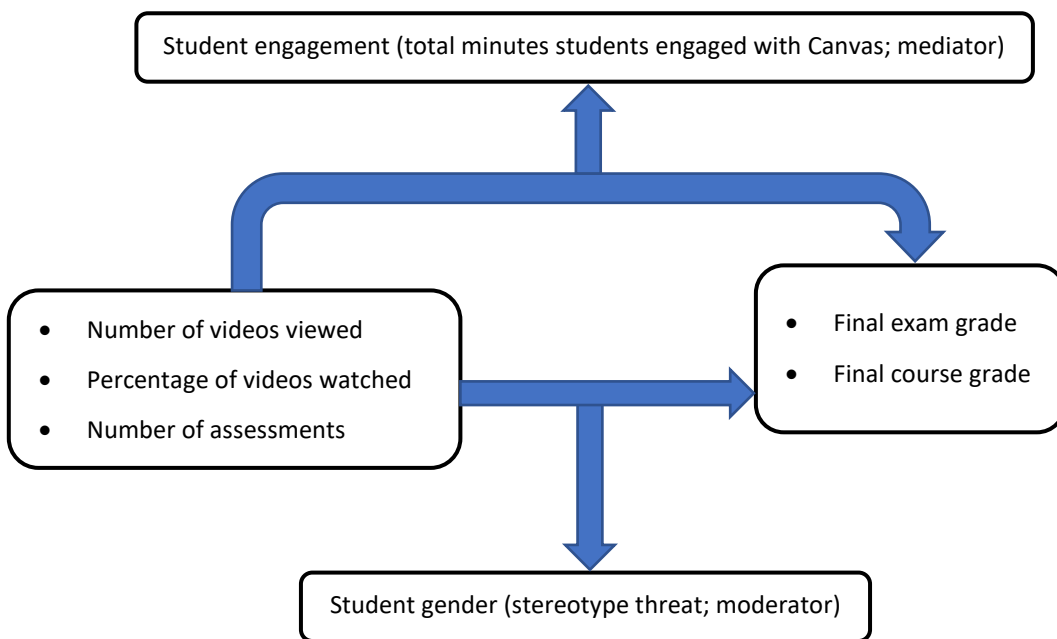
STUDENT ENGAGEMENT—MEDIATING VARIABLE

Student involvement is the aim of nearly every course delivery strategy, and as

such, it was the link or mediator between the independent and dependent variables and

the outcome variables of the study. According to D'Aquila et al. (2019), student success

depends on students' engagement in all forms of learning. Typically, teachers want their

pupils to understand the topic being taught, do well in class, and enjoy the experience.

One strategy for teachers to assist the engagement or interest of their pupils is to maintain

their interest in what they are learning (Bryson & Hand, 2007). Chapman (2003) defines engagement as when students are "cognitively invested in, actively involved in, and emotionally committed to their learning," and Carini et al. (2006) define it as "how much [students] take part in practices that are good for learning." Both definitions of engagement place an emphasis on how much effort a student puts into their learning. One of the elements that affect how well pupils perform in school is student engagement (Carini et al., 2006; Lee, 2014). Research on student engagement has shown that a more involved student is a more successful student. When students are engaged in their lessons, they do better in class. Additionally, they pick up more information when they are interested in the subject matter (Carini et al., 2006). According to Carini et al. (2006), student engagement is associated with improved performance and success, based on the findings of three nationwide surveys.

A mediator variable was created in this study by combining the number of videos students viewed and the percentage of each video they viewed. This combined mediator variable was an important measure of student performance because some longer videos were viewed only once but just in part, whereas some shorter videos were viewed one or more times and in their entirety.

REVIEW OF THE THREE VARIABLES

This is a summary of the three factors that set the two instructors in the study apart from one another. The first two variables that were explored involved lecture videos. Specifically, the number of times instructional videos were watched by students and the length of videos the students watched (a portion or entirely).

In the realm of higher education, videos made by instructors across the globe, course publishers, and other content producers have grown to be crucial instruments for instructors. Videos are increasingly used as the main delivery method for content in online courses and have the advantage of being accessible (Afify, 2020). In the literature reviewed, it was found that the majority of online accounting courses which have been studied were hybrid or blended courses (i.e., online courses with some component of face-to-face instruction) and that among these studies, the focus was about the course itself rather than how the course material was delivered by instructors. This study proposed that the delivery of content would be as important as the content itself.

There are several reasons why the delivery mechanism of video lectures is important. First, a professor, in a conversation with their students either in-person or online, can spend more time instructing the ones who do not understand the course content. Second, students can rewatch video lectures as many times as they like and until they comprehend the topic. Last, video lectures enable an instructor to cover more difficult and complex topics. For example, an instructor might cover basic subject material in their first video and gradually increase the content to be more difficult in comparison to a fixed amount of in-class lecture time (Brecht & Ogilby, 2008).

Even though there are many opportunities for teachers to use videos in conventional in-person classes, these techniques are far more common in online courses. Research shows that when instructors use videos for any form of online learning, students are more interested in the material and happier with the course (Draus et al., 2014; Mandernach, 2009; Potter & Johnston, 2006; Sargent et al., 2011).

The impact of video length on learning has been studied within various educational fields, with common findings being that the students' cognitive load is the key priority when creating instructional videos (Afify, 2020; Colquitt, 2001). According to Sargent et al. (2011), first-year accounting students who saw brief videos were more motivated to continue their accounting course education than those who had not watched the videos. Meseguer-Martinez et al. (2017) counted the number of times viewers of online instructional videos clicked the "like" button. Their findings indicated that users, by clicking on the like button, chose quick online instructional videos over longer videos, and therefore, it was concluded that instructors should make brief videos to keep students' attention longer. Martins et al. (2019) claimed that students who used recorded video lectures for studying frequently skipped straight to the sections they wished to review rather than watching the entire lecture, which supports the idea that instructors creating brief video lectures is beneficial. Guo et al. (2014), in the most comprehensive large-scale study of video engagement to date, analyzed data gathered from 6.9 million student sessions in which the students watched educational videos. The researchers measured engagement by how long students watched each video and whether they attempted to answer post-video assessment problems. The length of time students spent watching each video was used to gauge their interest in the material presented in the video. The key conclusion the researchers came to was students opined that shorter videos in which an instructor appeared were more interesting than videos in which they did not appear.

Afify, 2020 notes that researchers have investigated the length of the videos themselves and how long students watched them. When the data was analyzed, the typical viewing time for the educational videos was less than 6 minutes. The collective

findings of the research found that as video lengths increased, learner engagement in the videos declined. Afify 2020 further states that certain videos between 9 and 12 minutes in length had an engagement rate of 50%, whereas those between 12 and 40 minutes had an engagement rate of 20%. It was concluded that videos under 6 minutes are ideal for instructors to utilize, while those between 6 and 9 minutes can be a waste of the instructor's time (Afify, 2020).

Chen et al. (2013), in another study of online videos, claimed the level of the course determined how effective instruction was in online courses in comparison to instruction in traditional in-person accounting courses. Students enrolled in advanced cost and managerial courses or advanced financial accounting and principles courses were polled so more could be learned about their perspectives on various topics, such as learning satisfaction, course utility, knowledge application, and self-efficacy or perceived self-confidence and competence. The findings implied that course level matters when instructors consider whether to offer courses online. The results also indicated that for students, traditional classroom settings are much more beneficial than online courses for advanced finance courses, whereas traditional classroom settings and online courses are equally useful for principal courses. These findings back up the idea that blended learning, meaning courses that have a few on-campus class meetings but are otherwise online, may be a good idea to implement no matter what level the course is. Chen et al. (2013) described what might be considered a mixed bag of student satisfaction for online, hybrid, and face-to-face courses of any level, indicating an uncertainty as to which format of course instruction was ideal.

In the current study, the third variable of the theoretical framework was the number of assessments that teachers offered students. This variable, like the number of videos viewed, was derived from the literature review and incorporated in the data collection. It has generally been believed that a series of weekly assessments more effectively improves students' final grades over a single comprehensive exam at the end of a course. The current study was designed in part to determine if multiple assessments in a course were in fact more effective for student success. According to Carpenter (2012), a great amount of research has demonstrated that assessing students' knowledge of material by means of tests helps with the learner's retention of that information in the future. Most previous studies on the impact of testing have concentrated on information retention of students as judged by their final test results that are compared to their initial test results in a course. The efficacy of testing in relationship to what the test taker learned in a course and the application of this knowledge is much less understood, but research on this topic seems to be on the rise. Recent studies were reviewed that addressed connections between test taking and students' transfer of learning and focused on the format of tests and the advantages of testing in relationship to the transfer of learning across temporal contexts and in knowledge domains. The results of the few existing studies on this subject point to the significant advantages of instructor assessments for student learning transfer. Future investigation has been recommended to discover the ability of assessments to foster the application of students' knowledge as well as its ability to direct students' memory retention.

CONTROLLING ELEMENTS

Through the application of regression analysis, which demonstrates a linear relationship between an independent and a dependent variable, it has been found that prior student achievement and academic self-efficacy were the only independent variables to significantly predict GPA, the dependent variable, even though a student's approach to learning, their prior achievement, and their age all produced significant relationships to their GPA (Cassidy, 2012). According to a study by Masykuri et al. (2021), students' GPA had a greater influence on their earning a bachelor's degree within four years compared to any other factor.

STUDENT GENDER—MODERATOR VARIABLE

Both in a report by Taasoobshirazi et al. (2019) and in the comments by Olson & Riordan, 2012, from the President's Council of Advisors on Science and Technology there was a call in February 2012 for nearly one million more college graduates in the science, technology, engineering, and math (STEM) fields. In the last ten years, there has been concern about the lack of STEM workers to meet the needs of the job market. Although women arguably make up one-half of the population, they are historically underrepresented in jobs involving math and science. Stereotype threat theory (Inzlicht & Schmader, 2011) offers a way to explain why women have historically not done as well in math and science in comparison to men and have therefore avoided working in STEM jobs. Within stereotype threat theory the risk of confirming a negative stereotype about a person's identity group is thought of as a psychological burden that hurts their performance. In the United States, more women are going to public and private colleges and getting degrees in the sciences than in the past (Rocheleau, 2016). However, they are still underrepresented within the number of people who obtain science degrees (Hill et

al., 2010). Other researchers (Eccles et al., 1983; Eccles, 1994) developed a model to analyze the differences of how men and women were represented in STEM fields. The model had three main components: culture within fields, differences in early experiences for women in fields where men are more common, and differences in how confident men and women feel about themselves in different fields.

Agnoli, et al. (2021) described the relationship between gender and mathematics, saying that in many countries it is common for people to think of mathematics as a male domain, and they also noted that children recognized these stereotypes as young as elementary school. In a similar vein, Cvencek et al. (2011) found that in the United States the cultural idea that boys are better at math than girls exist as early as the second grade.

HYPOTHESES

This study sought to investigate various aspects of students' engagement with instructional videos, including the number of videos they watched, the duration of these videos, and the frequency of student assessments in two similar classes. Its primary purpose was to emphasize the importance of implementing best teaching practices to improve student learning outcomes. The study hypothesized that adherence to these best practices played a crucial role in promoting effective teaching strategies, which in turn would result in improvements in student performance, as measured by students' final exam grades. The ultimate objective of this study was to identify the most effective instructional strategies for asynchronous online introductory accounting courses which could serve as a guide for future instructors. It was also hypothesized that the instructor who adhered to best practices for video utilization and assessments would produce

superior results over the instructor who did not. As a result, the following two hypotheses were formed:

Hypothesis 1: The number of instructor videos used in a course and also the shorter length of these videos is directly related to better final exam grades.

Hypothesis 2: The number of student assessments given by instructors is directly related to better final exam grades.

METHODS

The goal of this study was to improve student performance by recommending the most effective and comprehensive way for instructors to deliver online asynchronous accounting courses.

The course grade results of ten different introductory accounting sections taught by two different instructors over two semesters were contrasted and analyzed. Through the data collected, three factors were isolated relating to the effective and comprehensive delivery of the course that were expected to be the basis of the best practice recommendations of this study.

The two instructors, who were the focus of the study, concurrently taught ten sections of an introductory accounting course over two semesters. Their course curriculum was the same for all ten courses except for the production of their own instructional videos, the length of the videos, the number of videos offered to students, and the number of examinations they gave students (whether they used quizzes along with the midterm and final exams). While these were the differences of the course curriculum, what was identical for both instructors of the ten sections was the automated grading system for the course (Canvas); the course syllabus, learning objectives,

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modules, and content; the exercises, assignments, templates, and exam questions that were assigned to students; the use of a midterm and final exam; the content of the instructional videos; and the way the instructor's taught the course. Three independent variables were compared to student performance as part of the study. Other factors such as the students' gender, GPA, age, and major were examined separately in relation to their final grades.

STUDY PLAN

This study examined the number of instructional videos students viewed, the length of videos students watched, and the quantity of student assessments given during ten sections of ACCT2081 Financial Accounting to see how they affected student course grades. The ten sections of this course that were examined were taught by two different instructors and took place in the fall 2021 and spring 2022 semesters. I was new to the department and to teaching, while the other faculty member had taught ACCT2081 for many years. We worked together to develop identical course curriculum, including the syllabus; the learning objectives, modules, and content; the exercises, templates, assignments, and exam questions; and the content of the instructional videos. Each produced our own video lectures to be included in the online learning management system. For the fall and spring semesters, we used identical templates and assigned students the same tasks and exams. The same video content, assignments, resources for tutoring, support from teachers, and midterm and final tests were available to all students. The only differences between the video lectures were the quantity of videos, the length of the videos, and the production of the videos by each instructor. While one faculty member favored making shorter videos and produced a higher number of them, the other

faculty member preferred making longer videos and produced fewer of them. Students were not required to watch either of the instructor's recorded video lectures for each module or chapter. The choice of watching the videos was up to the students, and they were not penalized if they did not watch them. Students had the freedom to finish the videos whenever it was convenient for them and to watch them as many times as they wanted.

The other professor and I individually recorded ourselves working through hypothetical accounting problems on empty templates using screen recording software and video recording devices. The videos were provided together with a downloadable version of blank templates in Canvas for students to retrieve. The templates were comprised of financial statements, T accounts, ledgers, journals, and other documents required for the students to solve the exercise problems. Students were told to download the blank templates and follow the faculty's instructional videos to complete them.

RESULTS

Ten ACCT2081 course sections were taught by the two instructors in the accounting department during the fall of 2021 and the spring of 2022 semesters and yielded relevant data for 240 students. There were approximately 300 students initially enrolled in the ten sections but as is historically the case, there was a 20% attrition rate, leaving the data to be collected from the 240 remaining students. Data was recorded on students whose official course grades were either a plus or minus A, B, C, or D or an F grade. The study did not include data for students who had officially or informally withdrawn from the course. To address potential population differences between the instructors and to ensure balanced data, the data was evaluated as follows: The average

GPA of the students in the classes was essentially the same, while Instructor 1, the

instructor who ended up demonstrating the least amount of best practice techniques, had a

higher total number of females and a higher total number of accounting majors in their

courses than Instructor 2. Table 1 provides a demographic breakdown.

TABLE 1

Demographic Breakdown

Variable	No. of students for Instructor 1	No. of students for Instructor 2
Gender		
Male	83	63
Female	61	33
Accounting major		
Yes	93	59
No	45	43
GPA	3.0	3.1

Note: Instructor 1 had longer videos and fewer assessments than Instructor 2.

The way the courses were taught, and the instructor's course content were the

same for both instructors except for the instructors' production of their own videos, the

quantity of the videos, and their duration. While Instructor 1 chose to record lengthier

videos and use less of them, Instructor 2 recorded and used more videos that were shorter

in duration. Students were advised but not required to view these recorded video lectures

throughout the semester before completing the homework tasks and exercises for each

topic. A representative from the university's Office of Institutional Research, who was

not a researcher in this study, assembled the student-specific data. This representative

was the only one to match up the data with the actual students, and after both semesters

were over, they also recorded the time students spent watching the instructor videos and the students' final grades in the courses. The representative then de-identified the data by eliminating any identifiable personal student information from the captured data from the research database, such as names, emails, and student IDs, and substituted unidentified placeholders with additional demographic data to capture the students' gender, their GPA, age, and major. After the data set was de-identified, it was received to be examined in the study.

The data was evaluated in the study by using the Statistical Package for the Social Sciences (SPSS; Nie et al., 1970). Nie et al. created the initial SPSS software to analyze a vast volume of social science data. To build a case in SPSS a set of variables first needs to be defined. Each variable has a value for every situation. Any potential subjective bias was eliminated by utilizing the "final exam grade" rather than "final course grade." The students' final exam grades were automatically scored by Canvas, the learning management system, and it did not allow for any human intervention. (Whereas the final course grades could be subject to instructor bias and changes.) Variables were either strings of letters or numbers, like dates, currency, and measurements. After entering the data into SPSS, an analysis was performed. Following that, the analysis of the data was presented in text, tables, and graphs. Based on the final exam grades, statistical analysis was used to identify the students' preferred delivery methods of a course. Table 2 describes the data path analysis.

TABLE 2

Path Analysis

Variable	b	SD	t	p	2.5% CI	97.5% CI	R	Delta R^2
Model path								
Constant	5.49	1.19	4.60	-	-	3.14		
Percentage viewed → Final exam grade	0.05	0.01	9.01	-	0.04	0.06		
Instructor	0.30	0.42	0.70	0.483	(0.54)	1.13		
Controls								
Age	0.06	0.03	1.87	0.063	-0.00	0.13		
GPA	0.05	0.25	0.20	0.843	-0.45	0.55		
Moderation								
Student gender → Final exam grade	(0.02)	0.01	(2.03)	0.043	0.04			
Grade					0.05	-0.00		
Instructor 1 (female)	(0.53)	0.06	7.55		0.02	0.08		
Instructor 2 (male)	0.48	0.04	5.22			0.05		
Final exam grade							0.28	0.01

The data showed that the percentage of videos students viewed was significant in the model. That information along with the consideration that GPA likely played an important role in student performance led to the conclusion that a deeper analysis was

warranted from the student database. First, using GPA as an additional control was evaluated to see if it would be impactful to the model. Even though the other relationships remained primarily the same (other paths in the model), there was a nonsignificant finding with GPA as a control ($b = 0.49$, $t = .20$, $p = .84$). Additionally, the ΔR^2 was only 0.28. Owing to these findings, it was determined that the relationship between the percentage of videos viewed, and the final exam grades was not controlled by GPA.

      To understand why the percentage of videos viewed was significant in the model beyond the relationship evaluated above, the hypothesis was tested to see if the percentage of videos viewed was associated with statistically and significantly different mean scores for each of the professors. An independent samples t test was performed. The variables for the percentage of videos viewed, GPA, age, grade, and final exam grade were sufficiently normal for the purposes of conducting a t test based on skewness and kurtosis cutoffs with ± 2.00 for skewness and ± 7.00 for kurtosis. For all five variables, the assumption of homogeneity of variances was tested and not satisfied for the percentage of videos viewed via Levene's F test, $F(238) = .26$, $p < .001$. Considering the significant p value of the Levene's test, equal variances could not be assumed for analysis. Accordingly, the independent samples t test was associated with a statistically significant effect for GPA, $t(-53) = 1.45$, $p = .30$. Thus, the number of videos viewed associated with a statistically significantly larger mean GPA for one instructor compared to the other. Cohen's d was estimated at 0.67, which is a large effect based on Cohen's guidelines.

When evaluating the final exam grades, the assumption of homogeneity of variances was tested and not satisfied via Levene's F test for GPA, age, grade, and final exam grade. Further, there was an attempt to analyze the relationship between the number of assessments given and the final exam grades. Unfortunately, based upon the way the data was collected, a conclusion was not able to be drawn as to the impact of the number of assessments assigned to students and their final exam grades. Table 3 describes the group statistics by instructor.

TABLE 3

Group Statistics

Variable	M		SD		SEM	
	n	%	*n*	%	*n*	%
Instructor 1						
GPA	2.99		0.89		0.08	
Age	22.78		5.75		0.54	
Grade	7.71		3.67		0.34	
Videos viewed		68.62		36.44		3.41
Final course grade		82.75		20.48		1.92
Instructor 2						
GPA	3.04		0.73		0.06	
Age	23.19		6.25		0.56	
Grade	6.80		3.50		0.31	
Videos viewed		43.96		37.61		3.35
Final course grade		76.71		19.54		1.74

Note: N = 114 for Instructor 1; *N* = 126 for Instructor 2.

DISCUSSION

The best practices of content and delivery methods for instructors have been the subject of a sizable body of scholarship pertaining to a wide range of disciplines, including equine reproduction (Smesny & Bellah, 2012), social work (McAuliffe, 2019), online course delivery (Irbleck, 2008), kinesiology (Tanis, 2020), chemistry, medicine, and health (Sahu et al., 2022). Shared across these disciplines, best practices have been determined for increasing student engagement, applying clear expectations and purposes of course activities, promoting active learning among students, and offering rapid feedback to students. These best practices have been crucial in promoting positive teaching strategies in each of these disciplines. In a similar manner, this study attempted to find teaching strategies for instructors who are teaching introductory accounting courses in an asynchronous online environment which would result in improved student performance as judged by the students' final exam grades. The goal of this study was to define optimal core modalities for teaching asynchronous online introductory accounting courses that future instructors would be able to adhere to. Setting these best practices for instructors in this discipline could result not only in overall enhanced student performance but in improved methods for inclusion of Gen Z and millennial students (Yu, 2020). The three variables for the theoretical framework of the study, the number of times videos were watched by students, the length of videos students watched, and how many assessments students received, were each evaluated for their merits since the literature review did not reveal any studies that had used all three variables together.

RELEVANCE OF STUDY 1 TO STUDY 2

After Study 1 was completed, I planned to make public the findings of the best practices for delivering an online asynchronous introductory accounting course. Prior to

the results of the study, I was confident that the students' grades from the classes in

which the instructor used the best practice techniques for video viewing and assessments

would be better than the students' grades from the other classes in which the instructor

did not follow these best practices. Upon analysis of the data the reverse was found to be

true. The instructor who did not follow the best practice techniques had student grades

that were more than 6% higher than grades from the courses with the instructor using the

best practice techniques. Although unsuccessful in supporting its hypotheses, the findings

of this study can assist in a dialogue among instructors of the best practices to deliver

course content in accounting courses. Even though the resulting analysis of the data from

this study demonstrated that the best practices of instructors do not always result in the

best performances of students, this does not imply that there is no merit to the findings. In

fact, these contra-hypotheses results spurred me to conduct additional research to explore

alternative reasons why the data from this study demonstrated that best practices do not

always result in best performances, identify what these non-best practices were, and

explain why these non-best practices resulted in better student grade performance instead

of the implementation of the three best practices as was hypothesized.

The percentage of the videos the students watched indicated that the videos that

were significantly longer (Instructor = 0) were related to a 6% improvement in the

students' final exam grades and that these videos were viewed by students 24% more

over the shorter videos made by the other instructor. Because best practices were

expected to result in best performances and improved student grades, these findings were

counterintuitive.

Based upon the results of comparing the percentage of videos students viewed to their final exam grades, it was not expected that any significant relationship would be found between the number of assessments the students had and their final exam grades. This expectation was accurate; no significant relationship was found. These findings along with the previous assumption that best practices led to best performances further encouraged a second study to be planned, Study 2, which became the primary focus of this dissertation and will be reviewed in detail in the next section.

STUDY 2

The focus of Study 2 was to find out why the implementation of best practices in teaching did not always result in best performances for students as was shown in Study 1. The literature review for Study 2 explored reasons for the improved student performances demonstrated in Study 1 that were not related to the instructor's best practice techniques. The results of the Likert scale survey provided the data for Study 2. The methods section of Study 2 will detail the study methods used. The results section will describe the data analysis and findings, and the discussion section will discuss those findings.

So, why is it that using a set of best practices for teaching asynchronous online introductory accounting courses was not always successful as the results of Study 1 showed? That was the crux of the research question Study 2 sought to answer. The literature was reviewed, revealing many articles on the best practices of teaching. The results of Study 1 showed that there was more to the best practices of teaching than following the right techniques. Study 1 examined three best practices for instructors over two semesters of asynchronous online accounting courses, hypothesizing that the number of instructor videos used in a course, the length of these videos, and the number of

assessments given by the instructors directly related to improvements in students' final exam grades. In other words, it was assumed that the Study 1 results would support the idea that using these three best practices together would result in better performing students, but this was not found to be the case. Considering the results of Study 1, it was clear that other factors were at play in the results, and it was these other factors that were further researched in Study 2.

PROBLEM IN PRACTICE

The hypotheses for Study 1 stated that the number of instructor videos used in a course, the length of these videos, and the number of assessments given by the instructors were directly related to students improved final exam grades. Study 2 was created to explore other practices for instruction in addition to the three analyzed in Study 1 and to find alternate reasons aside from what the first literature review pointed to as to why students performed the way they did. The Study 1 literature review established that students prefer shorter length videos so that they can absorb the information and then transfer this knowledge into their long-term memory based on the cognitive loads they experience and that students prefer assessments that are given throughout the semester to solidify the class material. The first literature review did not reveal any previous studies that were conducted in which a myriad of best practices or techniques for instructors were analyzed within a single study. The literature review for Study 2 resulted in reasons as to why the three best practices implemented together in Study 1 did not always result in improvements to the students' final exam grades. Thus, the aim of Study 2 was to provide multiple best practices for instructors to utilize so that their students' performance might be improved as judged by their final exam grades.

LITERATURE REVIEW

PURPOSE OF STUDY AND IMPORTANCE OF STUDY

In an endeavor to unravel the often-overlooked facets influencing student success, this study delved into the intricate web of potential variables or circumstances that, while not categorically documented as best practice techniques, could significantly impact student performance. These factors ranged from a student's internal drive to succeed, the architectural design of a course, to the equitable practices enacted in the classroom setting.

In this context, the goal of this study was to comprehend the unique attributes inherent to individual students and ascertain which subsets of students might require supplementary or tailored instruction. A case in point is the concept of "accounting efficacy" which refers to the degree of self-belief each student possesses regarding their accounting prowess. If a student lacks accounting efficacy, an instructor may want to provide additional words of encouragement.

This study explored potential variables to assist in explaining why teaching practices not labeled as being the best could help instructors achieve student success, and it also looked at the effect of combining certain teaching practices for this same success. Some reasons as to why certain practices might lead to student success that were posed in the study include the internal motivation of students, the structure of a course, and classroom justice. This study helped explain some of the inherent differences of how students learn and explored which students may need additional or alternate instruction. An example of an inherent difference among students that was analyzed in the study is a student's accounting efficacy or their own level of confidence in their accounting ability.

The Instructional Belief Model (IBM; Weber et al., 2011) was used in the study as a framework to explain why the final grades of students might improve regardless of the implementation of successfully proven instructional techniques. According to the IBM there are three factors to how learning occurs. These three factors can be equated to a 3-legged stool with the legs being made of the course structure, the instructor's behavior (which relates to classroom justice), and student motivation. Figure 2 graphically represents the IBM.

FIGURE 2

Instructional Beliefs Model
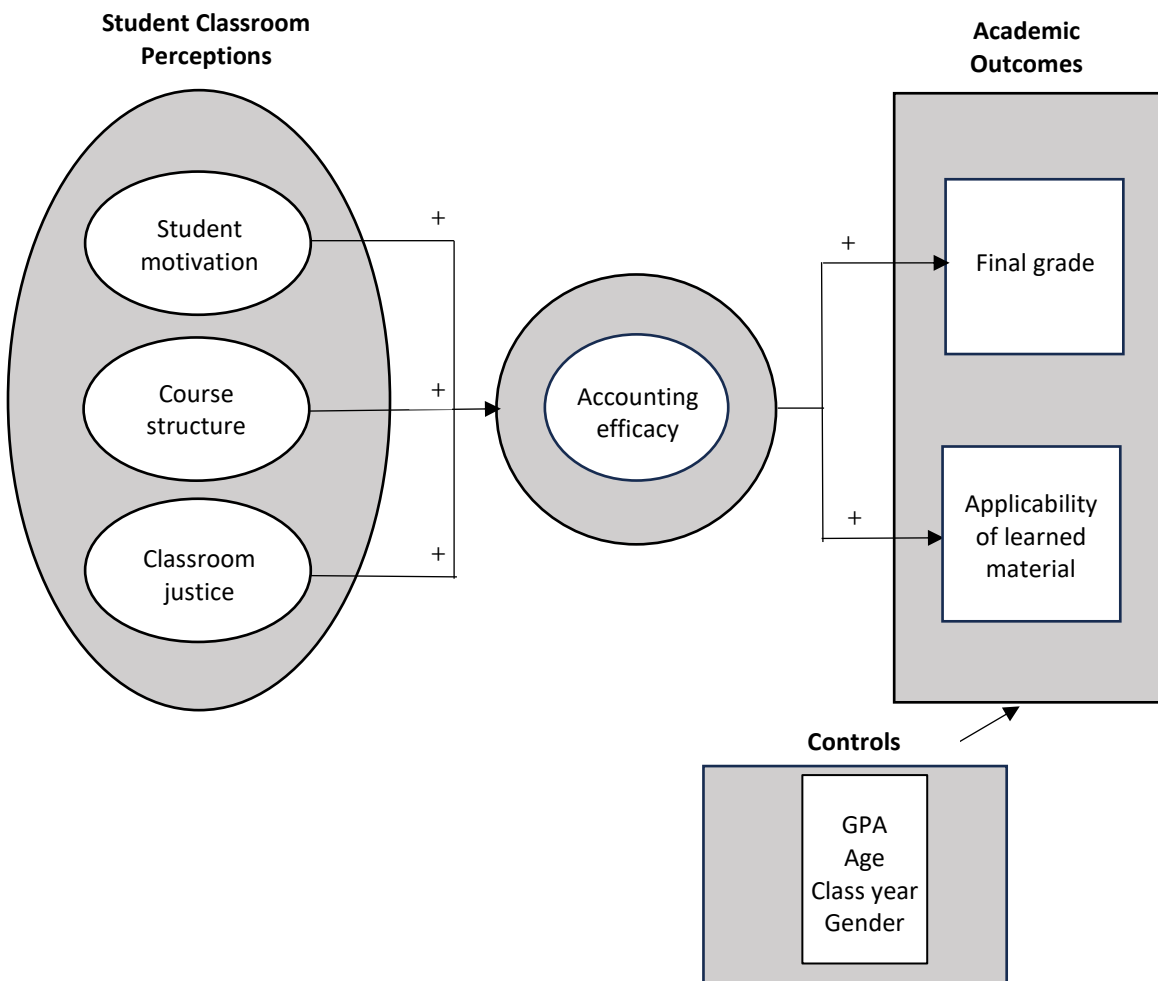
The IBM includes:

- Course-specific structure (e.g., assignment congruence). For instance, a student might consider if the grading scale is fair, the fairness of the instructor's conduct, or the fairness of assignments (Chory-Assad & Paulsel, 2004).

- Instructor behaviors (e.g., course clarity and relevance). For instance, a student might consider if the class gave them useful preparation for what they want to do in life or if the assignment load was appropriate (Mayayo et al., 2017).

- Student characteristics (e.g., conscientiousness and motivation). For instance, a student might believe learning on its own is good motivation to carry on studying (Mayayo et al., 2017).

The exploration of these considerations was guided by the IBM, as posited by Weber et al. (2011). This model serves as a valuable tool for deciphering the possible reasons behind an enhancement in students' final grades, even when the successful implementation of proven instructional techniques may not fully explain the improvement.

STUDENT MOTIVATION

It is important to consider the essential role that intrinsic student motivation plays in the realm of online instruction, especially within the context of an introductory accounting course. According to Jordan and Samuels (2020), the impact of both internal and external factors on student performance should not be disregarded. High levels of

student motivation relate to increased confidence and satisfaction (Kim & Frick, 2011), and therefore play a crucial role in academic achievement.

Mehta et al. (2017) identified the challenge of stimulating sufficient intrinsic motivation among students to complete their assignments as a thorn in the side of online learning. According to Sargent et al. (2011), students who choose to enroll in an introductory accounting course despite not being an accounting major may then experience a lack of motivation to complete course requirements.

Why such a lack of motivation occurs is something to consider. Do the students believe that the work has no meaningful value? Or is there a concern that their endeavors will not be fruitful? Or perhaps they have a sense of incompetence, a belief that they lack the skills necessary to complete the task successfully? Mkhize (2021) identifies all these as frequent impediments to motivation.

Considering this information, the following hypothesis was posed based on the complex relationship between motivation and grades:

Hypothesis 1a: There is a positive relationship between student motivation and their final grades.

APPLICABILITY OF LEARNED MATERIAL

The applicability of learned material or the practical application of acquired knowledge and skills is a crucial aspect of the learning process that has received considerable attention in educational research. With the notion that learning is most effective when individuals recognize the material's relevance to their own lives, the applicability of learned material has been a recurring theme that permeates in education literature. Dewey (1938) famously argued that education should be directly applicable to

students' prospective careers and real-world experiences. This viewpoint was further

supported by Kolb (1984), who emphasized the significance of experiential learning and

proposed that learners assimilate and retain information better when they can apply it to

concrete experiences. Consequently, the concept of "authentic learning" rose in

popularity. Lombardi (2007) defined this as learning that engages students with pertinent

and interesting real-world problems and projects. Educational scholars believe that this

type of learning is more likely to make students perceive the curriculum as valuable and

to prepare them for the complexities they will encounter in their future careers.

According to the findings of research conducted by Ambrose et al. (2010), students are

more motivated to learn when they can see the material's relevance to their objectives.

Ambrose et al. (2010) suggested that instructors can foster this motivation by

emphasizing the course material's practical implications or potential future applications.

Additionally, Problem-Based Learning (PBL) is based on the premise that

learning is most effective when students can employ newly acquired knowledge to solve

realistic problems. Hmelo-Silver (2004) noted that PBL not only fosters the development

of profound comprehension, but also fosters skills such as problem-solving and

independent learning.

However, the difficulties associated with guaranteeing the applicability of

acquired knowledge should not be understated. According to the findings of Lobato

(2006), transferring knowledge from one context to another is often difficult for students.

In addition, Lightner et al. (2007) noted that teachers may find it challenging to design

learning experiences that reflect the complexity of real-world scenarios while keeping

them both manageable and educational.

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The symbiotic relationship between student motivation and material applicability was considered. It is reasonable to assert, based on the fundamental principles of education psychology and cognitive science, that student motivation frequently fuels the desire to implement learned material. Literature extensively acknowledges the importance of motivation in the learning process (Ambrose et al., 2010; Pintrich, 2003). Motivated students demonstrate a greater propensity to engage with course material, which contributes to their having a deeper understanding of the material and more efficient knowledge retention (Wigfield & Eccles, 2000). When students perceive that the material they are learning is pertinent to real-world situations their interest and motivation tend to increase. Kolb, in his experiential learning theory (1984), asserted that learners comprehend and retain information better when they can relate it to real-world scenarios. Thus, the applicability of acquired knowledge can function as a catalyst for increased motivation. However, the relationship also operates in reverse. When students are highly motivated, they are more likely to recognize the practical applications of their education, thereby valuing it more highly. Motivated students actively seek out opportunities to implement their newly acquired knowledge, demonstrating a proactive attitude toward their education (Ryan & Deci, 2000a). Consequently, the next hypothesis was proposed:

Hypothesis 1b: Student motivation positively relates to their applicability of learned material.

COURSE STRUCTURE

In the complex labyrinth of academic performance, the course structure is frequently regarded as a crucial factor. Therefore, it is not remarkable that researchers

have repeatedly emphasized the importance of course structure in the educational journey of students (Freeman et al., 2011; Muddiman & Bainbridge, 2009). Age, gender, and prior academic accomplishments invariably leave a mark on a student's learning styles and, consequently, academic performance (Geiger & Ogilby, 2000). This axiom is especially pertinent in the context of introductory accounting courses, where the quality and structure of the course can influence students' perceptions and persuade them toward or away from an accounting major (Geiger & Ogilby, 2000).

However, what is it about the course structure that is so compelling for students' learning? It boils down to relevance and engagement. Effective course structure creates an academic environment in which the relevance of content flourishes (Van den Akker, 2007) and student tedium, a known learning inhibitor, dissipates (Uyar et al., 2011). This claim is supported by the findings of research that was conducted by Freeman et al. (2011), which demonstrated that highly structured course designs reduced failure rates and cultivated more skilled students. Their structure was a thoughtful amalgamation of the Socratic method, ungraded active-learning exercises, clicker questions, practice exams, class notes summaries, reading assessments, and in-class group activities.

In an additional step toward the development of high-quality courses, Kathuria and Becker (2021) have presented an asynchronous course quality checklist for instructors. This instrument encourages the self-evaluation of courses with the goal of aligning them with best-practice designs, highlighting the importance of course structure to the academic process.

There was a compelling, widespread consensus seen within the literature that course content, course structure, and student evaluations are interwoven to form the

fabric of academic success (K. A. Bakar et al., 2010). Consequently, the following hypothesis was proposed to be tested empirically:

Hypothesis 2a: A robust, engaging course structure positively relates to final grades.

Consider the dynamic nature of educational settings. Diverse theories, research findings, and pedagogical methodologies contribute to our comprehension of how individuals acquire knowledge. In this realm, two salient concepts will be explained—course structure and the applicability of learning.

When the theoretical landscape was explored, Kolb's experiential learning theory (1984) served as a significant lighthouse for the current study. This theory, which promotes the idea that learning is the transformative process of creating knowledge through experience, becomes particularly salient when viewed through the lens of course structure. In this context, experiential learning techniques like hands-on activities, interactive discussions, and case studies emerge as quintessential elements of learning. These elements are frequently woven into engaging course designs with the intent of enriching students' understanding and kindling their ability to apply their new knowledge in various contexts.

Another beacon of theoretical wisdom that illuminated this study was Vygotsky's (1978) sociocultural theory of cognitive development. Vygotsky's seminal work (1978) underscored the importance of social interaction and cultural context in learning. This theory suggests that nurturing an environment of collaborative learning can act as a catalyst for the social construction of knowledge, thereby amplifying its applicability. Implications can be drawn from this theory to assist with course design.

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Our theoretical understanding, however, is only as strong as the empirical evidence that supports it. In this context, the findings from numerous research studies proved to be invaluable to this study. Freeman et al. (2014), for instance, demonstrated that active learning methodologies, a cornerstone of engaging course structures, significantly bolstered academic performance and the practical application of knowledge. This is corroborated by Michael (2006), whose research revealed that engagement strategies like group discussions and problem-solving exercises fortified students' understanding and aptitude for applying course content.

Adding another layer of empirical backing included a review by Prince (2004) who proposed that both problem-based and project-based learning—the lifeblood of robust and engaging course structures—enhanced students' proficiency in implementing their knowledge in real-world scenarios. Further support of these ideas emerged from the work of Ambrose et al. (2010) who concluded that course-related factors, such as a distinct structure, real-world relevance, and active learning strategies, had a positive relationship with the perceived applicability of learning. However, while charting this academic terrain, it is indispensable to consider the myriad of external factors that contribute to this dynamic. Factors such as individual characteristics of learners and the quality of instruction (Richardson et al., 2012) all interact in nuanced ways with course structure to influence students' perceptions of the applicability of their learning. Therefore, another hypothesis was proposed:

Hypothesis 2b: A robust and engaging course structure positively relates to the perception of the applicability of learning.

CLASSROOM JUSTICE

As the enthralling domain of education was further reviewed, its complexity, diversity, and dynamism became apparent. The encountered theories, research findings, and pedagogical methodologies contributed to a greater comprehension of how learning occurs. For example, the concept of classroom justice, which entails a sense of fairness in the educational environment, is a crucial aspect of the learning environment that is frequently overshadowed by content and pedagogical concerns. Classroom justice plays a crucial role in determining the experiences and outcomes of students.

Classroom justice arises as an especially salient and influential factor within the broader concept of organizational justice, which examines perceptions of fairness within any organization, including educational institutions (Cropanzano & Greenberg, 1997). Organizational justice encompasses elements such as the integrity of course assessments and the reasonableness of anticipated outcomes and is the foundation of how students perceive their educational journey.

Two categories of justice command attention in this context: distributive and procedural justice. Distributive justice, as proposed by seminal studies, revolves around the perception of equity in the balance between effort and outcomes, evidencing itself in scenarios where a student's rewards or grades reflect their investments in terms of effort and hard work (Adams, 1965; Cropanzano & Greenberg, 1997; Kabanoff, 1991; McFarlin & Sweeney, 1992). Whereas with procedural justice the emphasis is placed on the impartiality of the processes and methods used to determine these outcomes (Leventhal, 1980). Implementing procedural justice requires consistency, accuracy, and the absence of bias in decision-making processes, as well as the representation of all involved parties.

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The connection between classroom justice and student evaluations of instructors became more apparent as the literature review progressed. In fact, the findings of several research studies have demonstrated that factors such as an instructor's level of preparedness, organization, knowledge, presentation style, accessibility, and attitude toward students influenced students' perceptions of justice (Colquitt, 2001). Studies have demonstrated that perceptions of impartiality in grading procedures can significantly outweigh the actual grades received, thereby influencing teacher evaluations (Cooper et al., 1982). The relationship between perceptions of fair grades, processes, and higher instructor ratings is a logical extension of this finding (Colquitt, 2001; Sanders & Aplin-Houtz, 2023).

Based on these insights, a vast array of broader implications was discovered. Results of other research have illuminated how students' perceptions of procedural fairness in a course can affect their motivation, affective engagement, and perceptions of the instructor's aggression (Chory-Assad & Paulsel, 2004). This suggests that the often-overlooked concept of impartiality has a significant impact on student engagement and learning experiences.

To expand on these ideas two new dimensions of justice related to the classroom were discovered: interpersonal and informational justice. Interpersonal justice refers to the respect, courtesy, and dignity that students experience when carrying out procedures or determining outcomes (Cropanzano & Greenberg, 1997), whereas informational justice refers to the clarity and transparency of explanations regarding procedures and outcomes (Cropanzano & Greenberg, 1997).

To fully comprehend the intricate interplay of these dimensions of justice, Colquitt et al.'s (2001) exhaustive review was referred to. This seminal work affirms that these dimensions—distributive, procedural, interpersonal, and informational—are not only distinct but intricately interconnected, which further complicated a comprehension of students' perceptions of classroom justice.

Accounting is a discipline known for its emphasis on precision, attention to detail, and honesty; let's move the conversation in that direction now that I have presented a firm understanding of the fundamentals of justice. In this context, the function of classroom justice becomes even more crucial. In nurturing an environment that encourages learning and facilitates the comprehension of accounting concepts, the previously discussed aspects of justice are of even greater importance.

Distributive justice ensures that students view their grades as an accurate reflection of their effort and comprehension, thereby fostering a sense of ownership and motivation. Whether these grades are determined through assessments, class participation, or group endeavors, procedural justice provides an element of fairness. Interpersonal justice fosters a respectful and supportive classroom environment that encourages students to express their doubts, collaborate, and gain knowledge. With its emphasis on openness, informational justice enables students to adequately prepare and comprehensively comprehend accounting concepts.

Armed with these insights, the uncharted territory of the effect of classroom justice on student learning outcomes was explored. In this context, a fascinating question arose: How does classroom justice affect students' final grades?

The perceived impartiality of grading procedures has been shown to relate positively with students' academic performance (Wendorf & Alexander, 2005). If students perceive the grading process to be impartial and equitable, they are more likely to feel motivated and satisfied, which may lead to improved academic performance. Chory-Assad and Paulsel (2004) provided additional evidence of the relationship between students' perceptions of classroom justice and their final grades. Therefore, a similar relationship was expected to be found with empirical testing:

Hypothesis 3a: Higher perceptions of classroom justice relates to higher final grades.

Using the multiple dimensions comprising the intricate tapestry of classroom justice: distributive, procedural, interpersonal, and informational justice, students' connection to their perception of the applicability of the learned material could also be argued. First, distributive justice encompasses the perception of fairness between effort and results, such as when a student's grades correspond to their effort and work (Adams, 1965). According to Chory-Assad and Paulsel (2004), this perception of equity of outcomes and inputs increases students' intrinsic motivation, resulting in a greater propensity for them to apply their newly acquired knowledge. When students perceive that their efforts are recognized and valued, they are more likely to engage in active learning, which creates a direct path to their applicability of knowledge.

Second, procedural justice refers to the equity of the methods and procedures used to reach a conclusion (Leventhal, 1980). When students perceive procedures such as exams, class participation, and group projects as being fair, impartial, and consistent, they

are more likely to assimilate and comprehend the course material, thereby increasing its applicability (Thibaut & Walker, 1975).

Third, interpersonal justice, another integral dimension, emphasizes impartiality in interpersonal treatment during procedure implementation (Cropanzano & Greenberg, 1997). In classrooms where teachers treat students with respect and dignity, trust and candor are fostered, which encourages students to engage more thoroughly with the course material. This increased engagement can improve students' comprehension and their implementation of the learned material (Cohen, 1988).

Fourth, when contemplating the applicability of acquired knowledge, informational justice stood out as one of the most influential factors. According to Cropanzano and Greenberg (1997), informational justice refers to the clarity and sufficiency of procedures and the explanations of outcomes. Transparency in assessment policies, clarity in assignment expectations, and timely communication of changes can impact the perception of students on the applicability of what they have learned (Sanders & Aplin-Houtz, 2023). According to Colquitt et al. (2001), when students comprehend the rationale behind their grades and course outcomes, they are more likely to perceive the value and applicability of their learning, thereby enhancing the perception of its usefulness.

By bringing the threads together of the cumulative effect of distributive, procedural, interpersonal, and informational justice, their relationship to the formulation of a conducive learning environment was observed. Such an environment would enhance students' comprehension of course material, instill a sense of fairness, and establish unambiguous connections between students' efforts and the outcomes of these efforts.

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Students would consequently be more likely to view their learning as applicable. Thus, these distinct yet intertwined dimensions of classroom justice provided strong support for the following hypothesis:

Hypothesis 3b: Higher perceptions of classroom justice relate to higher perceptions of the material's applicability.

ACCOUNTING EFFICACY

Accounting efficacy can be defined as a person's confidence in their ability to perform accounting tasks effectively. It is a component of Bandura's (1977) broader concept of self-efficacy and refers to an individual's belief in their capacity to succeed in specific situations or complete a task. Self-efficacy has been shown to have a significant impact on outcomes in numerous disciplines, including education.

In the context of accounting education, students' efficacy beliefs can have a significant impact on their approach to learning and academic performance. Studies have indicated that students with high accounting efficacy are more likely to employ effective learning strategies, demonstrate greater persistence in the face of challenges, and achieve better academic outcomes (Schunk, 1991). Students with low accounting efficacy, on the other hand, may struggle with self-doubt and dread of failure, which could impair their academic performance (Pajares & Miller, 1994).

Students' past performance is one of the primary determinants of the effectiveness of accounting classes. Individuals form efficacy beliefs based on their interpretation of past experiences, according to Bandura's (1977) social-cognitive theory. In the context of accounting education, students' experiences with accounting duties, including the results

they have achieved and the difficulties they have encountered, can influence their accounting competence.

The learning environment can also have a significant impact on accounting competence. Gist et al. (1989) discovered that encouraging and supportive learning environments could increase students' self-efficacy beliefs. In contrast, environments that are excessively competitive or hostile can undermine these beliefs. Similarly, positive feedback and recognition from instructors can increase accounting students' efficacy, whereas negative feedback can decrease it (Bandura, 1977).

Furthermore, accounting efficacy can be improved through pedagogical approaches that allow students to practice accounting tasks, receive constructive feedback, and observe the performance of others (Bandura, 1977; Schunk, 1991). For instance, collaborative learning activities can assist students in developing accounting skills and gaining confidence in their abilities, thereby enhancing their accounting effectiveness (Bandura, 1977).

Motivation, commonly regarded as the heart of learning, is a crucial ingredient in the equation for academic achievement. This is especially evident when applied to the difficult field of accounting, which requires not only technical skills but also a consistent level of engagement and investment in the learning process.

The core of the study at hand was based on Bandura's (1977) cognitive construct of self-efficacy, which states that an individual's belief in their ability to perform has a significant impact on their actual success. When this theory was applied to accounting efficacy—the belief that one can navigate the complexities of accounting competently—a direct relationship was discovered between student motivation and accounting efficacy.

With increased motivation, there is a deeper investment in the learning process. Students who delve deeper, exert more effort, and persevere longer will inevitably acquire a deeper, more comprehensive understanding of accounting principles. In turn, this fosters their confidence in conducting accounting tasks, thereby enhancing their accounting proficiency. Motivated students are more likely to embrace the difficulties of learning accounting, viewing them as opportunities for growth rather than obstacles to dread (Javadizadeh et al., 2022).

In contrast, it is almost intuitive that pupils with lower motivation may experience a decline in self-efficacy. They may tend to avoid engagement, lack the required persistence, and consequently lose confidence in their ability to perform accounting tasks. Thus, their accounting effectiveness suffers.

Schunk's 1991 study provided empirical support for this relationship between motivation and self-efficacy. Increased motivation facilitates the adoption of effective learning strategies and greater perseverance, both of which contribute to improved academic outcomes. Therefore, the following hypothesis was proposed:

Hypothesis 4a: Student motivation will positively relate to accounting efficacy.

The structure and arrangement of a course has a significant impact on students' learning experiences and their capacity to assimilate and effectively apply the subject matter. A well-structured course primarily provides clarity and direction. This paves the way for a deeper understanding of the topic (Wiggins & McTighe, 2005). In the context of accounting, with its complex calculations and concepts, such clarity is essential for equipping students with the ability to effectively address accounting challenges. As such, a well-structured course can be compared to a well-drawn map. It outlines the terrain of

knowledge to be covered, the sequence of the topics to be explored, the interrelationships between diverse topics, and the benchmarks for assessing comprehension (Boettcher, 2003). This roadmap enables students to strategize their learning journey more effectively, thereby strengthening their understanding of accounting principles and enhancing their ability to implement them.

In addition, an effective course structure necessitates a variety of instructional methods and assessment strategies to accommodate students' diverse learning styles (Felder & Brent, 2005). Such individualized approaches encourage a deeper engagement with course material, enabling students to perform accounting tasks with confidence and thereby enhancing their accounting proficiency.

Gagne and Briggs (1974) identified nine crucial events in a well-structured course: gaining attention, informing learners of objectives, stimulating recall of prior learning, presenting the content, providing learning guidance, eliciting performance, providing feedback, assessing performance, and enhancing retention and transfer. These events address various phases of the learning process, promoting an all-encompassing educational experience that will ultimately improve students' accounting proficiency.

By combining these concepts, it became evident that a well-structured course can significantly enhance accounting competence. Students' understanding, engagement, and confidence in accounting can be enhanced by providing a clear course structure that provides comprehensive coverage of course material, accommodates various learning styles, and incorporates a variety of teaching and assessment methods. This would improve their ability to effectively apply accounting principles and techniques. Therefore, the following hypothesis was proposed:

Hypothesis 4b: Course structure positively relates to accounting efficacy.

Students frequently perceive a direct relationship between their efforts and the outcomes they achieve in classrooms in which justice underpins course structure. Students' perception of justice can increase their motivation to engage deeply with a subject and foster a more robust skill acquisition process, particularly in specialized disciplines such as accounting (Chory-Assad & Paulsel, 2004). Fairness in educational contexts can increase students' intrinsic motivation, leading to improved learning outcomes. In addition, environments that promote fairness can considerably boost students' autonomous motivation, which is essential for mastering difficult subjects (Deci & Ryan, 1985).

Students in classrooms where justice prevails tend to develop a more optimistic view of their abilities. When instructors recognize students and fairly reward their efforts it strengthens their sense of self-worth and academic confidence. Positive self-evaluations can result from equitable treatment in institutional contexts (Byrne & Cropanzano, 2001). Furthermore, perceptions of impartiality in course design and classroom justice have been shown to have a substantial effect on self-esteem (Brockner & Wiesenfeld, 1996).

In learning accounting, a discipline requiring precision and analytical skills, self-efficacy of students needs to be elevated to a position of utmost importance. Students with a strong sense of self-efficacy fostered by classroom justice are better prepared to face accounting challenges (Zimmerman, 2000). Strong predictors of academic performance, notably in analytical subjects, are students' perceptions of their abilities (Hall et al., 2004; Stajkovic & Luthans, 1998).

These self-efficacy beliefs are significantly influenced by environmental factors, such as classroom justice. Pintrich and Schunk (2002) and Tschannen-Moran et al. (1998) reported that students' confidence in their abilities was bolstered by classrooms that were both supportive and equitable. Feedback from instructors that is rooted in justice and fairness can have long-term positive effects on students' academic self-efficacy (Pajares, 1992).

In conclusion, there is a distinct progression from classroom justice to self-efficacy and to accounting self-efficacy, which equips students to excel in the accounting field. Considering these findings, the following hypothesis was proposed:

Hypothesis 4c: There is a strong, positive relationship between classroom justice and accounting efficacy.

Accounting is not limited to merely crunching numbers and maintaining financial records. Understanding economic concepts, interpreting financial data, and making informed decisions based on this data is a complex combination of skills. The nature of the discipline requires a profound commitment to accuracy and a methodical approach to problem-solving. Numerous academicians have emphasized the significance of a rigorous accounting education. It has been noted that students with a solid foundation in accounting principles tend to exhibit superior problem-solving abilities and have a more analytical approach to interpreting financial data (Van den Akker, 2007). This is not surprising given that accounting is fundamentally about analyzing financial transactions and comprehending their effects on organizations' financial health. In addition, Van den Akker (2007) discovered that students who were exposed to a comprehensive accounting curriculum that emphasized both theoretical knowledge and practical application were

better prepared to handle complex accounting scenarios in real-world settings. This highlights the significance of an effective accounting education in preparing students for the challenges of the business world.

The concept of accounting efficacy is comparable to Bandura's (1977) self-efficacy theory. According to Bandura's theory, individuals who believe in their abilities are more likely to accept challenging tasks and persevere in the face of adversity. Students with a high accounting proficiency tend to be more confident in their ability to comprehend what is being presented and then apply these accounting principles. In turn, this confidence results in improved performance on assignments, projects, and examinations. In addition, Lai Mooi (2006) discovered a relationship between accounting students' self-efficacy and their academic performance. According to the results of the study, students who believed in their accounting skills were more likely to engage profoundly with course material, seek clarification when uncertain, and approach assignments with a problem-solving mindset.

Given the preceding evidence, it is clear that accounting efficacy plays a vital part in determining the academic outcomes of students. When students have confidence in their accounting skills and a solid grasp of the material, they will be better positioned to excel in their coursework. This better positioning is reflected in the students' final grades. Based on this empirical evidence and theoretical underpinnings the following hypothesis was proposed:

Hypothesis 5a: Accounting efficacy is positively related to the final grades of students.

The intricate dance between accounting efficacy and the applicability of course material is not a novel observation. Numerous academic studies have examined the relationship between the factors of accounting efficacy and the applicability of course material, the consensus being unambiguous: the two are inextricably linked.

In a study conducted by Hall et al. (2004), the authors investigated the relationship between students' perceptions of the value of their accounting education and their subsequent performance within their program. Students who perceived their coursework as having greater relevance to real-world applications were more likely to excel academically. This highlights the significance of applicability in promoting accounting effectiveness. When students see the relevance of what they have learned to the real world, they are more motivated to comprehend and apply these skills. In a similar vein, Lucas and Meyer (2005) investigated the pedagogical strategies utilized in accounting education. The authors argued that traditional methods, which frequently emphasize rote memorization, may not be the most effective at promoting genuine comprehension. They advocated instead for a more applied approach in which students are exposed to real-world accounting scenarios. Their findings indicate that this method of real-world exposure not only improves students' comprehension of the material, but also improves their ability to implement their knowledge. In addition, Jackling and De Lange (2009) conducted a longitudinal study of accounting graduates' perceptions of the value of their education. Their findings were instructive: graduates who felt that their education was more relevant to their work reported greater job satisfaction and career advancement. This suggests that students' applicability of course material has far-reaching effects on their professional lives, beyond their academic performance.

The relationship between accounting efficacy and course material applicability is bidirectional. According to Bloom (2002), students with a solid understanding of accounting principles are better able to determine the relevance of their coursework. They can more easily bridge the gap between theory and practice because they can see how their acquired learning applies to the real world. This reinforces their knowledge of the subject matter, creating a positive feedback cycle. Based on these considerations, the following hypothesis was proposed:

Hypothesis 5b: Accounting efficacy is positively related to the applicability of course material.

The pursuit of knowledge in the academic sphere requires not only the accumulation of facts but also the ability to apply an understanding of them to real-world situations. This is especially true in applied disciplines such as accounting, in which the ultimate measure of success is not merely high grades but the ability to apply the acquired knowledge to real-world scenarios. This emphasizes the intricate relationship between student motivation, accounting efficacy, and final grades.

It is impossible to overstate the significance of student motivation in academic achievement. Numerous studies have consistently demonstrated that motivated students tend to attain better academic results. For example, Pintrich (2003) discovered that motivation was an important predictor of academic performance. Students who are intrinsically motivated, i.e., those who find enjoyment in the learning process, tend to engage with the material more profoundly, resulting in greater comprehension and retention. This intrinsic motivation, fueled by a genuine interest in the subject matter, can

encourage students to devote more time and effort to their studies, thereby increasing their likelihood of earning higher grades.

As a concept, accounting efficacy transcends mere knowledge. It encapsulates the student's confidence in their ability to effectively employ accounting principles. In his seminal work on self-efficacy, Bandura (1986) proposed that individuals with high self-efficacy were more likely to undertake difficult tasks, persevere in the face of adversity, and achieve superior results. In terms of accounting education, this means that students with high accounting efficacy are not only confident in their knowledge but also in their ability to implement it in real-world situations. This confidence, which is the result of repeated success and positive feedback, can result in improved academic performance. To that end, Hall et al. (2004) discovered a positive relationship between accounting self-efficacy for students in an accounting course and their course performance.

While grades are frequently viewed as the culmination of academic endeavors, they are in many ways a reflection of the academic voyage. They encapsulate the time spent studying, the breadth of comprehension, and the aptitude for applying knowledge. According to Bandura (1977), there is a significant relationship between self-efficacy beliefs and academic outcomes, such as grades.

When these threads are woven together—student motivation, accounting efficacy, and final grades motivated pupils are more likely to engage with the material, resulting in a greater sense of accounting competence. This efficacy can result in improved academic outcomes, as indicated by higher final grades. This complex interaction was captured in the following proposed hypothesis:

Hypothesis 6a: Accounting efficacy mediates the relationship between student motivation and their final grades.

A cornerstone of the scholarship about education is learning frameworks. As attested by Hu and Yeo (2020), a learning framework is a seminal reference point for delineating the divergent learning journeys students may pursue. Entwistle and McCune (2004) elucidated those distinct motivations and learning processes, breaking them down into deep and superficial learning which is different than merely looking at the varying levels of student effort or dedication. Therefore, it should not be assumed that profound learning and surface learning are opposites. Rather, they are complementary forces required to account for the entire continuum of student learning.

Imagine a student engaged in deep learning who is constructing a network of interconnected ideas, analyzing evidence, and relentlessly pursuing the essence of a subject. This kind of zealous pursuit of knowledge is frequently associated with enhanced performance (Byrne et al., 2002; Davidson, 2002; Duff, 2004). Now, consider advanced-level students who are motivated by an intrinsic interest in their subject matter (Biggs, 1987). Such students most likely engage in both holistic and serialist strategies, such as constructing networks of related ideas and pursuing overarching principles (Entwistle, 2000). Serialist strategies include dissecting evidence, examining the soundness of arguments, and closely monitoring an understanding of the subject.

Surface learning, by comparison, is a narrower path characterized by memorization and a concentration on curriculum-based learning (Beattie et al., 1997). Surface learning is typically motivated by a fear of failure. It is characterized by a desire to meet the bare minimum requirements of a task and frequently relies on strategies

where little thinking is required, such as memorization and a focus on procedures and isolated details (Biggs, 1987; Marton, 1983).

According to a longitudinal study conducted by Gow et al. (1994), as students progressed through an accounting program, they inclined more and more toward surface learning. Beattie et al. (1997) concluded that these tendencies were more of a result of the educational environment rather than innate student characteristics. Considering these findings, the following hypothesis was proposed:

Hypothesis 6b: Accounting efficacy serves as a mediating agent in the relationship between student motivation and their applicability of course material.

In the universe of academia, especially in the domain of accounting education, certain factors make a significant impact on students' learning outcomes. Two such factors are course structure and accounting efficacy, with the final grades of students standing as the observable result of this interplay.

Course structure essentially is the skeleton around which the flesh of learning is built. It comprises the order of topics, the methods of instruction, the nature of assignments, and the mode of assessments (Cuseo, 2007). The structure plays a pivotal role in guiding students through the curriculum, making the learning process more manageable and digestible. Importantly, a well-structured course can provide a clear roadmap for students, easing their cognitive load and allowing them to focus more on understanding and applying the concepts (Winkelmes et al., 2016).

Accounting efficacy refers to the confidence that students have in their ability to understand and apply accounting principles effectively (Bandura, 1977). This is not

merely about rote learning of theories or equations. Rather, it's about the belief in one's capabilities to solve complex accounting problems using the acquired knowledge.

The final grades of students, then, serve as a concrete representation of their understanding and application of the course material. They are a visible manifestation of the students' mastery of the subject matter. A well-structured course lays down a clear path for students, making the material more accessible and less overwhelming. This, in turn, allows students to understand and absorb accounting concepts more effectively and enhances their confidence in their abilities, i.e., their accounting efficacy (Bandura, 1977). Further, a higher level of accounting efficacy is likely to translate into better performance on assignments, projects, and exams, leading to improved grades (Pajares, 1992). After all, a student who believes in their abilities is likely to be more persistent, resilient, and successful in their academic tasks.

Considering these connections, it became clear that accounting efficacy serves as a bridge between course structure and the final grades of students. Therefore, the following hypothesis was proposed:

Hypothesis 7a: Accounting efficacy mediates the relationship between course structure and the final grades of students.

Enhancing the structure of accounting courses and fostering accounting efficacy can be vital strategies to optimize students' learning outcomes. Throughout the annals of academia, there is an unshakeable truth that the structure of a course greatly influences not only the understanding but also the application of course material by students. The course structure dictates the pacing, the depth, and breadth of the course, all of which

have a profound impact on the learner's ability to assimilate and use the knowledge gained (Cuseo, 2007).

Accounting, as a discipline, is particularly dependent on the efficacy of its students—their belief in their capabilities to apply the principles and methods they have learned. Bandura (1977) suggests that individuals who have faith in their abilities are more likely to take on challenges and persist in their efforts, ultimately performing better in their chosen tasks.

The applicability of course material, on the other hand, refers to the degree to which students can apply what they've learned in real-world scenarios. It is a tangible measure of the usefulness of the knowledge gained from a course and is a critical determinant of the value of an educational program.

Let's consider these elements in relation. A well-structured course in accounting provides a logical and comprehensible flow of content, reducing the cognitive load of students and facilitating their understanding (Winkelmes et al., 2016). This understanding, when internalized, bolsters students' accounting efficacy or their belief in their capabilities to apply accounting principles effectively.

When students possess high accounting efficacy, they are more likely to successfully apply the course content in practical situations. This is because confidence in one's abilities leads to better problem-solving strategies, higher resilience in the face of challenges, and an overall enhanced performance (Pajares, 1992).

A well-structured course fosters higher accounting efficacy for students, which, in turn, leads to students having a greater applicability of course material. Thus, accounting efficacy serves as the bridge between how a course is structured and how well the

knowledge gained from it can be applied in practice. This suggests that nurturing accounting efficacy is crucial in maximizing the real-world application of the knowledge gained from a well-structured accounting course. This to this cogent proposal:

Hypothesis 7b: Accounting efficacy mediates the relationship between course structure and the applicability of course material.

Education is essential to the development and progress of society. In this context, two critical factors, classroom justice and accounting efficacy, have been identified as influential to the educational outcomes of students, particularly those in accounting (Bong & Skaalvik, 2003; Chory-Assad & Paulsel, 2004).

The concept of classroom justice, a descendant of organizational justice, refers to a student's perception of fairness in the academic environment (Chory-Assad & Paulsel, 2004). It encompasses the principles of distributive justice, the fairness of educational outcomes, procedural justice, and the methods used to attain these outcomes. The results of extensive research has indicated that a sense of classroom justice is essential for nurturing a conducive learning environment and positively influencing students' engagement, satisfaction, and academic performance (Chory-Assad & Paulsel, 2004; Wubbels & Brekelmans, 2005).

Efficacy, particularly within specific disciplines such as accountancy, is a strong indicator of academic success. Bandura's (1977) theory on self-efficacy suggests that students with a strong conviction in their abilities, referred to as accounting efficacy in this context, are likely to excel in their studies. Specifically, students who perceive themselves to be effective in accounting are more likely to demonstrate resilience when confronted with complex accounting problems, implement effective learning strategies,

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and persist in their efforts, all of which contribute to improved academic performance (Pajares, 1992).

A perceived sense of justice in the classroom likely contributes to a student's motivation and engagement, and when students feel engaged and motivated, they are more likely to acquire a strong belief in their ability to master the subject matter (Tinto, 2012). This enhanced perception of efficacy may result in higher final grades in an accounting course (Bandura, 1977). This line of reasoning led to a significant proposition that merited empirical investigation:

Hypothesis 8a: Accounting efficacy mediates the relationship between classroom justice and the final grades of students.

The existing literature offered a compelling case for the interplay between perceived justice, efficacy, and academic success. By shedding light on this potential relationship, it could pave the way for innovative pedagogical strategies designed to foster a sense of justice and efficacy in the classroom, ultimately contributing to improved student learning outcomes.

Education is about more than just getting excellent grades; it also encompasses the practical application of acquired knowledge. Understanding the factors that influence the applicability of course material is crucial, particularly in specialized fields such as accounting. For this, fundamental concepts were examined: classroom justice and accounting effectiveness.

Classroom justice, a term profoundly rooted in the broader concept of organizational justice, refers to the perceived fairness of the academic environment as perceived by students (Chory-Assad & Paulsel, 2004). This fairness is evaluated through

the lens of distributive justice, or the equity of educational outcomes, and procedural justice, or the fairness of the procedures used to attain these outcomes. Multiple studies have confirmed the positive impact of classroom justice on student satisfaction, engagement, and overall learning experience (Chory-Assad & Paulsel, 2004; Wubbels & Brekelmans, 2005).

Simultaneously, the concept of efficacy, particularly accounting efficacy, has a significant impact on the academic trajectories of students. Based on Bandura's (1977) self-efficacy theory, accounting efficacy alludes to students' confidence in their capacity to comprehend and excel in accounting. This self-confidence can encourage students to implement effective learning strategies and foster a persistent attitude, which are all conducive to improved learning outcomes (Pajares, 1992).

By fostering an equitable and fair learning environment, classroom justice can increase student motivation and engagement (Tinto, 2012). When students are motivated and engaged, their confidence in their abilities, or their accounting efficacy, is likely to grow. This enhanced sense of efficacy can then pave the way for improved comprehension and application of course material in real-world situations (Pajares, 1992). Considering this, the following hypothesis was proposed:

Hypothesis 8b: Accounting efficacy mediates the relationship between classroom justice and students' applicability of course material.

METHODS

In this section, a comprehensive overview will cover the methodologies utilized in the study. Comprehensive information will be presented regarding the collected data and the procedures that followed. Each of the employed measures will be discussed and

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descriptive statistics provided for them. In addition, the method by which each hypothesis was analyzed, and its outcomes will be described.

This investigation began by examining the diverse characteristics of the participant group. An in-depth examination of participant demographics included crucial characteristics such as country of origin, grade point average (GPA), age, class year, and gender. This comprehensive demographic portrait presented a nuanced depiction of the diverse backgrounds and profiles of the individuals who participated in the study. In addition, the procedure that guided the data collection effort from its inception to its conclusion will be described. A methodological approach was constructed to ensure the validity and reliability of the data collected.

Subsequently, the specific measurements used in the study and their descriptions will be elaborated on, providing pertinent descriptive statistics. In addition, the methodologies used to test each of the hypotheses that were formulated in the study will be described.

By interweaving participant demographics, a detailed process description, and an overview of the measures and analytic methodologies, the methods section will provide a comprehensive and transparent account of the framework that guided the data collection and subsequent analysis. This comprehensive explanation invites readers to navigate through the methodological complexities that underpinned the entirety of the research endeavor.

PARTICIPANTS

To answer the proposed research question, Table 4 describes the inclusion criteria implemented:

TABLE 4

Inclusion Criteria

Students	College
Countries	United States, Canada, and United Kingdom
Accounting course	Completed in past 12 months

Participants included adult (18+) college students who had completed an online accounting course within the past 12 months. Participants could be from any grade level, allowing for freshman, sophomore, junior, or senior level students to engage in the study. The students had to be willing to self-report their final grade of the course and agreed to participate in the confidential study. Participants could identify as men, women, or gender diverse, and could be from any age group, racial or ethnic background, and sexual orientation. Appendix I presents the participant informed consent form used for surveying.

To gather a sample meeting the inclusion criteria ($N \leq 300$), a multiple phased approach was taken. Originally, I asked professors in several universities to give the survey to their students; this resulted in 65 surveys returned. As the window of opportunity narrowed, a second phase was begun in which I contacted the company Prolific about accessing their global panel. Initially, Prolific identified 657 panel members from the United States, Canada, and United Kingdom who fit the criteria of: Student = "Yes" and Course = "Business" or "Accounting." This group was then given a one sentence screener survey: "Have you taken an online accounting course in the past 12 months?" For this screening survey, the members were each paid $0.25. The results of

this screening were 223 potential participants. The full survey was then launched by

Prolific to the 223 potential participants. The Prolific survey remained open for

approximately one week. Survey data was received from 141 participants (63.2% of the

223 identified from the screening survey). Each Prolific participant was paid $3.00 for

the completed survey, with another $1.00 per participant paid to the Prolific company as

an administrative fee.

After I received a total of 206 surveys (141 from Prolific and 65 from three

separate solicitations given by professors), I combined the data sets and scrubbed the

data. Scrubbing the data included: (a) removing 11 surveys which were discovered to

have significant questionnaire data missing, (b) updating 4 surveys for missing age

demographics by reviewing Prolific's full database, (c) converting three U.K. variables

(course percent, cumulative percent, and class year) into U.S. variables (final grade,

GPA, and class year), and (d) changing data for participants who identified themselves as

two or more races into a single multiple race response.

After the data removal and updating the data conversion, the resulting data set

included 195 complete surveys ($N = 195$). Figure 3 presents the methodology of the

survey collection.

FIGURE 3

Survey Collection Process

Table 5 presents a graphical representation of the population demographics.

TABLE 5

Population Demographics

Demographic	$N = 195$	%
Country		
Canada	10	5.1
U.K.	70	35.9
U.S.	115	59.0
Age		
18–20	21	10.8
21–23	35	17.9
24–26	35	17.9
27–30	38	19.5
31–35	25	12.8
36–49	29	14.9
50–60	11	5.6
Undisclosed	1	0.5
Gender		
Male	106	54.4
Female	86	44.1
Nonbinary	3	1.5
Race		
White or Caucasian	120	61.5
Asian	21	10.8
Black of African American	25	12.8
Hispanic, Latino, or Spanish origin	15	7.7
Middle Eastern or North African	1	0.5
Multiracial	11	5.6
Undisclosed	2	1.0

Participants in the study ($N = 195$) had a diverse range of demographic characteristics. The predominant number of survey respondents, 115 (59.0%), were from the United States, likely due to the initial 50 surveys that were received from U.S. accounting students. Additionally, the 70 (35.9%) U.K. respondents came from a global panel mixed with students from the United Kingdom, United States, and Canada.

The students' ages ranged from 18 to 60 years old, with a mean age of 29.5 years ($SD = 9.44$). A significant number of survey respondents (66.1%) were under the age of 30 and approximately half (46.6%) fell within the traditional college age range of under 24 years old.

The gender distribution was predominantly male (54.4%); females accounted for 44.1% of the participants, and non-binary/third gender individuals made up 1.5% of the sample. Similarly, the world population by gender was slightly skewed to males.

The racial composition of the participants was primarily White or Caucasian (61.5%), with the remaining participants identifying as Asian (10.8%); Black or African American (12.8%); Hispanic, Latino, or Spanish origin (7.7%); Middle Eastern or North African (0.5%); and multiracial or undisclosed (6.6%).

Table 6 presents a graphical representation of the participants' education.

TABLE 6

Survey Participants' Education

Education	$N = 195$	%
Grade/Class year		
Freshman	30	15.4
Sophomore	37	19.0
Junior	55	28.2
Senior	73	37.4
Majors		
Accounting	208	72.2
Business	80	27.8
Final grade		
A+	74	37.9
A	40	20.5
A-	31	15.9
B+	27	13.8
B	9	4.6
B-	7	3.6
C+	1	0.5
C	4	2.1
C-	0	0.0
D+	0	0.0
D+	0	0.0
D-	0	0.0
F	1	0.5
Undisclosed	1	0.5
GPA		
A+	59	30.3
A	63	32.3
A-	53	27.2
B+	6	3.1
B	1	0.5

Education	N = 195	%
B-	6	3.1
C+	0	0.0
C	1	0.5
C-	0	0.0
D+	0	0.0
D+	0	0.0
D-	0	0.0
F	4	2.1
Undisclosed	2	1.0

The participants' current grade level or year of education was relatively balanced across all four years, with the largest group being seniors or 4th year students (37.4%), followed by juniors or 3rd year students (28.2%), sophomores or 2nd year students (19.0%), and freshman or 1st year students (15.4%). A significant majority of survey respondents were pursuing an accounting major (72.2%), while the remaining respondents were pursuing a general business major (27.8%). Final course grades were skewed heavily towards an A level (74.3%); followed by B (22.0%); C (2.6%); D and F (1.1%). These final course grades were related to the students' grade point average with the highest percentage of students having an A (89.8%), followed by those with a B (6.7%), and then those below a B (3.5%).

The reason the data was skewed so heavily to students having As and Bs as their final grade with a GPA over 90% can be attributed to having a majority of junior and senior accounting majors (65.6%) who completed the survey. Junior and senior students typically are more in tune with the material in accounting courses than lower-level students.

MEASURES

The results of a Likert scale survey were received from 195 participants. The 36-question survey gathered information on four different measures. The measures were student motivation, course design, classroom justice and accounting efficacy.

DATA SCREENING

Upon completion of the data collection, a data screening was conducted, which is the process of "cleaning" the data to ensure questionnaire participant responses are valid and that they make sense. The raw data was examined for normality, missing data, outliers, and extreme scores relative to the rest of the data set. In doing so, "univariate outliers" were screened, meaning one variable at a time was analyzed using z scores and box plots. Meyers et al. (2017), who recommend a z score of ± 2.50 as a cutoff for univariate outliers, was referred to during this process. Descriptive statistics were conducted, computing the mean, standard deviation, skewness, and kurtosis of the data set to assess the shape of the distribution. Meyers et al. (2017) was referenced regarding levels of skewness or kurtosis as being high for the values of ± 1.00. An analysis was also conducted for any multivariate outliers to understand patterns and relationships involving the variables of the study, considering that multivariate outliers can also influence normality. The data was assessed for multicollinearity, which is an indication that predictors are strongly related. Additionally, an indication of strongly related predictors was set to 0.70 to understand the contributions of each moderator (Stevens, 2009). Outlier data was also reviewed for the purposes of data validity. Finally, in addition to the individual measurement models that were used, a measurement model was conducted for all three measures. The analysis of each measure will be discussed next.

STUDENT MOTIVATION

Scholars believe the internal motivation of students is directly related to their final course grades and to any deep learning they experience (Bengtsson & Teleman, 2019). If a student is positively motivated, then it is anticipated that they will receive better grades and have a better learning experience in comparison to a student who has low motivation. However, a student's motivation, positive or negative, can be mediated (interfered with) in relationship to the efficacy or confidence the student has in an accounting course. The participants' overall motivations were explored in this study by means of questions garnered from Mayayo et al. (2017). Survey questions included asking about the intrinsic motivation participants had for their college accounting course.

To assess the participants' perceptions of how the material in their accounting course was applicable to their current and future academic efforts, the shortened form of the measure for student motivation developed by Mayayo et al. (2017) was used. This single factor measure contained seven questions on a seven-point Likert-like scale where 1 = *strongly disagree* and 7 = *strongly agree*. Sample items included: "I feel motivated to continue studying accounting in the future" and "Learning on its own is a good motivation for carrying on studying."

The data were screened for outliers and normality, and none of the items exhibited high skewness or kurtosis exceeding the cutoffs of $\mp$ dd 2.00 for skewness and $\mp$ 7.00 for kurtosis (Hair et al., 2013). Skewness values ranged from -2.42 to 0.84, and kurtosis values ranged from -0.78 to 6.32. Regarding skewness, when the mean is greater than the median, this represents a right skew, the mean overestimating the most common values in a positively skewed distribution. Conversely, when the distribution is left skewed, the

mean is less than the median and the mean underestimates the most common values and has a negatively skewed distribution. Univariate outliers were examined using box plots for extreme cases. Four univariate outliers were detected, and one was extreme. A Shapiro-Wilk test revealed that the data were not normally distributed ($W = 0.97$, DF $= 187$, $p < 0.001$). The histogram (Figure 4) also showed that the data displayed a right skew.

FIGURE 4

Student Motivation - histogram
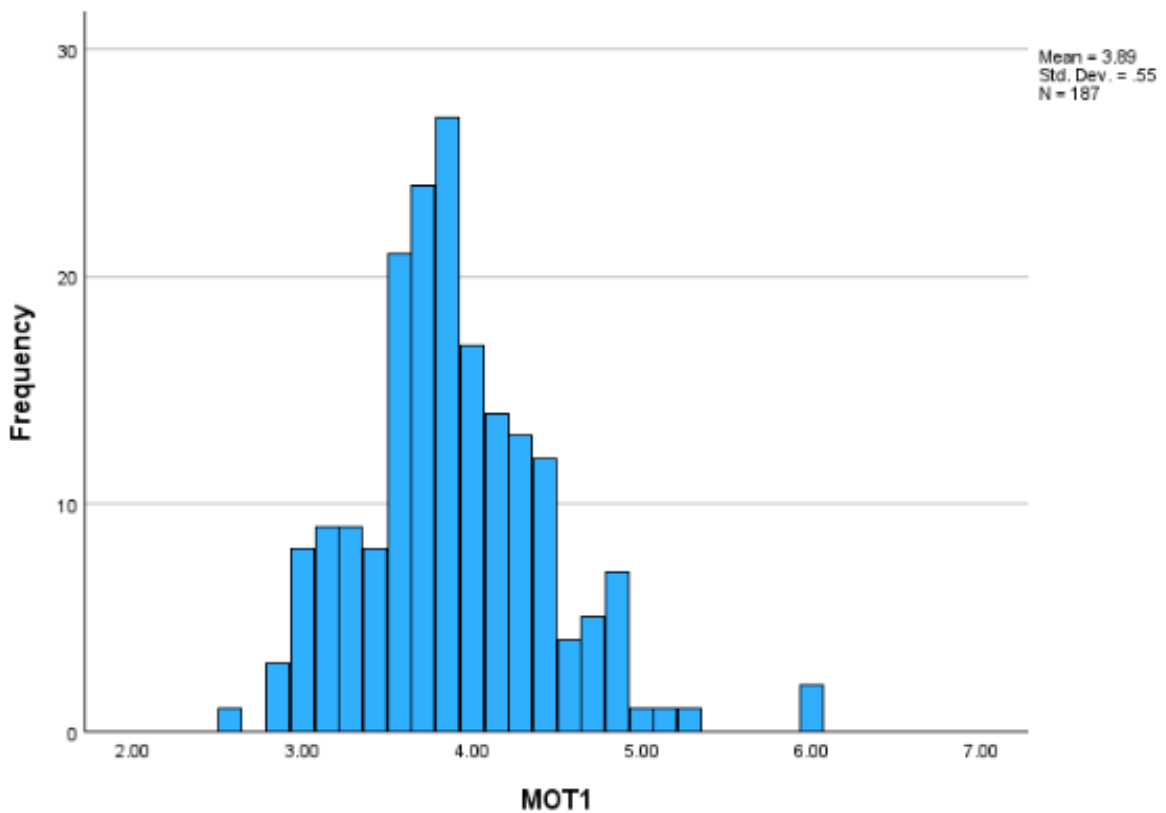
The box plot (Figure 5) describes the minimum, first quartile, median, third quartile, and maximum of the data.

FIGURE 5

Student Motivation – Box Plot
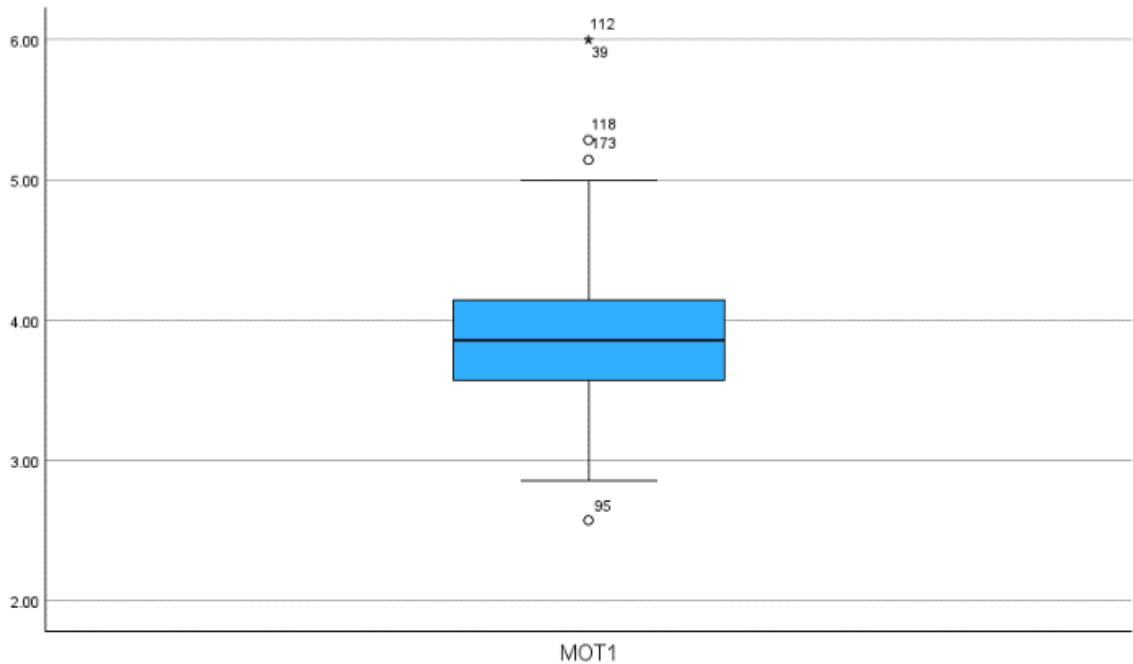
From the collected data from the sample, there were relatively few cases in which participants did not complete all seven items of the questionnaire. Questions 1, 2, 6, and 7 each had one missing item. Upon reviewing the missing data at the individual case level, each missing value occurred only once per participant.

The central tendency of the construct was assessed next. The mean value was 3.89 ($SD = 0.55$), and the range of the mean values between the participants ranged from 2.44 to 5.46. Owing to the central tendency of the construct being right skewed, it was ascertained that the participants reported feelings of high student motivation.

As part of the analysis to determine if the measure was valid and reliable, Cronbach's alpha was first used to assess the overall construct and to determine which

items if removed would improve the score. One item was identified. Next, a confirmatory

factor analysis (CFA; Selim, 2007) was conducted using the software Jamovi (The

Jamovi Project, 2023) to determine how well the data fit the items in the measure. The

overall measure displayed a poor fit ($X^2_{(14)}$ = 75.6, $p < .001$, TLI = 0.75, CFI = 0.83,

SRMR = 0.07, RMSEA = 0.15). With the aim of identifying factor loadings set at a

minimum value of 0.50 (Howard, 2016), three items were identified below the minimum

value. The composite reliable (CR) was 0.78 and the average variance extracted (AVE)

was 0.36. Considering that the minimum value of 0.70 for CR (Wasko & Faraj, 2005)

was met but the minimum value for AVE of 0.50 (Hair et al. (2010) was not, it was

determined that the validity and reliability of the measure would improve if the three

items were removed. After removing the items, the model fit and the factor loading was

assessed again with a CFA. The final model had an improved fit ($X^2_{(1)}$ = 3.62, $p = 0.057$,

TLI = 0.94, CFI = 0.99, SRMR = 0.02, RMSEA = 0.10). In addition to an improved

model fit, the CR (0.80) and AVE (0.51) both improved. The final Cronbach's alpha was

0.80. Considering that Mayayo et al. (2017) found the student motivation measure to

have a Cronbach's alpha of 0.93, the measure in this study was slightly less reliable than

the original usage but was useable within modern scholarship standards. Please see Table

7 for the details of the analysis.

TABLE 7

Student Motivation - Cronbach's Alpha

Construct	Question	Loading	Cronbach's α if dropped	Cronbach's α (Final)	CR[a]	AVE
Student motivation				0.80	0.80	0.51
	2. I don't expect to continue studying when I leave school.	0.72	0.72			
	3. I feel motivated to continue studying accounting in the future.	0.55	0.75			
	6. I can't find important reasons to continue studying.	0.75	0.72			
	7. In my situation, continuing accounting studies seems like a waste of time.	0.80	0.71			

Note: Bold indicates items removed.

[a] CR = Composite reliable

COURSE STRUCTURE

Course structure, design, and delivery were scrutinized to determine whether

students had positive attitudes toward them. When students feel that a course, its content,

and its assessments are designed to help them succeed, then their overall performance has

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been shown to be better (M. A. A. A. Bakar et al., 2019). Questions were used from the work of M. A. A. A. Bakar et al. (2019) to determine the importance of course structure on students being prepared for their work life after college and to determine the importance the course had to their college career at the time they were enrolled.

To assess the participants' perceptions of how the material in their accounting course was applicable to their current and future academic efforts, the shortened form of the measure for course structure was adapted from the work of Mayayo et al. (2017) and M. A. A. A. Bakar et al. (2019). This single factor measure contained four questions on a seven-point Likert-like scale in which 1 = *strongly disagree* and 7 = *strongly agree*. Sample items included: "The classes gave me useful preparation for what I want to do in life" and "The assignment load in the online accounting course was appropriate."

The data were screened for outliers and normality, and none of the items exhibited high skewness or kurtosis exceeding the cutoffs of $\mp$ 2.00 for skewness and $\mp$ 7.00 for kurtosis (Hair et al., 2013). Skewness values ranged from -2.40 to -1.55, and kurtosis values ranged from 1.11 to 6.01. Regarding skewness, when the mean is greater than the median, this represents a right skew, the mean overestimating the most common values in a positively skewed distribution. Conversely, when the distribution is left skewed, the mean is less than the median and the mean underestimates the most common values and has a negatively skewed distribution. Univariate outliers were examined using box plots for extreme cases. Thirteen univariate outliers were detected, and five were extreme values. A Shapiro-Wilk test revealed that the data were not normally distributed ($W =$ 0.82, DF = 187, $p < 0.001$). The histogram (Figure 6) also showed that the data displayed a left skew.

FIGURE 6

Course Structure - Histogram
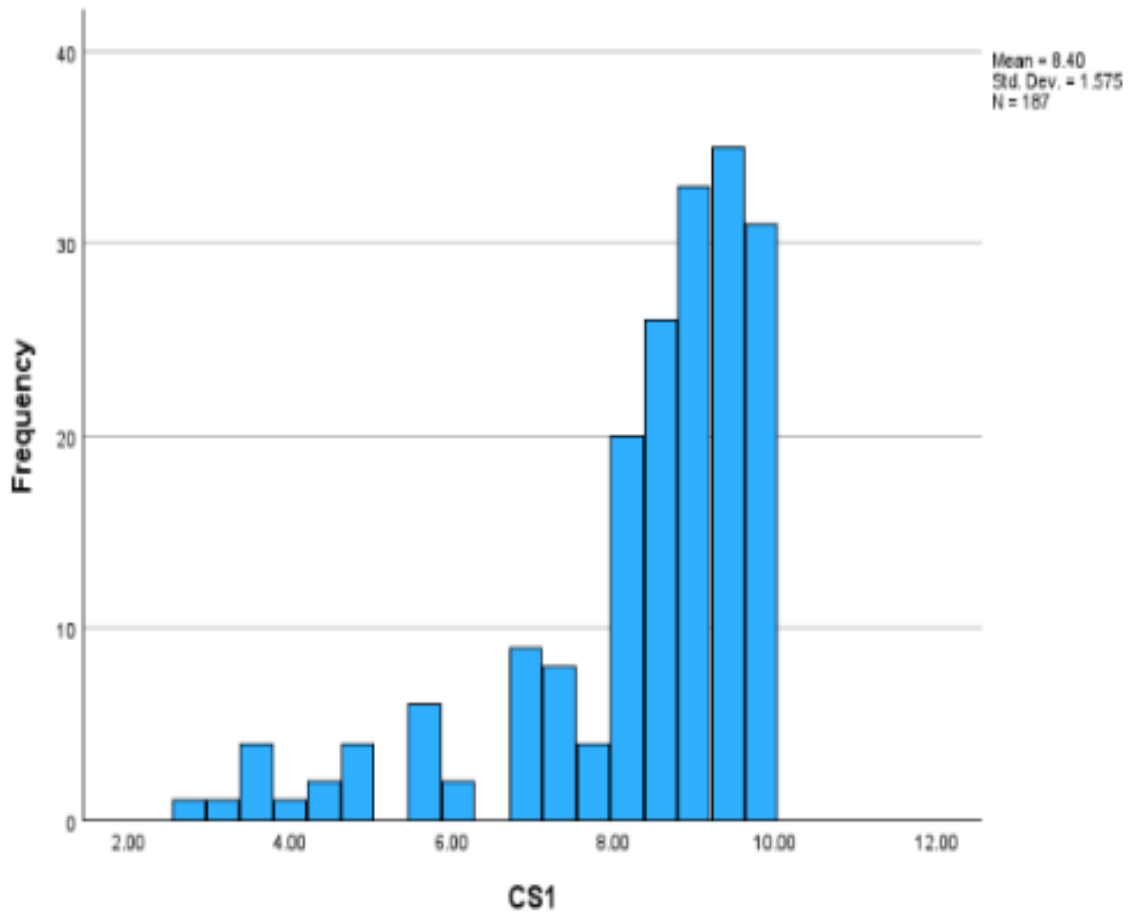
The box plot (Figure 7) describes the minimum, first quartile, median, third quartile, and maximum of the data.

FIGURE 7

Course Structure – Box Plot
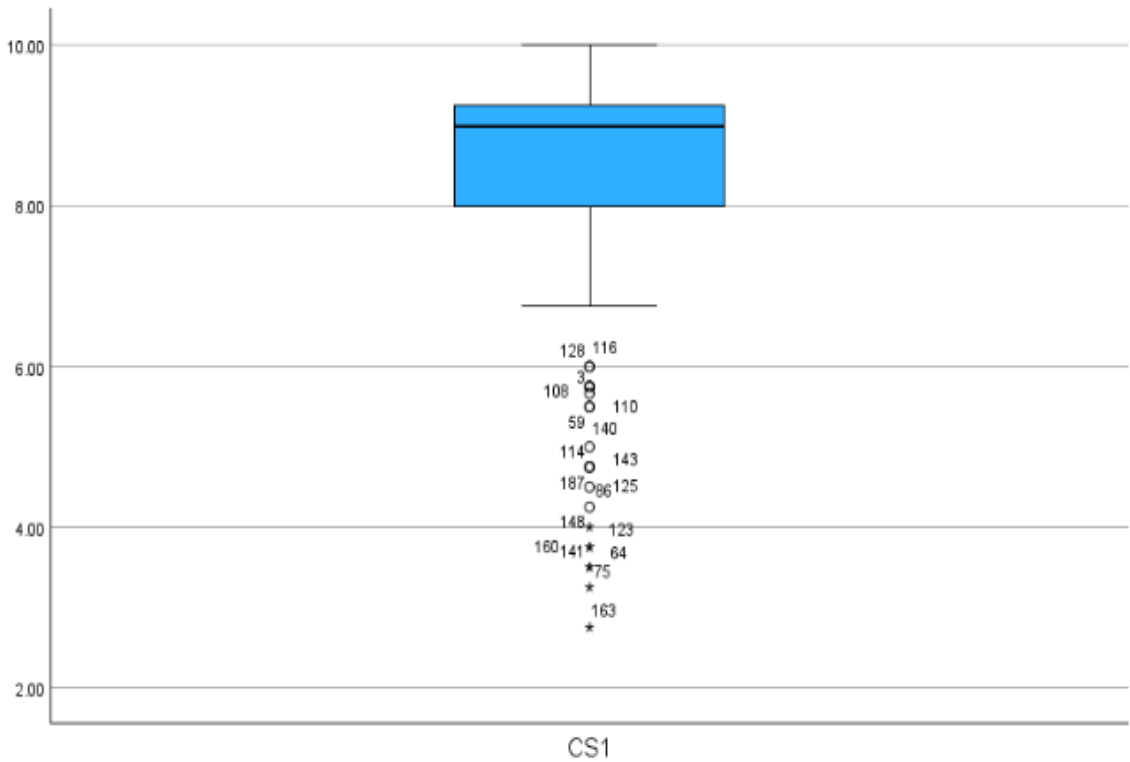
In the case of the collected data from the sample, there were relatively few

instances in which participants did not complete all four items of the questionnaire.

Questions 1, 2, and 3 each had missing items. Questions 2 and 3 had one missing item,

while Question 1 had two missing items. Upon reviewing the missing data at the

individual case level, each missing value occurred only once per participant.

The central tendency of the construct was assessed next. The mean value was 8.40

(SD = 1.58), and the range of the mean values between the participants ranged from 8.10

to 8.77. Owing to the central tendency of the construct being right skewed, it was

ascertained that the participants reported perceptions of a high degree of course structure.

As part of the analysis to determine if the measure was valid and reliable, Cronbach's alpha was first used to assess the overall construct and to determine which items if removed would improve the score. No items met this criterion. Next, a CFA was conducted using the software Jamovi (The Jamovi Project, 2023) to determine how well the data fit the items in the measure. The overall measure displayed an excellent fit in all indices other than X^2 and RMSEA ($X^2_{(2)}$ = 8.68, p =.013, TLI = 0.93, CFI = 0.98, SRMR = 0.03, RMSEA = 0.13). With the aim of identifying factor loadings with a minimum value of 0.50 (Howard, 2016), no items were identified below the minimum value. The CR was 0.83 and AVE was 0.55. Considering that the minimum value for CR is 0.70 (Wasko & Faraj, 2005) and the minimum value for AVE was met (0.50), it was determined that the validity and reliability for the measure were appropriate for the analysis. The final Cronbach's alpha was 0.80. Please see Table 8 for the details of the analysis.

TABLE 8

Course Structure – Cronbach's Alpha

Construct	Question	Loading	Cronbach's α if dropped	Cronbach's α (Final)	CR	AVE
Class structure				0.80	0.83	0.55
	1. The coverage/content of the online accounting course was about right for a semester course.	0.78	0.76			
	2. The classes gave me useful preparation for what I want to do in life.	0.64	0.80			
	3. The topics of the online accounting course were appropriate.	0.69	0.79			
	4. The assignment load in the online accounting course was appropriate.	0.83	0.75			

CLASSROOM JUSTICE

Classroom justice can be measured by students' perceptions of fairness and respect in the classroom. Fairness and respect are often manifested for students in the way the course grading scale is set up, in the way the instructor conducts the class, and in

the level of difficulty and appropriateness of the course content (Chory-Assad & Paulsel, 2004). Chory-Assad and Paulsel (2004) offer appropriate questions to measure classroom justice that were used in this study. Positive classroom justice is frequently reflected in positive final grades for students.

To assess the participants' perceptions of how the material in their accounting course was applicable to their current and future academic efforts, the shortened form of the measure for classroom justice developed by Chory-Assad and Paulsel (2004) and Mayayo et al. (2017) was used. This single factor measure contained seven questions on a seven-point Likert-like scale where 1 = *strongly disagree* and 7 = *strongly agree*. Sample items included: "The way the instructor conducted class" and "The amount of work required to get a good grade in the course."

The data were screened for outliers and normality, and none of the items exhibited high skewness or kurtosis exceeding the cutoffs of $\mp$ 2.00 for skewness and $\mp$ 7.00 for kurtosis (Hair et al., 2013). Skewness values ranged from -1.30 to -1.93, and kurtosis values ranged from 0.23 to 2.95. Regarding skewness, when the mean is greater than the median, this represents a right skew, the mean overestimating the most common values in a positively skewed distribution. Conversely, when the distribution is left skewed, the mean is less than the median and the mean underestimates the most common values and has a negatively skewed distribution. Univariate outliers were examined using box plots for extreme cases. Four univariate outliers were detected, but none were extreme values. A Shapiro-Wilk test revealed that the data were not normally distributed ($W = 0.88$, DF = 19, $p < 0.001$). The histogram (Figure 8) also showed that the data displayed a left skew.

FIGURE 8

Classsroom Justice - Histogram
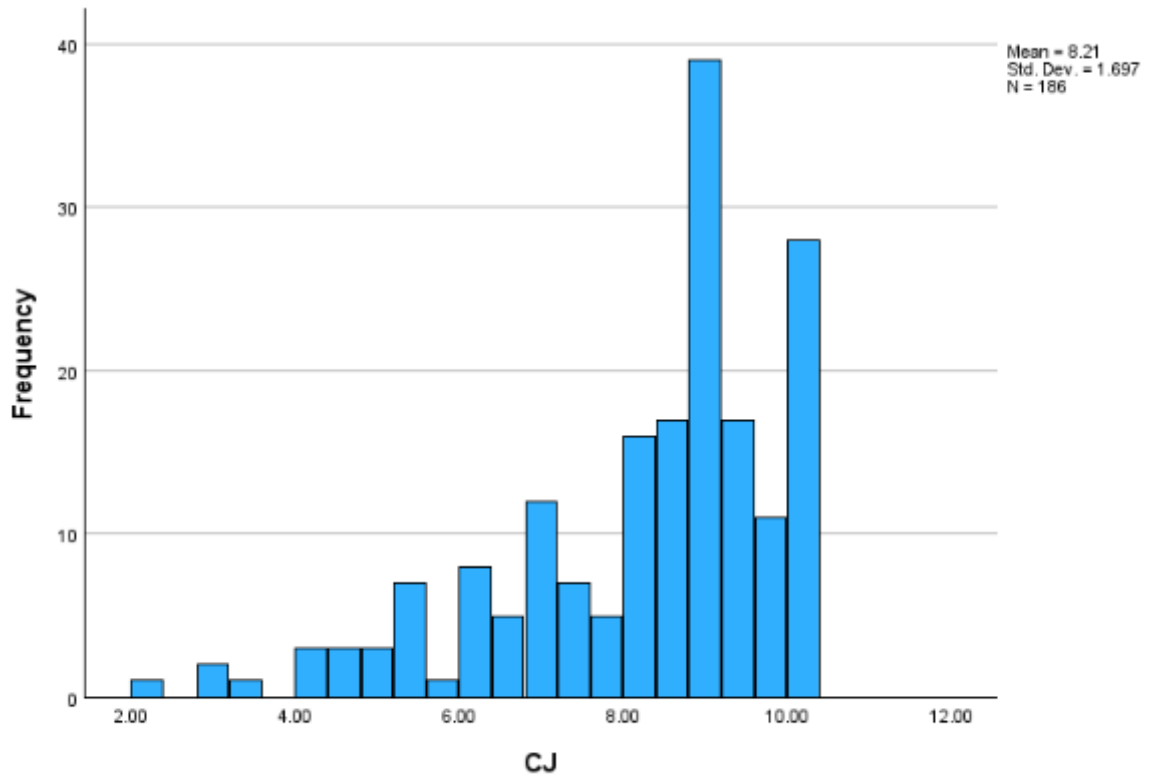
The box plot (Figure 9) describes the minimum, first quartile, median, third quartile, and maximum of the data.

FIGURE 9

Classroom Justice – Box Plot
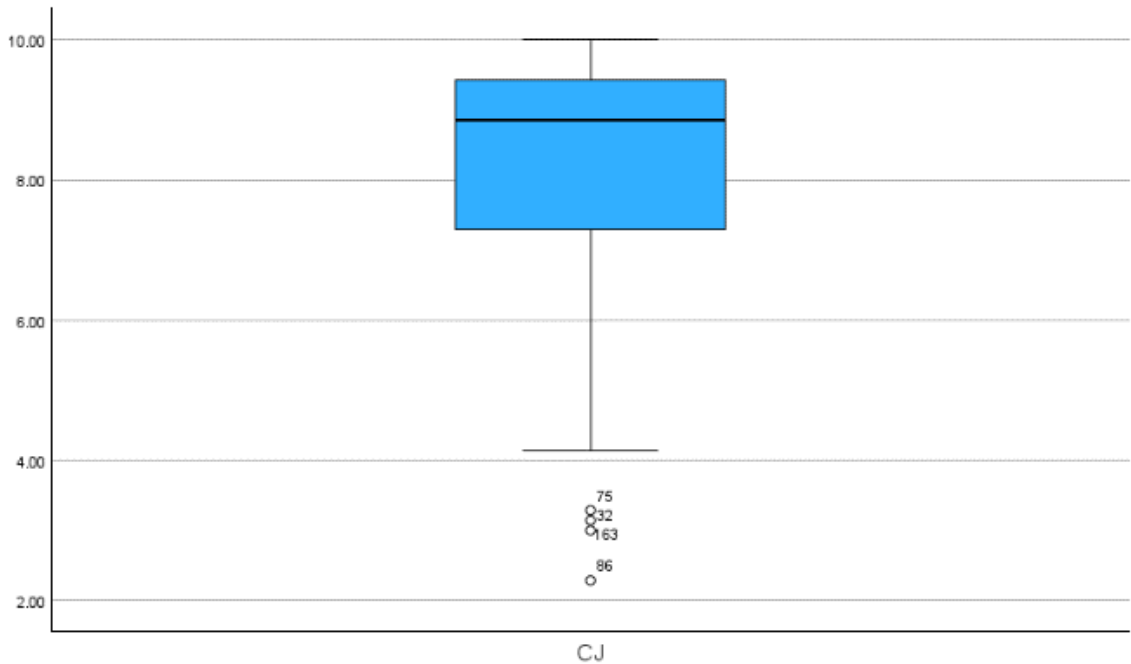
For the collected data from the sample, there were relatively few cases where participants did not complete all 7 items of the questionnaire. All questions had some missing items. Question 3 had three items missing, questions 4, 5, and 6 had two items missing, while questions 2 and 7 had one missing item. Upon review of the missing data at the individual case level, each missing value had occurred only once per participant.

The central tendency of the construct was assessed next. The mean value was 8.21 ($SD = 1.70$), and the range of the mean values between the participants ranged from 7.97 to 8.43. Owing to the central tendency of the construct being right skewed, it was ascertained that the participants reported perceptions of high classroom justice.

As part of the analysis to determine if the measure was valid and reliable, Cronbach's alpha was first used to assess the overall construct and to determine which items if removed would improve the score. No items met this criterion. The measure was found to be reliable with a Cronbach's alpha of 0.88 for the overall construct. Considering Chory-Assad and Paulsel's (2004) work and the findings of Mayayo et al. (2017), which indicated that a measure should have a Cronbach's alpha of 0.93, it was determined that the measure of this study was reliable as the original usage.

Next, a CFA was conducted using the software Jamovi (The Jamovi Project, 2023) to determine how well the data fit the items in the measure. While the initial model fit indices suggested a less than optimal fit to the data ($\chi^2(11) = 117$, $p < .001$, TLI = 0.70, CFI = 0.84, SRMR = 0.07, RMSEA = 0.23), it was crucial to consider the broader context of the analysis. The primary objective of this study was to ensure that the measure had adequate validity and reliability for the subsequent linear regression analysis, rather than fitting a structural equation model (SEM).

In line with the guidelines set by Howard (2016), factor loadings with a minimum value of 0.50 were retained. The analysis revealed that all items met this threshold, indicating that each item significantly contributed to the latent construct. Furthermore, the CR measure was 0.88, surpassing the recommended minimum value of 0.70 as suggested by Wasko and Faraj (2005). This indicated that the items in the measure were consistent and reliable in representing the underlying construct. Additionally, the AVE was 0.51, meeting the minimum threshold of 0.50, further affirming the convergent validity of the measure.

Given that the primary focus of the study was on linear regression and not SEM and considering that the measure met the essential criteria for validity and reliability, it was determined that further modifications to improve model fit were not necessary. The measure's validity and reliability were deemed appropriate for the intended analysis, which meant the robust findings could be used with confidence. Please see Table 9 for the details of the analysis.

TABLE 9

Classroom Justice – Cronbach's Alpha

Construct	Factor	Question	Loading	Cronbach's α if dropped	Cronbach's α (Final)	CR	AVE
Classroom justice					0.88	0.88	0.51
	Distributive Justice	1. The grading scale for the course.	0.67	0.87			
	Procedural Justice	2. The way the instructor conducted class.	0.70	0.86			
	Interactional Justice	3. The instructor's expectations of students.	0.80	0.85			
		4. The amount of work required to get a good grade in the course.	0.76	0.85			
		5. The number of questions on exams.	0.62	0.88			
		6. The level of difficulty of the course content.	0.75	0.85			

7. The scheduling of homework and other written assignments.	0.66	0.86

ACCOUNTING EFFICACY

A scale created by Eveleth et al. (2020) for accounting efficacy was used to mediate in the study. Accounting efficacy is measured by the level of confidence the student has in their own ability to complete accounting tasks. Questions from the scale focused on students' confidence in understanding accounting concepts and how they applied this confidence to their course assignments and exams. Negative accounting efficacy in students was expected to interfere with their having a strong positive motivation towards learning, course structure, or classroom justice and to lead them to having poor final grades and experience less long-term learning.

To assess the participants' perceptions of how the material in their accounting course was applicable to their current and future academic efforts, the shortened form of the measure for accounting efficacy developed by Eveleth et al. (2020) was used. This single factor measure contained eight questions on a seven-point Likert-like scale where 1 = *strongly disagree* and 7 = *strongly agree*. Sample items included: "Prior to online accounting course, accounting concepts came easy to me" and "Prior to online accounting course, I knew enough to successfully apply accounting concepts."

The data were screened for outliers and normality, and none of the items exhibited high skewness or kurtosis exceeding the cutoffs of ∓ 2.00 for skewness and ∓ 7.00 for

kurtosis (Hair et al., 2013). Skewness values ranged from -2.09 to -.41, and kurtosis

values ranged from -1.52 to 3.92. Regarding skewness, when the mean is greater than the

median, this represents a right skew, the mean overestimating the most common values in

a positively skewed distribution. Conversely, when the distribution is left skewed, the

mean is less than the median and the mean underestimates the most common values and

has a negatively skewed distribution. Univariate outliers were examined using box plots

for extreme cases. Two univariate outliers were detected, but neither were extreme

values. A Shapiro-Wilk test revealed that the data were not normally distributed ($W =$

0.96, DF $= 19$, $p < 0.001$). The histogram (Figure 10) also showed that the data displayed

a right skew.

FIGURE 10

Accounting Efficacy - Histogram
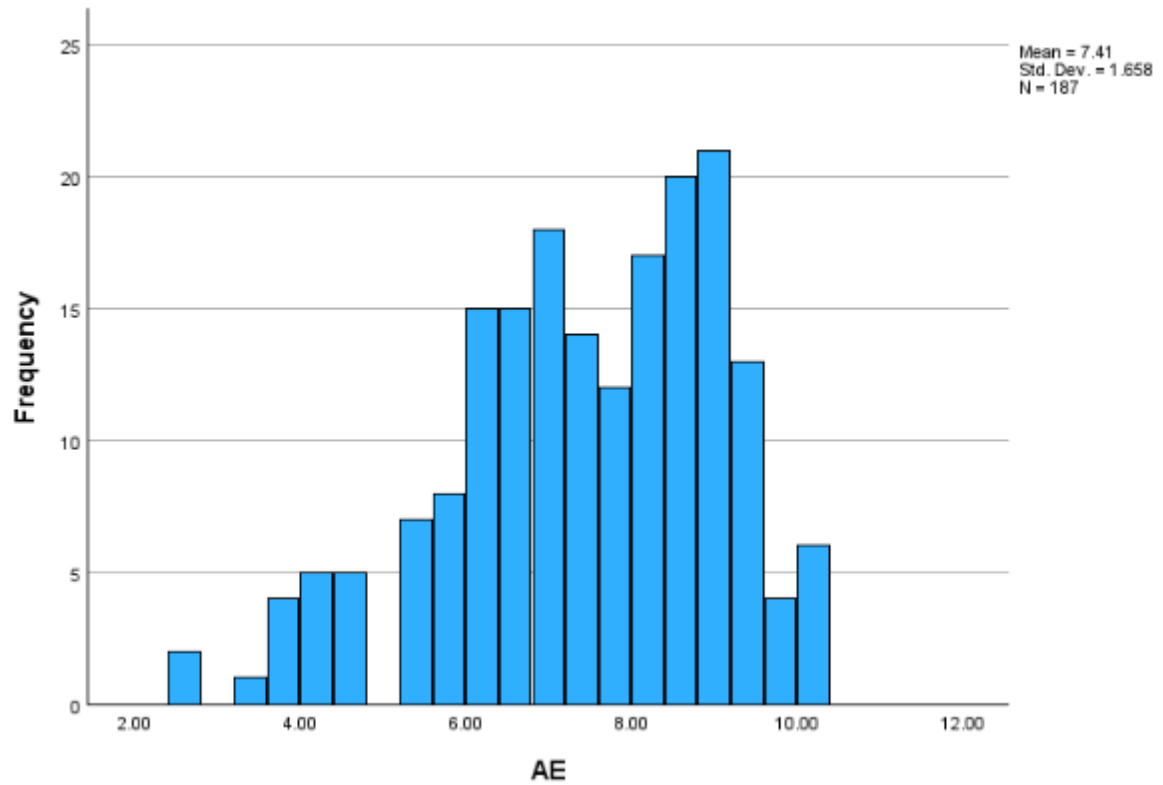
The box plot (Figure 11) describes the minimum, first quartile, median, third quartile, and maximum of the data.

FIGURE 11

Accounting Efficacy – Box Plot
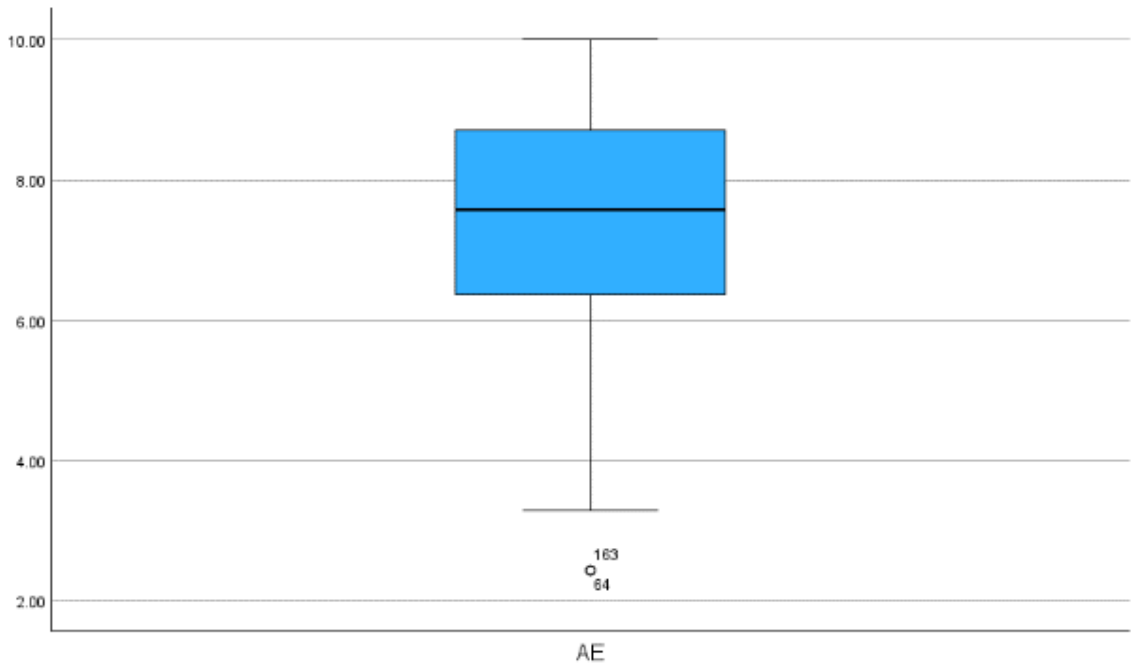
There were relatively few cases in the collected data from the sample in which participants did not complete all 8 items of the questionnaire. Questions 1, 5, 6, and 7 each had missing items. Questions 5 and 7 had one missing item, while questions 1 and 6 had two missing items. Upon reviewing the missing data at the individual case level, each missing value occurred only once per participant.

The central tendency of the construct was accessed next. The mean value was 7.41 ($SD = 1.66$), and the range of the mean values between the participants ranged from 6.29 to 8.49. Owing to the central tendency of the construct being right skewed, it was ascertained that the participants reported perceptions of high accounting efficacy.

As part of the analysis to determine if the measure was valid and reliable, Cronbach's alpha was first used to assess the overall construct and to determine which

items if removed would improve the score. Zero items were identified. The measure was assessed for reliability at the construct and factor levels and was found to be reliable with a Cronbach's alpha of 0.80 for the overall construct. Next, a CFA was conducted using the software Jamovi (The Jamovi Project, 2023) to determine how well the data fit the items in the measure. The overall measure displayed a poor fit ($X^2_{(14)} = 174.60$, $p < .001$, TLI = 0.45, CFI = 0.63, SRMR = 0.13, RMSEA = 0.25). With the aim of identifying factor loadings with a minimum value of 0.50 (Howard, 2016), three items were identified below the minimum value. The CR was 0.76 and the AVE was 0.34. Considering that the minimum value of 0.70 for CR (Wasko & Faraj, 2005) was met but the minimum value for AVE of 0.50 was not, it was determined that the validity and reliability of the measure would improve if the three items were removed. After removing the items, the model fit and factor loading was assessed again with a CFA. The final model had an improved but still poor fit ($X^2_{(2)} = 18.4$, $p < 0.001$, TLI = 0.80, CFI = 0.93, SRMR = 0.05, RMSEA = 0.21). In addition to an improved model fit, the CR (0.80) and AVE (0.50) both improved.

Given that the primary focus of the study was on linear regression and not SEM and considering that the measure met the essential criteria for validity and reliability, it was determined that further modifications to improve the model fit were not necessary. The measure's validity and reliability were deemed appropriate for the intended analysis, which meant the robust findings could be proceeded to be used with confidence. Please see Table 10 for the details of the analysis.

TABLE 10

Accounting Efficacy – Cronbach's Alpha

Construct	Question	Standard estimate	Cronbach's α if item dropped	Cronbach's α (Final)	CR	AVE
Accounting efficacy				0.799	0.798	0.501
	1. Prior to online accounting course, I knew enough to successfully apply accounting concepts.	0.24	0.75			
	2. Prior to online accounting course, accounting concepts came easy to me.	0.29	0.73			
	3. After the online accounting course, I have what it takes to use basic accounting principles.	0.47	0.73			
	4. After the accounting course, I feel certain about my ability to use basic	0.58	0.72			

accounting principles.				
5. After the accounting course, I would recommend accounting to a friend looking for a job.	0.64	0.73	0.039	0.162
6. My feeling about accounting have changed for the better since taking this class.	0.81	0.73		
7. This course significantly increased my confidence in my accounting skills	0.78	0.72		

STUDY DESIGN

This study was supported by quantitative methods to understand the relationships

between non-best instructor practices and student course performance while the students'

own accounting efficacy, also known as accounting confidence, mediated these

relationships. The study consisted of a 7-point Likert scale survey made up of 36

questions that was based on the work of Flierl et al. (2021), Mayayo et al. (2017), M. A.

A. A. Bakar et al. (2019), Eveleth et al. (2020), and Chory-Assad and Paulsel (2004).

PROCEDURE

Students who chose to participate were required to first review the informed

consent form which consisted of a summary of the study and information regarding the

risks and their confidentiality within the study. In consenting to the study, participants

would then respond to a questionnaire administered online through Qualtrics, which was

estimated to take no more than 20 minutes in total to complete. Participants were asked

questions about their demographics, final course grade, and overall GPA. During the

survey, participants were asked a series of brief questions regarding each of the variables

in the study. Once the survey was completed, the participants' results were forwarded by

Qualtrics directly to the researcher. The professors participating in the survey did not

know which, if any, students completed the survey. Because the professors only

requested their students to take the survey but did not follow-up on whether their students

completed the survey and because the survey never asked for any identifying information

and it would be submitted automatically, the survey instrument was completely

confidential.

QUANTITATIVE DATA ANALYSIS

REGRESSION ANALYSIS

A multiple regression analysis was run on the data set to explain the variance of

accounting efficacy. This regression provided insights into the relationship between the

mediating variable and student performance in an online accounting course. In doing so,

the significance of the mediating variable was examined regarding the proportion of variance explained by the model.

To determine whether accounting efficacy mediated the relationship between student motivation, course structure, classroom justice, and student performance, as measured by their final course grades and applicability of learned material, IBM SPSS Statistics 29 was used for a standard multiple regression analysis. In doing so, positive and negative relationships were assessed as well as the strength or significance of each relationship. Results of the analysis provided confirmation of the mediating relationship between accounting efficacy, the four independent variables, and two dependent variables as seen in the model.

PARADIGMS AND ETHICS

Participation in the study was voluntary and participants could choose to withdraw their consent at any time. The survey was made available online to individuals who met the criteria of the study. The distribution of the survey and/or request for participation was done online; as such, participants were not pressured to participate. Informed consent was required to participate in the study. Individuals who accessed the survey link were prompted to first give their consent and acknowledge that their data would be used in the study. Participants also had the option to contact the survey administrator to ask questions prior to their consent. To address confidentiality in the data collection process and in the publication of direct quotes from participants, everything was done to protect the privacy of participants, including but not limited to removing any references which may have identified the participants. No demographic information was shared if the sample size was smaller than five for a particular demographic (e.g., Black

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men). Other concerns regarding the harm of participants or other ethical issues were expected to be mitigated by the method of administration of the survey. All participants were protected through the ethical considerations mentioned herein. Additionally, no additional resources were required, so the expectation was that participants would not be put in harm's way to participate or provide their input in the study.

RESULTS

In this chapter, the results of an exploratory analysis that was conducted to link Study 1 and Study 2 will be described. Then, each proposed hypothesis of the theoretical model and how they were tested to answer the research question will be explained.

EXPLORATORY ANALYSIS

In Study 1, SPSS Version 4.2 was used to analyze the relationship between students viewing brief lecture videos, the number of videos they watched, their final course grades, and the frequency of assessments in a course using a linear regression model. Similar to what was proposed in Study 1, in Study 2 it was hypothesized that in the sample, the amount of videos viewed and the number of assessments given would relate positively with final grades. In addition, control variables were included in the analysis for the students' grade point average, age, class year, and gender.

The findings of Study 1 did not reveal a relationship between these variables. These findings contradicted previous observations of researchers (Afify, 2020; Carpenter, 2012; Guo et al., 2014) that students preferred frequent and shorter video lectures and fewer assessments, leading to the hypothesis that implementing these practices would lead to better performance for the students.

The purpose of Study 2 was to replicate the results of Study 1 and to examine the potential relationship between students' preferences and their academic performance. The participants in Study 2 were asked two questions: (a) "In my online accounting course, I had a mid-term exam and final exam only, which I preferred to multiple quizzes throughout the semester?" and (b) "In my online accounting course, the video lectures were too long to hold my attention?". The responses were documented on a scale from 1 (*agree*) to 2 (*disagree*).

The regression analysis for videos viewed and the number of assessments given yielded R^2 values of 0.30 (30.2%) for final grades. This result indicated that a variance of the final grades could be explained by the combination of variables. However, considering the number of predictors and degrees of freedom, videos viewed and the number of assessments given had limited predictive relevance in the study.

The results of the regression analysis indicated that videos viewed and the number of assessments given had a nonsignificant effect on final grades ($b = 0.05$, $SE = 0.07$, $t(187) = .69$, $p = 0.49$) and ($b = 0.04$, $SE = 0.08$, $t(187) = .55$, $p = 0.584$), respectively.

Similar findings were found with some of the control measures. Age had nonsignificant effect on final grades ($b = -0.10$, $SE = .004$, $t(187) = -1.40$, $p = .164$). Likewise, class year had nonsignificant effect on final grades ($b = -0.10$, $SE = 0.03$, $t(187) = -1.31$, $p = 0.191$). Further, gender had nonsignificant effect on final grades ($b = .04$, $SE = 0.07$, $t(187) = .54$, $p = 0.589$). The only coefficients to have a significant effect were grade point average effecting final grades ($b = .26$, $SE = 0.06$, $t(187) = 3.60$, $p < 0.001$).

According to the findings of Study 2, students preferred more frequent assessments and were satisfied with longer lecture videos, indicating a mixed response compared to the findings of previously conducted research. However, as with Study 1, there was no relationship between these preferences and final grades. This suggests that even though students may prefer certain learning strategies, these preferences do not always translate into their having an improved academic performance.

The data indicated that student behavior concurred with the findings of the literature review, that while students desired having shorter videos and more assessments in their accounting courses, there was no relationship between these variables and their final grade. This was consistent with the premise that best practices are not always synonymous with best performance.

Table 11 and 12 detail all the significant and nonsignificant relationships tested in this model.

TABLE 11

Variables tested in Exploratory Analysis

Variable	*N*	Min	Max	Mean	*SD*	Variance	Skew	Kurtosis
# assessments	187	1	2	1.59	.49	.30	-.38	-1.87
Video viewing	187	1	2	1.71	.03	.46	-.91	-1.18

TABLE 12

Exploratory Analysis - Results

Variable	Estimate	Standard error	t	Pr $(>|t|)$
No. of assessments	.05	.07	.69	.49
Video viewing	.04	.08	.55	.58
Age	-.10	.00	-1.40	.16
Class year	-.10	.03	-1.31	.19
Gender	.04	.07	.54	.59
GPA	.26	.06	3.60	< .00

DESCRIPTIVE STATISTICS

To properly assess the relationship between the variables that were modeled, the descriptive statistics of Study 2 were combined as detailed in Chapter 3. Table 13 was constructed that includes all relevant explanations of the data.

TABLE 13

Study 2 Variables – Minimum, Maximum and Variance

Variable	N	Range	Min.	Max.	Mean	SD	Variance	Skew	Kurtosis
Student motivation	187	3.43	2.57	6.00	3.88	.04	.30	.66	1.47
Course structure	187	7.25	2.75	10.0	8.39	.12	2.48	-1.65	2.40
Classroom justice	186	7.71	2.29	10.00	8.20	.12	2.88	-1.19	.93
Accounting efficacy	187	7.57	2.43	10.00	7.40	.12	2.75	-.65	.01
Final grade	187	3.70	0.00	3.7	3.33	.04	.24	-2.61	11.87
Applicability of learned material	187	5.13	1.88	7.00	5.57	.06	.72	-.74	1.32
Grade point average	186	3.70	0.00	3.70	3.51	.04	.32	-5.47	31.41
Class year	187	3.00	1.00	4.00	2.86	.08	1.18	-.45	-1.12
Gender	187	2.00	1.00	3.00	1.45	.04	.27	.42	-1.31
Age	186	56	18	74	29.50	.69	89.06	1.57	3.22
Race	187	7	1	8	2.08	.13	3.21	1.85	2.60
Video viewing	187	1.00	1.00	2.00	1.64	.03	.12	-.46	-.82

Table 14 describes the relationships between Study 2 variables.

TABLE 14

Correlations

Variable	1	2	3	4	5
1. Applicability of learned material	--				
2. Student motivation	$.48^{**}$	--			
3. Class structure	$.59^{**}$	$.46^{**}$	--		
4. Accounting efficacy	$.60^{**}$	$.46^{**}$	$.60^{**}$	--	
5. Classroom justice	$.60^{**}$	$.39^{**}$	$.63^{**}$	$.51^{**}$	--

[**]Correlation is significant at the 0.01 level (2-tailed).

A potential concern in data analysis is multicollinearity, which arises when the presence of strong correlations among independent variables hinders the ability to discern their individual influences on the dependent variable. Not every correlation is negative. An indication of strongly related predictors is a correlation of 0.70 (Stevens, 2009). The highest correlation among the available data is 0.63, which falls short of the established threshold.

ADDRESSING NONRESPONSE BIAS

To address the potential issue of nonresponse bias, which refers to systematic differences between respondents and nonrespondents, several observations from the study design and data collection procedure merited consideration. First, the cross-sectional nature of the study indicated that data was collected at a single point in time, thereby reducing the possibility of fluctuating response patterns that could arise from longitudinal designs. The threat of nonresponse bias was substantially mitigated by the exceptionally high response completion rate of the survey; with less than 5% of responses missing for

any question, the threat was substantially mitigated. Typically, marker variables are used to detect potential biases by comparing respondents and nonrespondents of a survey. However, the high response rate and consistency in the completion of questions suggested that the data accurately represented the intended sample, reducing concerns regarding nonresponse bias.

ANALYSIS OF HYPOTHESES

HYPOTHESIS 1a

A multiple regression was conducted in SPSS Version 4.2 to analyze the relationship between final grades and the independent variable of student motivation using a linear regression model. It was hypothesized that in the sample, student motivation would relate positively with final grades. In addition, control variables were included such as the students' grade point average, age, class year, and gender.

The regression analysis for student motivation yielded R^2 values of 0.09 (9.2%) for final grades. Further, the results of the regression analysis indicated that student motivation had nonsignificant effect on final grades ($b = 0.03$, $SE = 0.03$, $t(187) = .98$, $p = 0.331$), age had a nonsignificant effect on final grades ($b = -0.01$, $SE = 0.004$, $t(187) = -1.43$, $p = 0.156$), gender had nonsignificant effect on final grades ($b = .04$, $SE = 0.07$, $t(187) = 0.56$, $p = 0.579$), and class year had a nonsignificant final grades ($b = -0.04$, $SE = 0.03$, $t(187) = -1.65$, $p = 0.208$). However, grade point average did have a significant effect on final grades ($b = 0.23$, $SE = 0.06$, $t(187) = 3.70$, $p < .000$).

Table 15 details the significant and nonsignificant relationships tested in this model.

TABLE 15

Hypothesis 1a

Variable	Estimate	SD	VIF	Tolerance	t	p
(Intercept)	2.60	0.30			8.72	0.000
Motivation	0.03	0.03	1.03	0.974	0.98	0.331
Controls						
Grade point average	0.23	0.06	1.03	0.975	3.70	0.000
Age	-0.01	0.00	1.03	0.974	-1.42	0.156
Class year	-0.04	0.03	1.02	0.987	-1.27	0.208
Gender	0.04	0.07	1.04	0.966	0.56	0.579
R^2	0.092					

As one might expect, GPA was a statistically significant predictor of final grades. The other findings of this study indicated that aside from GPA, motivation, age, class year, and gender were not significant predictors of final grades. This suggests that factors beyond those included in the model might significantly influence final grades.

Considering the nonsignificant relationships and the low R^2 values, interpreting the results called for caution. However, it is important to acknowledge that some limitations of this analysis may have been due to the small sample size.

HYPOTHESIS 1b

A multiple regression was conducted in SPSS Version 4.2, using a linear regression model, to analyze the relationship between students' applicability of learned materials and the independent variable of student motivation. It was hypothesized that in the sample, student motivation would relate positively with students' applicability of

learned material. In addition, control variables included students' grade point average, age, class year, and gender.

The regression analysis for student motivation yielded R^2 values of 0.25 (24.6%) for the students' applicability of learned material. The results of the regression analysis indicated that students' motivation had a significant effect on their applicability of learned material ($b = 0.33$, $SE = 0.05$, $t(187) = 7.28$, $p < .0000$). However, students' grade point average had a nonsignificant effect on their applicability of learned material ($b = -0.55$, $SE = .10$, $t(187) = -0.54$, $p = .588$). Likewise, students' age had nonsignificant effect on their applicability of learned material ($b = -.001$, $SE = 0.01$, $t(187) = -0.17$, $p = 0.866$), students' gender had nonsignificant effect on their applicability of learned material ($b = 0.10$, $SE = 0.11$, $t(187) = 0.92$, $p = 0.359$, and students' class year had nonsignificant effect on their applicability of learned material ($b = .081$, $SE = 0.05$, $t(187) = 1.55$, p $= .0122$).

Table 16 details significant and nonsignificant relationships tested in this model.

TABLE 16

Hypothesis 1b

Variable	Estimate	*SD*	VIF	Tolerance	*t*	*p*
(Intercept)	3.77	0.49			7.77	0.000
Motivation	0.33	0.05	1.03	0.974	7.28	0.000
Controls						
Grade point average	-0.06	0.10	1.03	0.975	-0.54	0.588
Age	-0.00	0.01	1.03	0.974	-0.17	0.866
Class year	0.08	0.05	1.02	0.987	1.55	0.122
Gender	0.10	0.11	1.04	0.966	0.92	0.359
R^2	0.256					

The findings of this study indicate that motivation is a significant predictor of the students' applicability of learned material. However, a student's GPA, age, class year, and gender are not significant predictors of students' applicability of learned material. This suggests that factors beyond those included in the model might significantly influence students' applicability of learned material.

Considering the nonsignificant relationships and the low R^2 values, interpreting the results called for caution. It is also important to acknowledge some limitations of this analysis may have been due to the small sample size.

HYPOTHESIS 2a

A multiple regression analysis was conducted using SPSS Version 4.2 to analyze the relationship between final grades and the independent variable of course structure using a linear regression model. It was hypothesized that in the sample, course structure

would relate positively with final grades. In addition, control variables included students'

grade point average, age, class year, and gender.

The regression analysis for the course structure yielded R^2 values of 0.10 (10.3%)

for final grades. Considering the number of predictors and degrees of freedom ($d = 5$),

course structure had a limited predictive relevance in this study. No other individual

variables in this analysis demonstrated a statistically significant relationship with final

grades. The results of the regression analysis indicated that course structure had a

nonsignificant effect on final grades ($b = 0.04$, $SE = 0.02$, $t(187) = 1.77$, $p = 0.078$).

Grade point average did have a significant effect on final grades ($b = 0.23$, $SE = 0.002$,

$t(187) = 3.79$, $p < .0000$), while age had a nonsignificant effect on final grades ($b = -0.01$,

$SE = 0.004$, $t(187) = -1.52$, $p = 0.130$), class year had nonsignificant effect on final grades

($b = -0.04$, $SE = 0.03$, $t(187) = -1.38$, $p = 0.169$), and gender had a nonsignificant effect

on final grades ($b = .03$, $SE = 0.07$, $t(187) = 0.49$, $p = 0.625$).

Table 17 details the significant and nonsignificant relationships tested in this

model.

TABLE 17

Hypothesis 2a

Variable	Estimate	SD	VIF	*Tolerance*	*t*	*p*
(Intercept)	2.43	0.31			7.76	0.000
Course structure	0.04	0.02	1.03	0.973	1.77	0.078
Controls						
Grade point average	0.23	0.0.0	1.03	0.974	3.79	0.000
Age	-0.01	0.00	1.02	0.976	-1.52	0.130
Class year	-0.04	0.03	1.03	0.975	-1.38	0.169
Gender	0.03	0.07	1.03	0.967	0.49	0.625
R^2	0.103					

As one might expect, GPA was found to be a statistically significant predictor of final grades. The other findings of this study indicate that aside from GPA, course structure and students' age, class year, and gender are not significant predictors of their final grades. This suggests that factors beyond those included in the model might significantly influence final grades.

HYPOTHESIS 2b

A multiple regression analysis was conducted using SPSS Version 4.2 to analyze the relationship between students' applicability of learned materials and the independent variable of course structure using a linear regression model. It was hypothesized that in the sample, course structure would relate positively with students' applicability of learned material. In addition, control variables included students' grade point average, age, class year, and gender.

The regression analysis for course structure yielded R^2 values of .35 (35.2%) for students' applicability of learned material. No other individual variables in this analysis demonstrated a statistically significant relationship with students' applicability of learned material. The results of the regression analysis indicated that course structure had a significant effect on students' applicability of learned material ($b = 0.32$, $SE = 0.03$, $t(187) = 9.55$, $p < .000$). Grade point average had a nonsignificant effect on students' applicability of learned material ($b = -.03$, $SE = .09$, $t(187) = -.37$, $p = .713$), age had a nonsignificant effect on students' applicability of learned material ($b = -.002$, $SE = 0.01$, $t(187) = -.33$, $p = 0.744$), the class year had a nonsignificant effect on students' applicability of learned material ($b = .05$, $SE = 0.03$, $t(187) = 1.04$, $p = 0.299$), and gender had a nonsignificant effect on students' applicability of learned material ($b = .09$, $SE = 0.10$, $t(187) = .87$, $p = 0.384$).

Table 18 details all the significant and nonsignificant relationships tested in this model.

TABLE 18

Hypothesis 2b

Variable	Estimate	*SD*	VIF	Tolerance	*t*	*p*
(Intercept)	2.93	0.48			6.16	0.000
Course structure	0.32	0.03	1.03	0.973	9.55	0.000
Controls						
Grade point average	-0.03	0.09	1.03	0.974	-0.37	0.713
Age	-0.00	0.01	1.02	0.976	-0.33	0.744
Class year	0.05	0.03	1.03	0.975	1.04	0.299
Gender	0.09	0.10	1.03	0.967	0.87	0.384
R^2	0.35					

The findings of this study indicate that course structure has a significant impact upon students' applicability of learned material, whereas a student's GPA, age, class year, and gender are not significant predictors of their applicability of learned material.

HYPOTHESIS 3a

A multiple regression analysis was conducted using SPSS Version 4.2 to analyze the relationship between final grades and the independent variable of classroom justice using a linear regression model. It was hypothesized that in the sample, classroom justice would relate positively with final grades. In addition, control variables included students' grade point average, age, class year, and gender.

The regression analysis for classroom justice yielded R^2 values of 0.09 (8.91) for final grades and had limited predictive relevance in the study. Results of the regression analysis indicated that classroom justice had nonsignificant effect on final grades ($b = 0.01$, $SE = 0.02$, $t(187) = .65$, $p = 0.517$). Grade point average did have a significant effect on final grades ($b = 0.23$, $SE = .06$, $t(187) = 3.67$, $p < .000$). However, age had a nonsignificant effect on final grades ($b = -0.01$, $SE = 0.004$, $t(187) = -1.36$, $p = 0.177$), class year had a nonsignificant effect on final grades ($b = -0.04$, $SE = 0.03$, $t(187) = -1.34$, $p = 0.184$), and gender had a nonsignificant effect on final grades ($b = 0.04$, $SE = 0.07$, $t(187) = .63$, $p = 0.533$).

Table 19 details all the significant and nonsignificant relationships tested in this model.

TABLE 19

Hypothesis 3a

Variable	Estimate	*SD*	VIF	Tolerance	*t*	*p*
(Intercept)	2.64	0.31			8.58	0.00
Classroom justice	0.01	0.02	1.02	0.980	0.65	0.52
Controls						
Grade point average	0.23	0.06	1.03	0.977	3.67	0.000
Age	-0.01	0.00	1.02	0.984	-1.36	0.177
Class year	-0.04	0.03	1.04	0.965	-1.34	0.184
Gender	0.04	0.07	1.03	0.974	0.63	0.533
R^2	0.09					

As one might expect, the findings of this study show that GPA is a statistically significant predictor of final grade. The other findings of this study indicate that aside from GPA, classroom justice and a student's age, class year, and gender are not significant predictors of final grades. This suggests that factors beyond those included in the model might significantly influence final grades.

HYPOTHESIS 3b

A multiple regression analysis was conducted using SPSS Version 4.2 to analyze the relationship between students' applicability of learned materials and the independent variable of classroom justice using a linear regression model. It was hypothesized that in the sample, classroom justice would relate positively with students' applicability of learned material. In addition, control variables included students' grade point average, age, class year, and gender.

The regression analysis for classroom justice and students' applicability of learned material yielded R^2 values of .37 (37.1%), and this finding had reasonable predictive relevance in the study. Results of the regression analysis indicated that classroom justice had a significant effect on students' applicability of learned material ($b = 0.30$, $SE = 0.03$, $t(187) = 9.85$, $p < .000$). Grade point average had a nonsignificant effect on students' applicability of learned material ($b = -0.06$, $SE = .09$, $t(187) = -0.68$, $p = .497$), age had a nonsignificant effect on students' applicability of learned material ($b = .001$, $SE = 0.01$, $t(187) = .14$, $p = 0.891$), class year had a nonsignificant effect on students' applicability of learned material ($b = 0.02$, $SE = 0.05$, $t(187) = .48$, $p = 0.633$), and gender had nonsignificant effect on students' applicability of learned material ($b = 0.16$, $SE = 0.10$, $t(187) = 1.55$, $p = 0.123$).

Table 20 details all the significant and nonsignificant relationships tested in this model.

TABLE 20

Hypothesis 3b

Variable	Estimate	*SD*	VIF	Tolerance	*t*	*p*
(Intercept)	3.14	0.46			6.85	0.000
Classroom justice	0.30	0.03	1.03	0.980	9.85	0.000
Controls						
Grade point average	-0.06	0.09	1.03	0.977	-0.68	0.497
Age	0.00	0.01	1.02	0.984	0.14	0.891
Class year	0.02	0.05	1.03	0.965	0.48	0.633
Gender	0.16	0.10	1.03	0.974	1.55	0.123
R^2	0.37					

The findings of this study indicate that classroom justice has a significant impact upon students' applicability of learned material, whereas a student's GPA, age, class year, and gender are not significant predictors of their applicability of learned material. The fact that other relationships were nonsignificant, along with the low R^2 values, meant interpreting these results called for caution. It is also important to acknowledge some limitations of this analysis may have been due to the small sample size.

HYPOTHESIS 4a

A multiple regression analysis was conducted using SPSS Version 4.2 to analyze the relationship between accounting efficacy and the independent variable of student motivation using a linear regression model. It was hypothesized that student motivation would positively relate to student's accounting efficacy. In addition, the control variables that were included were students' grade point average, age, class year, and gender.

The regression analysis for student motivation yielded R^2 values of 0.37 (36.8%) for accounting efficacy, which indicated a predictive relevance for motivation in this study. Results of the regression analysis indicated that student motivation had a significant effect on accounting efficacy ($b = 0.30$, $SE = 0.03$, $t(187) = 9.85$, $p < .000$). Grade point average had a nonsignificant effect on accounting efficacy ($b = -0.06$, $SE = .09$, $t(187) = -0.07$, $p = .497$), age had nonsignificant effect on accounting efficacy ($b = 0.001$, $SE = .01$, $t(187) = 0.14$, $p = .891$), class year had a nonsignificant effect on accounting efficacy ($b = .02$, $SE = .05$, $t(187) = .48$, $p = .633$), and gender had a nonsignificant effect on accounting efficacy *($b = 0.16$, $SE = .10$, $t(187) = -1.55$, $p = .123$).*

Table 21 details all the relationships tested in this model.

TABLE 21

Hypothesis 4a

Variable	Estimate	SD	VIF	Tolerance	t	p
(Intercept)	3.14	0.46			6.85	0.000
Motivation	0.30	0.03	1.03	0.974	9.85	0.000
Controls						
Grade point average	-0.06	0.09	1.03	0.975	-0.68	0.497
Age	0.00	0.01	1.03	0.974	0.14	0.891
Class year	0.02	0.05	1.02	0.978	0.48	0.633
Gender	0.16	0.10	1.04	0.966	1.55	0.123
R^2	0.37					

The findings of this study indicate that motivation has a significant impact on accounting efficacy. Inversely, a student's GPA, age, and gender are not significant predictors of either variable.

HYPOTHESIS 4b

A multiple regression analysis was conducted using SPSS Version 4.2 to analyze the relationship between accounting efficacy and the independent variable of course structure using a linear regression model. It was hypothesized that within the sample, course structure would relate positively with students' accounting efficacy. In addition, control variables included were students' grade point average, age, class year, and gender.

The regression analysis for course structure yielded R^2 values of 0.40 (39.9%) for accounting efficacy, which indicated a strong predictive relevance for course structure in the study. Additionally, the results of the regression analysis indicated that course

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structure had a significant effect on accounting efficacy ($b = 0.76$, $SE = 0.07$, $t(187) =$ 10.43, $p < .000$). Grade point average had a nonsignificant effect on accounting efficacy ($b = -0.26$, $SE = 0.20$, $t(187) = -1.30$, $p = 0.194$), age had a nonsignificant effect on accounting efficacy ($b = 0.01$, $SE = 0.01$, $t(187) = 0.94$, $p = 0.348$), class year had nonsignificant effect on accounting efficacy ($b = -0.16$, $SE = 0.11$, $t(187) = -1.49$, $p = 0.137$), and gender had nonsignificant effect on accounting efficacy ($b = .03$, $SE = 0.22$, $t(187) = 0.12$, $p = 0.904$).

Table 22 details the relationships tested in this model.

TABLE 22

Hypothesis 4b

Variable	Estimate	SD	VIF	Tolerance	t	p
(Intercept)	2.35	1.03			2.29	0.023
Course structure	0.76	0.07	1.03	0.974	10.43	0.000
Controls						
Grade point average	-0.26	0.20	1.03	0.975	-1.30	0.194
Age	0.01	0.01	1.03	0.974	0.94	0.348
Class year	-0.16	0.11	1.02	0.978	-1.49	0.137
Gender	0.03	0.22	1.04	0.966	0.12	0.904
R^2	0.40					

The findings of this study indicate that course structure has a significant impact upon accounting efficacy, whereas a student's GPA, age, and gender are not significant predictors of accounting efficacy.

HYPOTHESIS 4c

A multiple regression analysis was conducted using SPSS Version 4.2 to analyze the relationship between students' accounting efficacy and the independent variable of classroom justice using a linear regression model. It was hypothesized that in the sample, classroom justice would relate positively with students' accounting efficacy. In addition, control variables included were students' grade point average, age, class year, and gender.

The regression analysis for classroom justice yielded R^2 values of 0.30 (30.3%) for accounting efficacy, which indicated a predictive relevance for the study. Additionally, the results of the regression analysis indicated that classroom justice had a significant effect on accounting efficacy ($b = 0.60$, $SE = 0.07$, $t(187) = 8.31$, $p < .000$). Grade point average had a nonsignificant effect on accounting efficacy ($b = -.34$, $SE = 0.22$, $t(187) = -1.56$, $p = 0.122$), age had a nonsignificant effect on accounting efficacy ($b = 0.02$, $SE = 0.01$, $t(187) = 1.36$, $p = 0.174$), class year had a nonsignificant effect on accounting efficacy ($b = -0.20$, $SE = 0.11$, $t(187) = -1.76$, $p = 0.080$), and gender had a nonsignificant effect on accounting efficacy ($b = .18$, $SE = 0.24$, $t(187) = .74$, $p = 0.458$).

Table 23 details the relationships tested in this model.

TABLE 23

Hypothesis 4c

Variable	Estimate	SD	t	p
(Intercept)	3.74	1.08	3.48	0.000
Classroom justice	0.60	0.07	8.31	0.000
Controls				
Grade point average	-0.34	0.22	-1.56	0.122
Age	0.02	0.01	1.36	0.174
Class year	-0.20	0.11	-1.76	0.080
Gender	0.18	0.24	0.74	0.458
R^2	0.30			

The findings of this study indicate that classroom justice has a significant impact upon accounting efficacy, whereas a student's GPA, age, and gender are not significant predictors of accounting efficacy.

HYPOTHESIS 5a

A multiple regression analysis was conducted using SPSS Version 4.2 to analyze the relationship between final grades and the independent variable of students' accounting efficacy using a linear regression model. It was hypothesized that in the sample, students' accounting efficacy would relate positively with their final grades. In addition, control variables included were students' grade point average, age, class year, and gender.

The regression analysis for accounting efficacy yielded R^2 values of 0.10 (10.3%) for final grades and had limited predictive relevance in this study. Further, the results of the regression analysis indicated that accounting efficacy had a nonsignificant effect on

final grades ($b = 0.03$, $SE = 0.02$, $t(187) = 1.79$, $p = 0.075$). Grade point average had a

significant effect on final grades ($b = 0.24$, $SE = .06$, $t(187) = 3.87$, $p < .000$), while age

had a nonsignificant effect on final grades ($b = -0.01$, $SE = 0.004$, $t(187) = -1.54$, $p = $

0.126), class year had a nonsignificant effect on final grades ($b = -0.04$, $SE = 0.03$, $t(187)$

$= -1.19$, $p = 0.237$), and gender had a nonsignificant effect on final grades ($b = 0.04$, $SE = $

0.07, $t(187) = 0.54$, $p = 0.588$).

Table 24 details the relationships tested in this model.

TABLE 24

Hypothesis 5a

Variable	Estimate	SD	VIF	Tolerance	t	p
(Intercept)	2.47	0.30			8.21	0.000
Accounting efficacy	0.03	0.02	1.04	0.963	1.79	0.075
Controls						
Grade point average	0.2	0.06	1.03	0.975	3.87	0.000
Age	-0.0	0.00	1.05	0.956	-1.54	0.126
Class year	-0.0	0.03	1.02	0.978	-1.19	0.237
Gender	0.04	0.07	1.04	0.963	0.54	0.588
R^2	0.10					

As one might expect, GPA was found to be a statistically significant predictor of

final grades. The other findings of this study indicate that aside from students' GPA, their

accounting efficacy, age, class year, and gender are not significant predictors of final

grades. This suggests that factors beyond those included in the model might significantly

influence final grades.

HYPOTHESIS 5b

A multiple regression analysis was conducted using SPSS Version 4.2 to analyze the relationship between students' applicability of learned material and the independent variable of students' accounting efficacy using a linear regression model. It was hypothesized that in the sample, students' accounting efficacy would relate positively with their applicability of learned material. In addition, control variables included were students' grade point average, age, class year, and gender.

The regression analysis for accounting efficacy yielded R^2 values of 0.39 (39.4%) for students' applicability of learned material and had a reasonable predictive relevance in the study. Further, the results of the regression analysis indicated that students' accounting efficacy had a significant effect on their applicability of learned material ($b = 0.28$, $SE = 0.03$, $t(187) = 10.47$, $p < .000$). Grade point average had a nonsignificant effect on students' applicability of learned material ($b = 0.02$, $SE = .09$, $t(187) = 0.22$, $p = 0.830$), age had nonsignificant effect on students' applicability of learned material ($b = -0.003$, $SE = 0.01$, $t(187) = -0.50$, $p = 0.619$), class year had a nonsignificant effect on students' applicability of learned material ($b = 0.10$, $SE = 0.05$, $t(187) = 2.20$, $p = 0.029$), and gender had a nonsignificant effect on students' applicability of learned material ($b = 0.12$, $SE = 0.10$, $t(187) = 1.16$, $p = 0.248$).

Table 25 details the relationships tested in this model.

TABLE 25

Hypothesis 5b

Variable	Estimate	*SD*	VIF	Tolerance	*t*	*p*
(Intercept)	3.15	0.44			7.11	0.000
Accounting efficacy	0.28	0.03	1.04	0.963	10.47	0.000
Controls						
Grade point average	0.02	0.09	1.03	0.975	0.22	0.830
Age	-0.00	0.01	1.05	0.956	-0.50	0.619
Class year	0.10	0.05	1.02	0.978	2.20	0.029
Gender	0.12	0.10	1.04	0.976	1.16	0.248
R^2	0.39					

The findings of this study indicate that students' accounting efficacy has a significant impact upon their applicability of learned material. Aside from this relationship, all other relationships were found to be nonsignificant. Those findings along with the low R^2 values, called for caution when interpreting the results. It is also important to acknowledge that some limitations of this analysis may have been due to the small sample size.

HYPOTHESIS 6a

Mediation analysis is a crucial statistical tool that plays a significant role in the pursuit of comprehending the fundamental mechanisms by which variables exert their influence on each other. The primary objective of this hypothesis was to examine the potential mediating role of students' accounting efficacy in the relationship between their motivation and their final grade. To accomplish this objective, Hayes's PROCESS macro

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for SPSS was used. The selection of Hayes's PROCESS macro for SPSS was based on multiple considerations: it offered a straightforward, rigorous, and accessible method to examine both direct and indirect effects, which is essential for doing mediation analysis. Furthermore, Hayes (2013) utilized the technique of bootstrapping, a nonparametric resampling procedure, to take advantage of its increased power and improved accuracy in determining Type I error rates compared to conventional techniques, particularly in intricate models.

Along with examining students' final grades and their motivation and accounting efficacy, the control variables of students' grade point average, class year, age, and gender were included to mitigate the possibility of false or muddled associations in the observations. By using these control measures, there was greater confidence in the robustness of the findings pertaining to the core variables of interest.

The study adhered to the guidelines proposed by Baron and Kenny (1986) for developing mediation. However, it is noteworthy that Hayes's PROCESS macro extends beyond their fundamental framework. The Baron and Kenny technique has a drawback in that it does not require a significant total impact (c path) as a prerequisite for mediation. This means that mediators can still be identified even when there is no significant total effect.

When analyzing the factors that influenced final grades, the regression findings indicated that neither accounting efficacy (b path: $\beta = 0.03$, $SD = 0.02$, $t = 1.51$, $p = 0.134$) nor motivation (c path: $\beta = 0.06$, $SD = 0.03$, $t = 0.20$, $p = 0.846$) were statistically significant predictors. The statistical model demonstrated 23.1% of the variability ($R^2 = 0.23$) was related to students' final grade.

The findings of the study reveal that motivation has a substantial impact on the dependent variable of accounting efficacy ($\beta = 0.72$, $SD = 0.11$, $t = 6.76$, $p < 0.001$). The statistical model demonstrated a coefficient of determination ($R^2 = 0.23$), indicating that it accounted for 23.1% of the variability seen with accounting efficacy.

The evaluation of the connection of mediation revealed a non-significant direct effect between motivation and students' final grade ($\beta = 0.01$, $SD = 0.03$, $t = 0.20$, $p = 0.846$). Moreover, the statistical analysis of total effect revealed a non-statistical relationship between motivation and students' final grade ($\beta = 0.03$, $SD = 0.03$, $t = 0.98$, $p = 0.331$). Based on the importance of direct and total effects, it can be deduced that there does not exist a state of mediation in the association between motivation and students' final grade.

Table 26 details the relationships tested in this model.

TABLE 26

Hypothesis 6a

Variable	Estimate	SD	VIF	Tolerance	t	p
DV: Final grade						
(Intercept)	2.46	0.31			7.87	0.000
Accounting efficacy	0.03	0.02	1.26	0.796	1.51	0.134
Motivation	0.06	0.03	1.24	0.805	0.20	0.846
Controls						
Grade point average	0.24	0.06	1.03	0.974	3.85	0.000
Age	-0.01	0.00	1.05	0.953	-1.55	0.124
Class year	-0.04	0.03	1.02	0.978	-1.19	0.237
Gender	0.04	0.07	1.04	0.964	0.60	0.524
R^2	0.23					
DV: Accounting efficacy						
(Intercept)	4.75	1.10			4.32	0.000
Motivation	0.72	0.11	1.03	0.974	6.76	0.000
Controls						
Grade point average	-0.32	0.23	1.03	0.975	-1.40	0.160
Age	0.02	0.01	1.03	0.974	1.08	0.283
Class year	-0.09	0.12	1.02	0.978	-0.72	0.472
Gender	0.08	0.25	1.04	0.966	0.31	0.760
R^2	0.23					
Direct						
Motivation → Final grade	0.01	0.03			0.20	0.846
Total						
Motivation → Final grade	0.03	0.03			0.98	0.331

HYPOTHESIS 6b

Mediation analysis is a crucial statistical tool that plays a significant role in the pursuit of comprehending the fundamental mechanisms by which variables exert their influence on each other. The primary objective of this hypothesis was to examine the potential mediating role of students' accounting efficacy on the relationship between their motivation and their applicability of learned material.

Along with examining students' applicability of learned material, their motivation, and their accounting efficacy, the control variables of students' grade point average, class year, age, and gender were included to mitigate the possibility of false or muddled associations in the observations. By using these control measures, there could be greater confidence placed in the robustness of the findings pertaining to the core variables of interest.

The study adhered to the guidelines proposed by Baron and Kenny (1986) for developing mediation. However, it is noteworthy that Hayes's PROCESS macro extends beyond their fundamental framework. The Baron and Kenny technique has a drawback in that it does not require a significant total impact (c path) as a prerequisite for mediation. This means that mediators can still be identified even when there is no significant total effect.

When analyzing the factors that influenced students' applicability of learned material, the regression findings indicated that accounting efficacy (b path: $\beta = 0.23$, *SD* $= 0.03$, $t = 7.94$, $p < .001$) was a significant predictor, while motivation (c path: $\beta = 0.18$, *SD* $= 0.05$, t $= 3.97$, $p = 0.846$) was not. The statistical model demonstrated 24.6% of the variability ($R^2 = 0.25$) was related to students' applicability of learned material.

The findings of the study reveal that a student's motivation has a substantial impact on the dependent variable of a student's accounting efficacy ($\beta = 0.72$, $SD = 0.11$, $t = 6.76$, $p < 0.001$). The statistical model demonstrated a coefficient of determination ($R^2 = 0.23$), indicating that it accounted for 23.1% of the variability seen in accounting efficacy.

The evaluation of the connections of mediation revealed a significant direct effect between students' motivation and their applicability of learned material ($\beta = 0.18$, $SD = 0.05$, $t = 3.97$, $p < .001$). Moreover, the statistical analysis of total effect revealed a statistical relationship between students' motivation and their applicability of learned material ($\beta = 0.34$, $SD = 0.05$, $t = 7.28$, $p < .001$). Based on the importance of direct and total effects, it was deduced that a state of mediation does not exist in the association between students' motivation and their applicability of learned material.

Table 27 details the relationships tested in this model.

TABLE 27

Hypothesis 6b

Variable	Estimate	SD	VIF	Tolerance	t	p
DV: Applicability of learned material						
(Intercept)	2.70	0.44			6.14	0.000
Accounting efficacy	0.23	0.03	1.26	0.796	7.94	0.000
Motivation	0.18	0.05	1.24	0.805	3.97	0.846
Controls						
Grade point average	0.02	0.09	1.03	0.974	3.85	0.000
Age	-0.00	0.01	1.05	0.953	-0.83	0.406
Class year	0.10	0.05	1.02	0.978	2.23	0.027
Gender	0.09	0.10	1.04	0.964	0.88	0.378
R^2	0.25					
DV: Accounting efficacy						
(Intercept)	4.75	1.10			4.32	0.000
Motivation	0.72	0.11	1.03	0.974	6.76	0.000
Controls						
Grade point average	-0.32	0.23	1.03	0.975	-1.40	0.160
Age	0.02	0.01	1.03	0.974	1.08	0.283
Class year	-0.09	0.12	1.02	0.978	-0.72	0.472
Gender	0.08	0.25	1.04	0.966	0.31	0.760
R^2	0.23					
Direct						
Motivation → Final grade	0.18	0.05			3.97	0.00
Total						
Motivation → Final grade	0.34	0.05			7.28	0.00

HYPOTHESIS 7a

Mediation analysis is a crucial statistical tool that plays a significant role in the pursuit of comprehending the fundamental mechanisms by which variables exert their influence on each other. The primary objective of this hypothesis was to examine the potential mediating role of students' accounting efficacy in the relationship between course structure and their final grade.

Along with examining course structure, students' final grades, and their accounting efficacy, the control variables of their grade point average, class year, age, and gender were included to mitigate the possibility of false or muddled associations in the observations. By using these control measures, greater confidence could be placed in the robustness of the findings pertaining to the core variables of interest.

The study adhered to the guidelines proposed by Baron and Kenny (1986) for developing mediation. However, it is noteworthy that Hayes's PROCESS macro extends beyond their fundamental framework. The Baron and Kenny technique has a drawback in that it does not require a significant total impact (c path) as a prerequisite for mediation. This means that mediators can still be identified even when there is no significant total effect.

When analyzing the factors that influence final grades, the regression findings indicate that neither accounting efficacy (b path: $\beta = 0.02$, $SD = 0.31$, $t = 4.11$, $p = 0.377$) nor course structure (c path: $\beta = 0.02$, $SD = 0.03$ $t = 0.85$, $p = 0.394$) are statistically significant predictors. The statistical model demonstrated that 10.3% of the variability ($R^2 = 0.10$) related to students' applicability of learned material.

The findings of the study reveal that course structure has a substantial impact on the dependent variable of students' accounting efficacy ($\beta = 0.72$, $SD = 0.11$, $t = 6.76$, $p <$

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0.001). The statistical model demonstrated a coefficient of determination ($R^2 = 0.399$), indicating that it accounted for 39.9% of the variability seen in students' accounting efficacy.

The evaluation of the connections of mediation revealed a non-significant direct effect between course structure and students' final grade ($\beta = 0.102$, $SD = 0.03$, $t = 0.85$, $p = 0.394$). Moreover, the statistical analysis of total effect revealed a non-statistical relationship between course structure and students' final grade ($\beta = 0.04$, $SD = 0.02$, $t = 1.77$, $p = 0.078$). Based on the importance of direct and total effects, it was deduced that a state of mediation did not exist in the association between course structure and students' Final grade.

Table 28 details the relationships tested in this model.

TABLE 28

Hypothesis 7a

Variable	Estimate	SD	VIF	Tolerance	t
DV: Final grade					
(Intercept)	2.43	0.31			4.11
Accounting efficacy	0.02	0.02	1.76	0.567	0.89
Course structure	0.02	0.03	1.75	0.573	0.85
Controls					
Grade point average	0.24	0.06	1.03	0.974	3.85
Age	-0.01	0.00	1.05	0.956	-1.58
Class year	-0.04	0.03	1.03	0.970	-1.28
Gender	0.03	0.07	1.04	0.960	0.48
R^2	0.10				
DV: Accounting efficacy					
(Intercept)	4.75	1.10			4.32
Course structure	0.72	0.11	1.03	0.973	6.76
Controls					
Grade point average	-0.26	0.20	1.03	0.975	-1.30
Age	0.01	0.01	1.02	0.976	0.94
Class year	-0.16	0.11	1.03	0.975	-1.49
Gender	0.03	0.22	1.03	0.967	0.12
R^2	0.40				
Direct					
Course structure → Final grade	0.02	0.03			0.85
Total					
Course structure → Final grade	0.04	0.02			1.77

HYPOTHESIS 7b

Mediation analysis is a crucial statistical tool that plays a significant role in the pursuit of comprehending the fundamental mechanisms by which variables exert their influence on each other. The primary objective of this hypothesis was to examine the potential mediating role of accounting efficacy in the relationship between course structure and students' applicability of learned material.

Along with examining course structure, students' applicability of learned material, and their accounting efficacy, the control variables of their grade point average, class year, age, and gender were included to mitigate the possibility of false or muddled associations in the observations. By using these control measures, there could be greater confidence placed in the robustness of the findings pertaining to the core variables of interest.

The study adhered to the guidelines proposed by Baron and Kenny (1986) for developing mediation. However, it is noteworthy that Hayes's PROCESS macro extends beyond their fundamental framework. The Baron and Kenny technique has a drawback in that it does not require a significant total impact (c path) as a prerequisite for mediation. This means that mediators can still be identified even when there is no significant total effect.

When analyzing the factors that influence students' applicability of learned material, the regression findings indicated that both students' accounting efficacy (b path: $\beta = 0.19$, $SD = 0.03$, $t = 5.89$, $p < .0001$) and course structure (c path: $\beta = 0.18$, $SD = 0.04$, $t = 4.59$, $p < .0001$) were statistically significant predictors. The statistical model demonstrated that 45.8% of the variability ($R^2 = 0.46$) related to students' applicability of learned material.

The findings of the study reveal that course structure has a substantial impact on the dependent variable of accounting efficacy ($\beta = 0.76$, $SD = 0.07$, $t = 10.43$, $p < 0.001$). The statistical model demonstrated a coefficient of determination ($R^2 = 0.40$), indicating that it accounted for 39.9% of the variability seen in students' accounting efficacy.

The evaluation of the connection of mediation revealed a significant direct effect between course structure and students' applicability of learned material ($\beta = 0.18$, $SD = 0.04$, $t = 4.59$, $p < .0001$). Moreover, the statistical analysis of total effect revealed a statistical relationship between course structure and students' applicability of learned material ($\beta = 0.32$, $SD = 0.03$, $t = 9.55$, $p < .0001$). Based on the importance of direct and total effects, it was deduced that there existed a state of mediation in the association between course structure and students' applicability of learned material.

Table 29 details the relationships tested in this model.

TABLE 29

Hypothesis 7b

Variable	Estimate	SD	VIF	Tolerance	t	p
DV: Applicability of learned material						
(Intercept)	2.49	0.44			5.63	0.000
Accounting efficacy	0.19	0.03	1.76	0.573	5.89	0.000
Course structure	0.18	0.04	1.75	0.573	4.59	0.000
Controls						
Grade point average	0.02	0.09	1.03	0.974	0.17	0.863
Age	-0.00	0.01	1.05	0.956	-0.77	0.443
Class year	0.08	0.05	1.03	0.970	1.78	0.076
Gender	0.09	0.10	1.04	0.960	0.90	0.371
R^2	0.46					
DV: Accounting efficacy						
(Intercept)	2.35	1.03			2.29	0.023
Course structure	0.76	0.07	1.03	0.973	10.43	0.000
Controls						
Grade point average	-0.26	0.20	1.03	0.974	-1.30	0.194
Age	0.01	0.01	1.02	0.976	0.94	0.348
Class year	-0.16	0.11	1.03	0.975	-1.49	0.137
Gender	0.03	0.22	1.03	0.967	0.12	0.904
R^2	0.40					
Direct						
Course structure → Applicability of learned material	0.18	0.04			4.59	0.000
Total						
Course structure → Applicability of learned material	0.32	0.03			9.55	0.000

HYPOTHESIS 8a

Mediation analysis is a crucial statistical tool that plays a significant role in the pursuit of comprehending the fundamental mechanisms by which variables exert their influence on each other. The primary objective of this hypothesis was to examine the potential mediating role of students' accounting efficacy in the relationship between classroom justice and their final grades.

Along with examining classroom justice, students' final grade, and their accounting efficacy, the control variables of students' grade point average, class year, age, and gender were included to mitigate the possibility of false or muddled associations in the observations. By using these control measures, greater confidence could be placed in the robustness of the findings pertaining to the core variables of interest.

The study adhered to the guidelines proposed by Baron and Kenny (1986) for developing mediation. However, it is noteworthy that Hayes's PROCESS macro extends beyond their fundamental framework. The Baron and Kenny technique has a drawback in that it does not require a significant total impact (c path) as a prerequisite for mediation. This means that mediators can still be identified even when there is no significant total effect.

When analyzing the factors that influenced students' final grades, the regression findings indicated that neither students' accounting efficacy (b path: $\beta = 0.04$, $SD = 0.02$, $t = 1.69$, $p = 0.093$) nor classroom justice (c path: $\beta = -0.01$, $SD = 0.02$, $t = -0.34$, $p = 0.736$) were statistically significant predictors. The statistical model demonstrated that 45.8% of the variability ($R^2 = 0.46$) related to students' final grade.

The findings of the study reveal that classroom justice has a substantial impact on the dependent variable of students' accounting efficacy ($\beta = 0.60$, $SD = 0.07$, $t = 8.31$, $p <$

0.001). The statistical model demonstrated a coefficient of determination ($R^2 = 0.30$), indicating that it accounted for 30.3% of the variability seen in students' accounting efficacy.

The evaluation of the connection of mediation revealed no significant direct effects between class justice and students' final grades ($\beta = -0.01$, $SD = 0.02$, $t = -0.34$, $p = 0.736$). Moreover, the statistical analysis of total effect revealed no statistical relationship between classroom justice and students' final grades ($\beta = 0.01$, $SD = 0.02$, $t = 0.65$, $p = 0.517$). Based on the importance of direct and total effects, it was deduced that a state of mediation did not exist in the association between classroom justice and students' final grades.

Table 30 details the relationships tested in this model.

TABLE 30

Hypothesis 8a

Variable	Estimate	SD	VIF	Tolerance	t	p
DV: Final grade						
(Intercept)	2.64	0.31			8.58	0.000
Accounting efficacy	0.04	0.02	1.44	0.695	1.69	0.093
Classroom justice	-0.01	0.02	1.42	0.707	-0.34	0.736
Controls						
Grade point average	0.02	0.09	1.03	0.975	0.17	0.863
Age	-0.00	0.01	1.05	0.956	-0.77	0.443
Class year	0.08	0.05	1.04	0.958	1.78	0.076
Gender	0.09	0.10	1.03	0.974	0.90	0.371
R^2	0.46					
DV: Accounting efficacy						
(Intercept)	3.74	1.08			3.48	0.001
Classroom justice	0.60	0.07	1.02	0.980	8.31	0.000
Controls						
Grade point average	-0.34	0.22	1.02	0.977	-1.56	0.122
Age	0.02	0.01	1.02	0.984	1.36	0.174
Class year	-0.20	0.11	1.04	0.965	-1.76	0.080
Gender	0.18	0.24	1.03	0.974	0.74	0.458
R^2	0.30					
Direct						
Classroom justice → Final grade	-0.01	0.02			-0.34	0.736
Total						
Classroom justice → Final grade	0.01	0.02			0.65	0.517

HYPOTHESIS 8b

Mediation analysis is a crucial statistical tool that plays a significant role in the pursuit of comprehending the fundamental mechanisms by which variables exert their influence on each other. The primary objective of this hypothesis was to examine the potential mediating role of students' accounting efficacy in the relationship between classroom justice and their applicability of learned material.

Along with examining classroom justice, students' applicability of learned material, and their accounting efficacy, the control variables of their grade point average, class year, age, and gender were included to mitigate the possibility of false or muddled associations in the observations. By using these control measures there could be greater confidence in the robustness of the findings pertaining to the core variables of interest.

The study adhered to the guidelines proposed by Baron and Kenny (1986) for developing mediation. However, it is noteworthy that Hayes's PROCESS macro extends beyond their fundamental framework. The Baron and Kenny technique has a drawback in that it does not require a significant total impact (c path) as a prerequisite for mediation. This means that mediators can still be identified even when there is no significant total effect.

When analyzing the factors that influence students' applicability of learned material, the regression findings indicated that both their accounting efficacy (b path: β = 0.19, SD = 0.03, t = 6.64, $p < 0.001$) and classroom justice (c path: β = 0.19, SD = 0.03, t = 5.81, $p < 0.001$) were statistically significant predictors. The statistical model demonstrated that 49.4% of the variability (R^2 = 0.49) related to students' applicability of learned material.

The findings of the study reveal that classroom justice has a substantial impact on the dependent variable of students' accounting efficacy ($\beta = 0.60$, $SD = 0.07$, $t = 8.31$, $p < 0.001$). The statistical model demonstrated a coefficient of determination ($R^2 = 0.30$), indicating that it accounted for 30.3% of the variability seen in students' accounting efficacy.

The evaluation of the connection of mediation revealed significant direct effects between classroom justice and students' applicability of learned material ($\beta = 0.19$, $SD = 0.03$, $t = 5.81$, $p < 0.001$). Moreover, the statistical analysis revealed a strong relationship between classroom justice and students' applicability of learned material ($\beta = 0.30$, $SD = 0.03$, $t = 9.85$, $p < 0.001$). Based on the importance of direct and total effects, it was deduced that there exists a state of partial mediation in the association between classroom justice and students' applicability of learned material.

Table 31 details the relationships tested in this model.

TABLE 31

Hypothesis 8b

Variable	Estimate	SD	VIF	Tolerance	t	p
DV: Applicability of learned material						
(Intercept)	2.43	0.42			5.72	0.000
Accounting efficacy	0.19	0.03	1.44	0.695	6.64	0.000
Classroom justice	0.19	0.03	1.42	0.707	5.81	0.000
Controls						
Grade point average	0.00	0.04	1.03	0.975	0.02	0.988
Age	-0.00	0.01	1.05	0.956	-0.52	0.602
Class year	0.06	0.04	1.04	0.958	1.40	0.164
Gender	0.13	0.09	1.03	0.974	1.36	0.177
R^2	0.49					
DV: Accounting efficacy						
(Intercept)	3.74	1.08			3.48	0.001
Classroom justice	0.60	0.07	1.02	0.980	8.31	0.000
Controls						
Grade point average	-0.34	0.22	1.02	0.977	-1.59	0.122
Age	0.02	0.01	1.02	0.984	1.36	0.174
Class year	-0.20	0.11	1.04	0.965	-1.76	0.080
Gender	0.18	0.24	1.03	0.974	0.74	0.458
R^2	0.30					
Direct						
Classroom justice → Applicability of learned material	0.19	0.03			5.81	0.000
Total						
Classroom justice → Applicability of learned material	0.30	0.03			9.85	0.000

Table 32 provides a summary of all hypotheses.

TABLE 32
Summary of Hypotheses

Hypotheses	Supported	Weakly supported	Rejected
1a. Motivation positively relates to final grades			X
1b. Motivation positively relates to applicability of learned material		X	
2a. Course structure positively relates to final grades			X
2b. Course structure positively relates to applicability of learned material	X		
3a. Classroom justice positively relates to final grades			X
3b. Classroom justice positively relates to applicability of learned material	X		
4a. Motivation positively relates to accounting efficacy	X		
4b. Course structure positively relates to accounting efficacy	X		
4c. Classroom justice positively relates to accounting efficacy	X		
5a. Accounting efficacy positively relates to final grades		X	
5b. Accounting efficacy positively relates to applicability of learned material	X		
6a. Motivation is positively related to final grades and is mediated by accounting efficacy	X		
6b. Motivation is positively related to applicability of learned material	X		
7a. Course structure is positively related to final grades and is mediated by accounting efficacy			X

7b. Course structure is positively related to applicability of learned material	X	
8a. Classroom justice is positively related to final grades and is mediated by accounting efficacy		X
8b. Accounting efficacy mediates justice and applicability of learned material	X	

DISCUSSION

This chapter is important for analyzing and interpreting the hypotheses considering the research objectives and broader academic context. Throughout this investigation, several of the reasons for why best practices do not always lead to best performance were analyzed. The purpose of this section is to discuss the ramifications of the findings, investigate the hypotheses, and evaluate the significance of the results in the context of the existing literature and theoretical frameworks.

The extent to which the collected evidence supported or contradicted the initial hypotheses will be discussed as the key findings of this study are presented. In addition, the limitations encountered during the research process will be discussed, recognizing their potential impact on the findings, and recommendations will be offered for future research.

The findings will be contextualized by comparing them with relevant studies to identify areas of convergence and divergence. Underlying patterns will be identified, connections drawn, and plausible explanations proposed for observed trends or variations by combining the findings with previous academic research.

The overriding purpose of this section is to provide a comprehensive and balanced review of the research outcomes, thereby fostering a deeper comprehension of their implications and significance. In hopes of stimulating further academic inquiry and discussion, the results of the study will be critically evaluated, thereby laying the foundation for future research on the topic of best practice versus best performance.

KEY FINDINGS

The following conclusions were drawn from the investigation after a thorough analysis:

The findings of the study emphasize the critical significance of deep learning for students' overall academic performance, especially in the context of accounting courses, and how course structure and classroom justice can enhance students' deep learning. Deep learning approaches, in contrast to surface or rote learning, enable students to comprehend subject matter more deeply and critically, thereby positively influencing their long-term academic success. This finding supports the work of previous researchers who have highlighted the importance of deep learning strategies for enhancing students' academic performance (Blackwell et al., 2000; Hwang & Kim, 2000). As educators and institutions strive to improve student learning outcomes, the incorporation of pedagogical methods that promote profound learning becomes crucial.

The results of this study suggest that student motivation has a mixed impact on their accounting efficacy, final course grade, and deep learning outcomes. This is consistent with previous research in the discipline (Bolkan et al., 2016), which also found weak relationships between student motivation and their academic performance. Moreover, the study reveals that student motivation is unaffected by factors such as grade

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point average, age, class year, or gender, indicating that other factors may play a more significant role in determining student motivation (Friedman & Mandel, 2011).

The results of the study indicate a significant and direct relationship between students' grade point averages and their ultimate course grades. This relationship highlights the importance of grade point averages as a cumulative reflection of students' performance in multiple courses. Students' academic accomplishments are summarized in their grade point average, and it is a reliable indicator of their overall performance in individual courses, including accounting courses. This finding is consistent with previous research (Kuncel et al. 2007) findings that have emphasized the predictive validity of grade point average on final grades, making it a valuable instrument for educators in determining students' potential for success.

DEEP VS. SURFACE LEARNING

The findings of this dissertation strongly indicate that in determining students' final grades and long-term academic success, the impact of deep learning significantly outweighs the impact of surface learning. Throughout the course of the study, it became clear that course grades that were a result of deep learning had a greater influence on long-term academic outcomes than those based on superficial or rote learning. This conclusion is consistent with the findings of Biggs and Tang (2011), who emphasized the importance of in-depth learning approaches for enhancing student performance and their overall subject comprehension.

Deep learning strategies empower students to engage critically with course content, fostering a deeper understanding of concepts and encouraging active knowledge construction. As emphasized by Carter (2009), such an approach enables students to

establish connections between concepts, resulting in enhanced retention and transfer of knowledge.

Educators and institutions play a crucial role in fostering an environment that encourages students to engage in practices that promote their in-depth learning. According to Marton and Säljö (1976), educators should emphasize learning methods that foster higher-order thinking skills and meaningful subject matter comprehension, which can be enhanced through their course structure and enactment of classroom justice. Moreover, the implementation of formative assessment techniques, as recommended by Black and Wiliam (2010), can provide students with valuable feedback, nurture a culture of continuous improvement, and facilitate the adoption of deep learning strategies.

In summary, the findings of this study demonstrate that deep learning strategies are in fact more essential than superficial learning strategies. By recognizing the significance of deep learning and adopting appropriate pedagogical practices, educational institutions can cultivate environments that encourage students' critical thinking and the development of a deeper understanding of the subjects they study.

INFLUENCE OF STUDENT MOTIVATION

The findings of this study indicate that students' motivation has a mixed influence on their accounting efficacy, final course grade, and applicability of learned material (i.e., deep learning). This conclusion is consistent with prior research results in the field (Bolkan et al., 2016), verifying that student motivation alone may not be the sole determinant of their academic performance and obtaining learning outcomes in accounting courses.

In addition, the results reveal that student motivation is unaffected by demographic variables such as their GPA, age, class year, and gender. Bolkan et al. (2016) have examined the relationship between course structure and student motivation in a variety of educational contexts. Consequently, it can be inferred that the personal and academic background of accounting students may not substantially affect their motivation levels.

In general, these findings provide educators with valuable insights for enhancing student performance and learning experiences within accounting courses.

IMPACT OF GRADE POINT AVERAGE

The purpose of this study was to determine whether there was a direct relationship between students' grade point average and their final grades. Through an in-depth analysis of relevant academic literature and a comprehensive examination of students' performance data, the findings of this study provide solid evidence in support of the claim that students' grade point averages exercise a direct influence on their final grades.

The accumulation of multiple course grades serves as the basis for calculating a students' grade point average. This suggests that a student's overall academic performance, as reflected by their grade point average, incorporates their accomplishments across multiple subjects and semesters. Since a student's grade point average is a comprehensive indicator of their academic abilities, this implies that it also has a direct bearing on their final grades. This viewpoint emphasizes the significance of students' consistent effort and commitment throughout their academic career, as these factors have a significant impact on their grade point average.

In addition, the results of this study support the findings of Geiser and Santelices (2007), who investigated the predictive validity of grade point average on prospective academic success. The results of their research reinforces the significance of grade point average as an indicator of a student's academic achievements and future potential by establishing a direct relationship between their GPA and final grades.

The evidence in this study strongly supports the notion that grade point average has a direct effect on final grades. As the grade point average reflects a student's performance in multiple courses, it is a reliable indicator of their overall academic abilities. By recognizing this relationship, educators and institutions can make more informed decisions to assist students in their educational endeavors, thereby creating more conducive learning environments for academic development and success.

Figure 12 is a composite diagram of all the hypotheses of the study.

FIGURE 12
Composite Diagram of Hypotheses
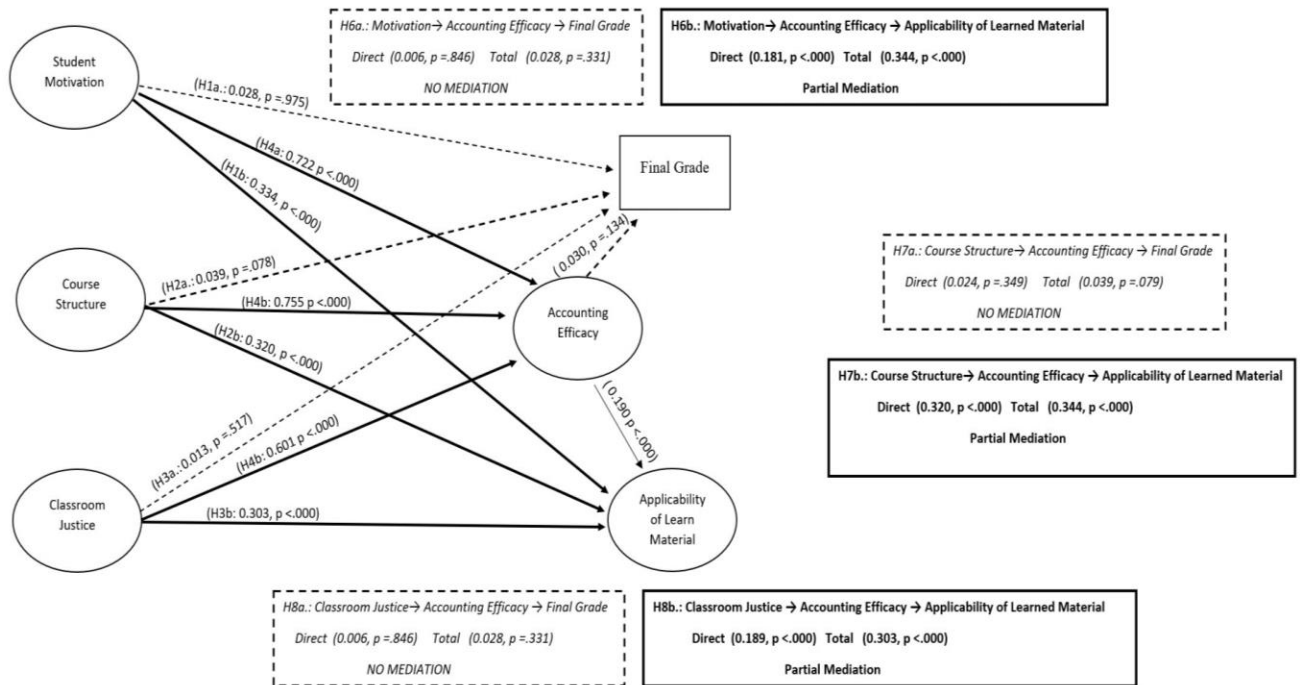
INTERPRETATIONS OF HYPOTHESES

HYPOTHESIS 1a

The findings of Hypothesis 1a, which revealed a nonsignificant relationship

between students' motivation and their final grades, were examined using the

instructional behavior model. This model emphasizes the significance of structured

learning environments in influencing the perceptions of students and their learning

outcomes. While the self-determination theory (Deci & Ryan, 1985) distinguishes

between intrinsic and extrinsic motivation and suggests that intrinsic motivation often

leads to better learning outcomes, the instructional behavior model proposes that the

learning environment, including students' perceived fairness of the course and the

classroom structure, may moderate this relationship. Even if students are intrinsically

motivated, their grades may not improve if they perceive the learning environment to be

unstructured or unfair. This model was also used in the present study to contextualize the

expected findings that a student's final grade would be significantly impacted by their

GPA. The instructional behavior model suggests that factors such as the perceived

classroom environment by students and teachers' instructional strategies may also play

crucial roles in determining students' academic performance. This scenario is further

complicated by Brackett et al.'s (2011) work, who introduced elements such as emotional

intelligence and socioeconomic conditions into the discussion of instructional strategies.

Methodologically, the scope of the present study may not have encompassed the entire

spectrum of variables that the instructional behavior model considers essential. Although

they may have been initially surprising, the results of Hypothesis 1a emphasize the need

to consider a broader range of both intrinsic and extrinsic factors related to students when

analyzing their academic success.

HYPOTHESIS 1b

The instructional behavior model provides a valuable framework for examining

the relationship between students' motivation and their applicability of learned material,

highlighting the central role of structured learning environments in influencing students'

perceptions and outcomes. This viewpoint is consistent with Vygotsky's (1978)

sociocultural theory, according to which learning is profoundly influenced by the social

context, including the classroom's structure and dynamics. The multiple regression

analysis of the current study revealed that student motivation had a moderate impact on

their applicability of learned material. This may indicate that positive student motivation

can lead to deep learning over surface learning. While students' motivation had an impact

on their applicability of learned material, the other traditional academic indicators such as students' GPA, age, class year, and gender had no significant impact on their applicability of learned material. This finding echoes Bandura's (1986) assertion that self-efficacy and ambient factors can sometimes trump intrinsic motivation in determining learning outcomes. The findings of the current study of weak R^2 values of 24.6% indicate that the variables in the model captured only a small proportion of the factors that influence students' applicability of learned material. While sample size may play a role, it is also possible that other intrinsic and extrinsic variables, which were possibly neglected in the study, play a more significant role. Within the instructional behavior model, which is supported by the constructivist theory of Bruner (1996), classroom structure, instructional strategies, and teacher-student rapport are essential to learning outcomes. Taking this in consideration as the findings of the present study were analyzed, it became evident that a more holistic approach, integrating multiple variables and drawing from a larger sample, would be required to decipher the complexities of students' motivation and their perceived relevance of academic content.

Through the lens of the instructional behavior model, the investigations of Hypotheses 1a and 1b yielded nuanced insights into the complex dynamics of student motivation in academic contexts. While the analysis of Hypothesis 1a did not reveal a relationship between students' motivation and their final grades, it did imply that students' GPA can have a significant impact on their final grades even if the learning environment may not result in improved student grades because of a lack of a perceived fairness by the students. In contrast, the investigation of Hypothesis 1b revealed that students' motivation had a modest impact on their applicability of learned material, while

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traditional academic indicators such as their GPA, age, class year, and gender had no significant effect on how they perceived the relevance of their learning. This highlights the model's emphasis on the influence of classroom structure, instructional strategies, and teacher-student interactions on students' academic perceptions and their learning outcomes. Collectively, these findings emphasize the multifaceted nature of academic achievement and the central role of the learning environment, suggesting that a wider range of intrinsic and extrinsic factors, beyond motivation alone, influence student learning outcomes.

HYPOTHESIS 2a

The objective of Hypothesis 2a was to determine the impact of course structure on students' final grades. A relationship between course structure and students' final grades was anticipated based on the results of prior research (Wingfield & Black, 2005). However, the findings of the present study contradicted the proposed hypothesis. Despite previous literature suggesting there is a link between course structure and students' academic performance (Javadizadeh et al., 2022), the analysis of the data for the current study revealed that course structure had no significant impact on students' final grades. This discrepancy may be attributable, in part, to the different methods employed in this study versus those of others. For example, while Javadizadeh et al. (2022) assessed students' perceptions regarding the certainty of classroom outcomes, the focus of this study was on course structure. This suggests that the present study may provide a more accurate depiction of the association between course structure and students' final grades.

Similar to the findings related to Hypothesis 1a, in the findings of Hypothesis 2a students' GPA was found to have a significant impact on their final grades while the

remaining control variables of students' age, class year, and gender did not have a significant effect on their final grades. These findings are consistent with the results of recent research (Husaini & Shukor, 2023). In the current study, the regression model's modest R^2 values suggested the existence of additional factors that might influence students' final grades. The findings, which were based on the instructional belief model, emphasize the complex relationship between educators' beliefs, their pedagogical strategies, and student learning outcomes. While course structure, an extension of these instructional choices, did not relate directly with students' final grades in the study, it is possible that instructional beliefs influence course design and delivery, thereby influencing students' perceptions and interactions (Kagan, 1992; Pajares, 1992).

HYPOTHESIS 2b

For Hypothesis 2b, the goal was to determine the relationship between students' applicability of learned material and course structure. Using a linear regression analysis, a significant relationship was confirmed between course structure and students' applicability of the learned material. This is consistent with the instructional behavioral model, which emphasizes the significance of structured learning environments in influencing students' perceptions and learning outcomes (Bandura, 1986; Zimmerman, 2000). Keeping in line with the assertion presented in the model and the results of previous research (Schunk, 1991), in the present study it was found that students who perceived a well-organized course were more likely to find the material pertinent to their academic journey.

In keeping in line with the results of previous research (Kagan, 1992), in the current study, demographic variables such as students' GPA, age, class year, and gender

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did not demonstrate a significant relationship with their applicability of learned material. This means that other factors may play a lesser role than course structure does in determining students' applicability of learned material. The findings, which are sample-specific, highlight the need for additional research to be conducted in diverse contexts to generalize these insights.

In conclusion, the findings related to both Hypothesis 2a and 2b contribute to the larger discourse on the factors that determine academic achievement. Although course structure played an important role in students' applicability of learned material, its effect on students' final grades was more nuanced. These insights highlight the multifaceted nature of academic outcomes and the significance of incorporating a variety of factors into educational research.

HYPOTHESIS 3a

Within educational research, it has been hypothesized that classroom justice influences student learning outcomes. A relationship between classroom justice and final grades was anticipated in the present study based on the instructional behavior model, which emphasizes the importance of structured learning environments in molding students' perceptions and learning outcomes (Bandura, 1986; Zimmerman, 2000). Using a multiple regression analysis with SPSS Version 4.2 and controlling for variables such as students' grade point average, age, class year, and gender, the goal was to determine this relationship. Contrary to the expectations presented in Hypothesis 3a and certain segments of the literature (Chory-Assad & Paulsel, 2004), no significant relationship was found in the present study between classroom justice and students' final grades. This finding is consistent with several study's results that showed limited evidence of the

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direct impact of classroom justice on students' academic outcomes, but it contrasts with the results of other studies that suggested a stronger link between classroom justice and students' academic outcomes (Chory, 2007).

Similar to the findings related to Hypothesis 1a, the findings for Hypothesis 3a showed that students' GPA had a significant impact on their final grade, but the remaining control variables of students' age, class year, and gender did not have an effect on their final grades. The R^2 values of 0.09 (8.9%) used in the model suggested the presence of additional influential variables in determining students' final grades.

In conclusion, the results of the research indicate that classroom justice did not significantly affect students' final grades, providing insights that were both similar and different from what was found in the existing literature. These findings highlight the multifaceted nature of academic outcomes and the possible nuances between classroom justice and student performance. Future research endeavors should delve deeper into this complex relationship, particularly within the context of the instructional behavior model.

HYPOTHESIS 3b

While investigating Hypothesis 3b, multiple regressions were employed to decipher the intricate relationships between students' applicability of learned materials and the overarching concept of classroom justice. Based on the tenets of the instructional behavior model, which emphasizes the profound influence of structured learning environments on students' cognitive frameworks (Bruner, 1996; Vygotsky, 1978), it was hypothesized in the present study that classroom justice would be a key factor in shaping students' perceptions of the importance of their academic content.

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The findings are illuminating. The variance in the students' applicability of learned material was 36.8% which was attributable to classroom justice, emphasizing its central function within the context of the study. The significant influence of classroom justice on students' applicability of learned material is consistent with other findings of previous academic research, indicating that equitable and just classroom environments have a significant impact on students' academic assimilation and their perceptions of content relevancy (Brophy, 1987; Deci & Ryan, 1985).

Inadvertently, the results also paralleled those of Sanders and Aplin-Houtz (2023). In their study, the authors examined student evaluations of teaching (SETs) through the lens of students' classroom justice perceptions associated with negative evaluation feedback. In a qualitative study performed by Colquitt (2001) it was found that students frequently link the applicability of what they learn to their perceptions of informational justice. However, the emphasis of the current study was on classroom justice. The results of the study suggest that students' perceptions of informational justice may influence the relationship between students' global classroom justice perceptions and their applicability of learned material at high levels for all constructs. Compared to the findings of Sanders and Aplin-Houtz (2023), Colquitt relayed that it is possible that students' perceptions of applicability influence both the positive and negative extremes of the spectrum of perceptions.

The control variables of the current study, which included students' grade point average, age, class year, and gender, had no significant impact on student's applicability of learned material. This finding highlight that while classroom justice stands out as a primary factor in modulating students' academic perceptions, other traditionally studied

demographic and academic variables may play a more complex role. These insights not only deepen an understanding of the complicated interplay of academic perceptions, but also highlight the need for additional research in this field. To cultivate enriched and responsive learning ecosystems that resonate with the diverse perceptions and needs of students, it is essential to further investigate these intricate relationships, particularly within the context of the instructional behavior model and the changing academic environment.

The results of Hypothesis 3a and 3b provide a multifaceted comprehension of the role of classroom justice in academic achievement. In contrast to the previously established notions of the instructional behavior model and other research findings, the findings of Hypothesis 3b demonstrate a significant relationship between classroom justice and students' applicability of learned material. In line with previous literature, however, the findings of the current study demonstrate the central role that classroom justice plays in influencing students' perceptions of the relevance of course material. These contradictory results underscore the complexity of academic success predictors and the need for a comprehensive approach in educational research to determine the nuanced interplay of various factors influencing academic outcomes.

HYPOTHESIS 4a

Through the lens of the instructional behavior model, which emphasizes the significance of structured learning environments in shaping students' perceptions and outcomes, the aim of proving Hypothesis 4a was to shine a light on the relationship between students' accounting efficacy and motivation. This model, grounded in the works of Bandura (1986) and Zimmerman (2000), suggests that the environment in

which learning occurs can significantly influence student learning outcomes. The findings of the current study, derived from a multiple regression analysis, also revealed that student motivation significantly influenced their accounting efficacy. This was further evidenced by the results of R^2 values of 36.8%, indicating that students' motivation accounted for a solid variance in their accounting efficacy. This outcome is in line with certain segments of prior literature that have posited a positive relationship between students' motivation and domain-specific proficiency, such as accounting proficiency (Deci & Ryan, 1985).

Furthermore, the control variables of the current study, including students' grade point average, age, class year, and gender, did not emerge as significant predictors of students' motivation. These findings align with Vygotsky's (1978) sociocultural theory, which underscores the importance of contextual and environmental factors over individual attributes in determining learning outcomes.

Similar to some established theories, such as the self-determination theory (Deci & Ryan, 1985) that suggests students' intrinsic motivation can lead to improved learning outcomes, the present study found a significant relationship between students' motivation and accounting efficacy.

HYPOTHESIS 4b

Drawing from the instructional behavior model, the goal of researching Hypothesis 4b was to understand the interplay between students' accounting efficacy and the structure of a course and emphasize the profound influence of structured learning environments on students' perceptions and learning outcomes. The findings, which highlight a significant positive relationship between course structure and students'

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accounting efficacy, resonate with the principles of Bandura (1986) and Zimmerman's (2000) model, suggesting that structured learning environments can considerably bolster student learning outcomes. This relationship between structured learning environments and student learning outcomes is further supported by Biggs' (1996) constructive alignment theory, which posits that when course content and assessment methods are aligned with students' desired learning outcomes, their understanding of and efficacy in the subject matter are enhanced.

However, in the current study, the nonsignificant impact of control variables such as students' GPA, age, class year, and gender on course structure offered a departure of ideas in some of the established literature. For instance, while Vygotsky's (1978) sociocultural theory underscores the importance of contextual factors in learning, Tinto's (2012) theory of student departure emphasizes the role of individual attributes, such as students' academic performance and age, in influencing their educational experiences and learning outcomes. The findings of the current study challenge this perspective, suggesting that in the realm of accounting, individual attributes might play a more nuanced or indirect role.

Furthermore, the present study's emphasis on course structure as a determinant of students' accounting efficacy aligned with Chickering and Gamson's (1987) book entitled *Seven principles for good practice in undergraduate education*, in which they highlighted the importance of organized instruction and clear course objectives in promoting student learning and success. The insights garnered from the current study echo the sentiments of Ambrose et al. (2010), in their book *How learning works: Seven research-based principles for smart teaching*, in which they emphasized the significance

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of course design in fostering a conducive learning environment and enhancing domain-specific efficacy.

In essence, while the findings of the present study underscore the pivotal role of structured course design in enhancing students' accounting efficacy, as supported by the instructional behavior model and other educational theories, they also invite educators and researchers to reconsider the weight traditionally placed on individual attributes in influencing domain-specific learning outcomes. This study serves as a clarion call for a more holistic understanding of the myriad factors influencing student learning in specialized fields like accounting.

HYPOTHESIS 4c

The exploration of Hypothesis 4c, offered insights into the relationship between students' accounting efficacy and classroom justice that were contextualized within the broader framework of the instructional behavior model. This model, rooted in the works of Bandura (1986) and Zimmerman (2000), underscores the importance of structured and equitable learning environments in shaping students' perceptions and academic outcomes. In the current study, the significant positive relationship identified between classroom justice and students' accounting efficacy aligns with the model's principles, suggesting that students' perceptions of fairness and justice in the classroom can significantly bolster their efficacy in accounting tasks. This finding also resonates with the work of Chory-Assad and Paulsel (2004), who emphasized the role of classroom justice in influencing various student learning outcomes.

However, in the current study, the nonsignificant impact of control variables on students' accounting efficacy such as their GPA, age, class year, and gender offered a

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nuanced perspective into student learning. While Tinto's (2012) theory of student

departure emphasizes the role of individual attributes in influencing educational

experiences, the findings of the current study challenge this perspective, suggesting that

in the realm of accounting, individual attributes might play a more nuanced or indirect

role. This is further supported by Vygotsky's (1978) sociocultural theory that underscores

the importance of contextual factors over individual attributes in learning.

The positive relationship found between classroom justice and students'

accounting efficacy in the present study also aligns with the work of Deci and Ryan

(1985) and their self-determination theory, which posits that supportive and fair

environments can enhance students' intrinsic motivation, subsequently leading to

improved learning outcomes. On the other hand, in the current study, the nonsignificant

findings of the traditionally emphasized control variables contrast with some segments of

prior literature, such as the work of Duckworth and Quinn (2009) who emphasized the

role of students' grit and resilience in their academic success.

In essence, the findings of the present study related to Hypothesis 4c, while

echoing certain established educational theories, also invite a reevaluation of the weight

that is traditionally placed on individual attributes in influencing domain-specific learning

outcomes. The findings underscore the pivotal role of classroom justice in enhancing

students' accounting efficacy and highlight the multifaceted nature of academic outcomes

in specialized fields like accounting (Ambrose et al., 2010). Future research endeavors

should delve deeper into this intricate relationship, especially within the framework of the

instructional behavior model, to foster enriched learning environments that resonate with

the diverse needs of students.

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Across the findings related to Hypothesis 4a, 4b, and 4c, a consistent theme emerged when it was viewed through the lens of the instructional behavior model, which states the profound influence of structured and equitable learning environments on students' perceptions and academic outcomes in the realm of accounting. The findings of the current study that related to Hypothesis 4a revealed that accounting efficacy was significantly influenced by student motivation, a finding that aligns with established theories like the self-determination theory (Deci & Ryan, 1985). The present study's findings related to Hypothesis 4b highlighted the pivotal role of course structure in bolstering students' accounting efficacy, resonating with Biggs's (1996) constructive alignment theory and Chickering and Gamson's (1987) principles. The findings of the current study related to Hypothesis 4c moderated the significance of classroom justice in enhancing students' accounting efficacy, aligning with Chory-Assad and Paulsel's (2004) emphasis on classroom justice. Collectively, the findings of the present study challenge the traditional emphasis on individual attributes, such as students' GPA and age, in influencing domain-specific learning outcomes, suggesting that the learning environment, be it the course structure or classroom justice, plays a more nuanced and direct role. This integrated perspective underscores the multifaceted nature of academic outcomes in specialized fields like accounting and calls for a holistic approach that considers both environmental and individual factors in future research endeavors (Ambrose et al., 2010; Bandura, 1986; Zimmerman, 2000).

HYPOTHESIS 5a

The findings of the present study related to Hypothesis 5a, while failing to identify a significant relationship between students' accounting efficacy and final grades,

are illuminating when viewed through the lens of the instructional behavior model. This model, which is based on the findings of research conducted by Bandura (1986) and Zimmerman (2000), postulates that self-efficacy, or the belief that one can attain certain outcomes, plays a crucial role in determining academic performance. In the present analysis, this fundamental principle was contradicted by the lack of relationships.

In addition, the lack of a significant relationship being found between students' accounting efficacy and final grades contradicts the self-determination theory (Deci & Ryan, 1985), which proposes that intrinsic motivation, closely related to self-efficacy, can lead to improved learning outcomes. Schunk (1991) also highlighted the importance of self-efficacy in boosting academic motivation and performance.

In their synthesis, Pajares and Miller (1994) utilized more than 800 meta-analyses that demonstrated that self-reported grades (a form of self-efficacy) had one of the most significant effects on student achievement. However, the present study's findings did not support this, indicating that there may be nuances in the relationship between students' self-efficacy and academic performance in the field of accounting.

Further emphasizing the importance of self-efficacy in academic contexts, Pajares and Miller (1994) suggested that students' beliefs about their abilities can affect their academic responsibilities, effort, and persistence. In the current study, the absence of a relationship between students' accounting efficacy and final grades suggested that unverified variables may have been complicating this relationship.

In addition, according to Eccles et al.'s (1983) expectancy-value theory, students' achievement and choice behaviors can be influenced by their expectations of success and the value they place on tasks. The current study showed that students may have had

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accounting skills, but perhaps their perception of the task's significance or their expectations were not aligned, resulting in the observed outcomes.

Despite offering valuable insights, the findings related to Hypothesis 5a diverge from established theories such as the instructional behavior model and self-determination theory, among others. This disparity demonstrates the multidimensional nature of academic outcomes in specialized fields such as accounting (Wigfield & Eccles, 2000). The study serves as a reminder of the complexities inherent in educational research and the importance of contextualizing findings within the broader realm of educational theory (Ambrose et al., 2010). Future research should further explore this intricate relationship, particularly within the context of the instructional behavior model, in order to promote learning environments that are rich and responsive to the diverse needs of students.

HYPOTHESIS 5b

Within the context of educational psychology, Bandura's (1986) instructional behavior model highlights the influence of structured learning environments on students' perceptions and outcomes. This model is consistent with the current study's findings, which indicate a significant positive relationship between students' accounting efficacy and applicability of learned material. The findings suggest that accounting students with a higher sense of self-efficacy are better able to implement their acquired knowledge in practical settings. This is consistent with Wood and Bandura's (1989) social cognitive theory, which proposes that individuals with greater self-efficacy are more likely to engage in tasks, persist in the face of obstacles, and achieve superior outcomes.

The present study's findings also align with Zimmerman's (2000) theory of self-regulation. According to Zimmerman, confident students are more proactive in their

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learning, resulting in a greater application of their acquired knowledge. This sentiment is also shared by Schunk (1991) and Pajares (1992).

In addition, the finding of the current study of the positive relationship between accounting efficacy and students' applicability of learned material is consistent with the larger body of research on self-efficacy and academic performance. Studies conducted by Multon et al. (1991), for instance, demonstrated that self-efficacy beliefs are significant predictors of academic performance across multiple domains. This suggests that fostering self-efficacy can have significant effects on academic achievement.

However, in the present study, the finding of moderate R^2 values suggests that while students' accounting efficacy is a significant factor in their applicability of learned material, other unexplored factors may also play a role. This is consistent with Vygotsky's (1978) sociocultural theory, which emphasizes the importance of contextual and environmental factors in the learning process. In addition, the expectancy-value theory of achievement motivation proposed by Wigfield and Eccles (2000) suggests that students' beliefs about their abilities and the value they assign to tasks can influence their performance outcomes.

In conclusion, the findings of the current study make a significant contribution to the existing body of knowledge by underscoring the central role of students' self-efficacy in their learning process. To further comprehend the dynamics of accounting education and its practical applications (Deci & Ryan, 1985; Pintrich & De Groot, 1990), a comprehensive approach that considers both intrinsic factors, such as students' self-efficacy, and external contextual factors would be necessary (Deci & Ryan, 1985; Pintrich & De Groot, 1990).

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The findings of the present study related to Hypotheses 5a and 5b provide a nuanced comprehension of the role of students' self-efficacy in accounting education when viewed through the lens of the instructional behavior model. Despite the model's emphasis on the significance of self-efficacy in influencing academic outcomes (Bandura, 1986; Zimmerman, 2000), the current study found no relationship between students' accounting efficacy and final grades. Contrary to well-established theories such as the self-determination theory (Deci & Ryan, 1985) and the findings of Schunk (1991), which both emphasize the central role of self-efficacy in academic performance, the finding of the current study also contradicts the self-determination theory (Deci & Ryan, 1985) and the findings of Schunk (1991). In contrast, the results of the present study related to Hypothesis 5b align more closely with the instructional behavior model, indicating a significant positive relationship between students' accounting competence and applicability of learned material. In accordance with Bandura's (1977) social cognitive theory and Zimmerman's (2000) self-regulation theory, this finding indicates that students with higher accounting self-efficacy are better able to practically apply their knowledge. In keeping with Vygotsky's (1978) emphasis on contextual factors and Wigfield and Eccles's (2000) expectancy-value theory, in the present study, the finding of moderate R^2 values indicates the possibility of the influence of other untested factors. While the findings related to both Hypothesis 5a and 5b contribute to the larger body of knowledge, they also emphasize the complexities and potential nuances inherent in the relationship between students' self-efficacy and academic outcomes in specialized disciplines like accounting (Wigfield & Eccles, 2000).

HYPOTHESIS 6a

The results of the current study related to Hypothesis 6a provide a novel perspective on the interplay between students' motivation, accounting efficacy, and final grades within the framework of the instructional behavior model. This paradigm, founded on the seminal works of Bandura (1986) and Zimmerman (2000), emphasizes the centrality of self-efficacy in determining academic outcomes. However, the current study's findings, which found no significant relationship between students' motivation and final grades, deviate from this model's fundamental principles. Such findings are in striking contrast to previous studies, such as those conducted by Pintrich and De Groot (1990) and Schunk and Zimmerman (1997), which have consistently demonstrated a strong relationship between students' motivation, self-efficacy, and academic performance. Moreover, the findings of the present study contradict the self-determination theory (Deci & Ryan, 1985), which emphasizes the role of intrinsic motivation in enhancing learning outcomes. Despite the present study's findings being insignificance in this context, they do emphasize the potential for students' accounting efficacy to take on a mediating role, suggesting that the dynamics of self-efficacy in specialized disciplines such as accounting may differ from those in general academic settings. In conclusion, while the present study provides critical insights into the complex dynamics of students' motivation and academic outcomes in accounting, it also necessitates a reevaluation of established educational theories and a deeper investigation into the factors influencing academic performance.

HYPOTHESIS 6b

When analyzed using the instructional behavior model, the findings related to Hypothesis 6b provide a comprehensive examination of the connection between students'

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motivation, accounting efficacy, and applicability of learned material. Based on the

seminal works of Bandura (1986) and Zimmerman (2000), this model highlights the

significance of academic self-efficacy. Nonetheless, the present study's findings, which

failed to identify students' accounting efficacy` as a significant mediator, contradict this

model's fundamental assumptions. When the findings of the current study are contrasted

to the results of previous research, such as the studies by Schunk (1991) and Pajares and

Miller (1994) that have consistently emphasized the role of self-efficacy and motivation

in academic performance and the application of knowledge, this discrepancy becomes

even more apparent. In addition, the results of the present study appear to contradict the

self-determination theory (Deci & Ryan, 1985) that states that intrinsic motivation can

improve the effective application of acquired knowledge. Despite its insignificance in this

context, the current study emphasizes the potential mediating role of students' accounting

efficacy, which suggests that the dynamics of self-efficacy in specialized disciplines such

as accounting may differ from those in general academic settings. In conclusion, the

current study's findings related to Hypothesis 6b, while shedding light on the intricate

relationship between students' motivation, accounting efficacy, and knowledge

application, also challenges established educational theories, necessitating other more in-

depth investigations into the factors influencing academic outcomes in specialized

domains.

HYPOTHESIS 7a

When viewed through the lens of the instructional behavior model, the present

study's investigation into the relationship of course structure, students' accounting

efficacy, and their final grades provided a novel perspective on the dynamics of academic

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outcomes. Based on the seminal works of Bandura (1986) and Zimmerman (2000), the instructional behavior model emphasizes the central role of self-efficacy in shaping academic perceptions and outcomes. According to this model, structured learning environments can substantially affect students' self-efficacy beliefs, which can then influence their academic performance.

In the current study, the findings that course structure did not directly predict students' final grades but had a significant relationship with their accounting efficacy is consistent with Bandura's (1986) claim that structured environments can enhance self-efficacy. This is further supported by the work of Zimmerman (2000), who hypothesized that structured learning environments can improve students' self-regulatory behaviors, leading to better academic outcomes. However, contrary to some of the previous literature, in the current study, there was no relationship between course structure and students' final grades. For example, Pintrich and De Groot (1990) highlighted the significance of structured learning environments to nurture students' motivation and academic success.

In addition, the self-determination theory (Deci & Ryan, 1985) is consistent with the present study's discovery of a significant indirect effect between course structure and students' final grades via their accounting efficacy. Deci and Ryan's theory asserts that structured environments can increase intrinsic motivation, resulting in enhanced learning outcomes. The significant relationship between course structure and students' accounting efficacy found in the present study suggests that course structure may foster intrinsic motivation by boosting students' accounting self-efficacy beliefs.

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Nonetheless, the present study's findings also challenge some widely held beliefs. For example, Schunk and Zimmerman (1997) emphasized the direct impact of structured learning environments on academic outcomes, in contrast with the current study's finding of the nonsignificant relationship between course structure and students' final grades. This divergence suggests that while course structure can influence students' self-efficacy beliefs, its direct impact on final grades may be mediated by other variables, such as accounting efficacy, in specialized disciplines such as accounting.

In essence, the findings of the present study challenge some of the fundamental tenets of established educational theories, such as the instructional behavior model and self-determination theory, while providing invaluable insights into the complex dynamics of course structure, students' accounting efficacy, and their final grades. The findings highlight the multifaceted nature of academic outcomes in specialized disciplines such as accounting and considering this, educators and researchers are urged to investigate this complex relationship in greater depth. The present study serves as a clarion cry for a more comprehensive examination of the myriad factors influencing academic performance, particularly within the intricate fabric of the instructional behavior model.

HYPOTHESIS 7b

The current study's findings provide a nuanced comprehension of the relationship between course structure, students' accounting efficacy, and their applicability of learned material within the context of the instructional behavior model. Based on the seminal works of Bandura (1986) and Zimmerman (2000), the instructional behavior model highlights the central role of self-efficacy in molding students' academic perceptions and outcomes. According to this model, structured learning environments can considerably

enhance students' self-efficacy beliefs, which can influence their capacity to effectively apply their acquired knowledge.

The findings of the current study that course structure significantly predicts students' applicability of the taught material is consistent with prior literature. For example, Pintrich and De Groot (1990) highlighted the significance of structured learning environments in nurturing students' motivation and academic achievement. Further, Zimmerman (2000) argued that such environments can improve students' self-regulatory behaviors, resulting in their enhanced application of acquired knowledge.

In addition, in the current study, the identification of students' accounting competence as a mediator between course structure and their applicability of learned material was consistent with Bandura's (1986) social cognitive theory. This theory posits that individuals with greater self-efficacy are more likely to engage in tasks, persist in the face of obstacles, and accomplish superior results. In the present study, the significant mediating role of students' accounting efficacy suggested that their confidence in their accounting abilities plays a crucial role in their ability to effectively implement their knowledge.

In essence, while the results of the study provide invaluable insights into the intricate dynamics of course structure, students' accounting efficacy, and their applicability of learned material, it aligns with and challenges some fundamental principles of established educational theories, such as the instructional behavior model. The results of the present study demonstrate the complexity of academic outcomes in specialized disciplines such as accounting. The findings also serve as a reminder of the

complexities inherent to educational research and the significance of contextualizing findings within the larger context of educational theory.

HYPOTHESIS 8a

The current study's findings about the relationship between classroom justice, students' accounting efficacy, and their final grades provide a nuanced understanding of the dynamics at play within the context of the instructional behavior model. Based on the research findings of Bandura (1986) and Zimmerman (2000), the instructional behavior model highlights the significance of self-efficacy in determining academic outcomes. According to this paradigm, structured and classroom justice environments can increase students' self-efficacy beliefs, which can influence their academic performance.

Intriguingly, the current study found that classroom justice significantly predicts students' accounting efficacy but did not explicitly predict their final grades. This finding is consistent with the results of earlier research conducted by Chory (2007), who highlighted the role of classroom justice in fostering positive student learning outcomes, such as students' increased motivation and self-efficacy. In contrast to the instructional behavior model's foundational principles, in the current study, the dearth of a direct relationship between classroom justice and students' final grades in the findings suggests that other factors may have been at play.

The current study's findings of a significant indirect effect of classroom justice on students' final grades via their accounting efficacy highlight the significance of academic self-efficacy. This is consistent with the findings of Schunk (1991) and Pajares and Miller (1994), who repeatedly demonstrated that students' motivation and self-efficacy are strong predictors of their academic performance. The findings of the present study

suggest that while classroom justice may not directly impact students' final grades, it can indirectly do so by increasing students' accounting self-efficacy.

Regarding the interplay between students' final grades, classroom justice, and accounting efficacy, the findings of the current investigation offer significant and worthwhile insights. Certain established educational theories, including the instructional behavior model, are both supported and challenged by the results of this study. Furthermore, they encourage educators and researchers to conduct additional research on this intricate correlation, as the results underscore the multifaceted nature of academic outcomes.

HYPOTHESIS 8b

The findings of the current study related to Hypothesis 8b provide a deeper comprehension of the relationship between classroom justice, students' accounting efficacy, and their applicability of learned material when viewed through the lens of the instructional behavior model. Based on the seminal works of Bandura (1986) and Zimmerman (2000), the instructional behavior model emphasizes the central role of self-efficacy in influencing students' academic perceptions and learning outcomes. According to this model, structured environments and classroom justice can considerably enhance students' self-efficacy beliefs, which can influence their capacity to effectively apply their acquired knowledge.

The findings of the present study that classroom justice significantly predicts students' accounting efficacy is consistent with previous literature. Tschannen-Moran, et al. (1998), for instance, emphasized the significance of structured and equitable learning environments in fostering students' self-efficacy. Furthermore, Zimmerman (2000)

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asserted that such environments can improve students' self-regulatory behaviors, resulting in an enhanced application of their acquired knowledge.

In addition, in the current study, the identification of students' accounting efficacy as a mediator between classroom justice and their applicability of learned material is consistent with Bandura's (1986) social cognitive theory. This theory posits that individuals with greater self-efficacy are more likely to engage in tasks, persist despite obstacles, and accomplish superior results. The significant mediating role of students' accounting efficacy in the present study suggests that their confidence in their accounting abilities plays a crucial role in their ability to implement their knowledge effectively.

Concerning the intricate dynamics of classroom justice, students' accounting efficacy, and the applicability of learned material, the results of the present study pertaining to Hypothesis 8b offer invaluable insights. Certain established educational theories, including the instructional behavior model, are both supported and challenged by the results of this study. Furthermore, they encourage educators and researchers to delve more deeply into this correlation, as the results underscore the multifaceted character of academic achievements in specialized fields like accounting.

LIMITATIONS

This section categorizes the limitations of the study into two distinct categories: data concerns and unexplored research dimensions. These constraints have implications for the interpretation and generalizability of the study results.

DATA CONCERNS

Distribution and Sample Size. The study's sample size, consisting of $N = 195$ participants, is a potential limitation of the study. This reduced sample size may have

influenced the data distribution, contributing to a departure from a normal distribution. A larger sample size of approximately 300 to 400 participants may have provided a more representative and normally distributed data set, thereby enhancing the statistical validity of the results (Charter, 1999).

Timing and Rate of Information Collection. The collection of data took place at the conclusion of the semester, just before the summer holiday. This timing may have resulted in a lower response rate, as students may have been less inclined to respond to survey requests due to upcoming vacation plans or diminished access to academic resources. McGonagle (2020) found that participation incentives in the form of additional credit points may increase response rates.

Data Imperfection. The positively skewed distribution of key variables, such as students' major (72.2% Accounting; 27.8% Business), gender (54.4% Male; 44.5% Female), final grade (88%), and GPA ("$< = B+$" (92%), may have created a limitation of the generalizability of the results. Addressing this imbalance and attaining a more balanced representation across categories could result in a more nuanced understanding of the investigated relationships (Patel et al., 2019).

UNEXPLORED RESEARCH DIMENSIONS

Motivating Students. The survey's narrow concentration on student motivation within accounting courses as opposed to student motivation in general is a limitation. Incorporating broader motivational factors would have provided a richer context for understanding the dynamics of students' engagement and performance in accounting courses (Ryan & Deci, 2000b).

Academic Integrity. The treatment of classroom justice as a composite construct that combines interpersonal (instructor-student) and informational (assignments and evaluations) dimensions is a limitation of the study. A more granular analysis, distinguishing between instructor-driven justice and the fairness of course materials, could have provided greater insight into the factors that influence students' perceptions of equity in educational contexts (Colquitt et al., 2001).

Mental Orientation. The absence of survey items investigating the participants' general positive or negative attitudes represents a limitation. Ajzen (1991) found that the incorporation of such items could yield valuable insights into the role of attitude in influencing students' behaviors and learning outcomes in accounting education.

Student Employment Status. The omission of a query regarding students' employment status (having a full-time or part-time job) was a limitation of the study and the ability to capture a comprehensive understanding of students' applicability of learned material. Adding this dimension could have shed light on how various employment contexts affect students' engagement with and utilization of course content (DeSimone, 2008).

In conclusion, while the findings of this study provide vital insights into the academic motivation and performance of accounting students, its limitations highlight the need for cautious interpretation of its data and highlights potential avenues for future research. Taking these limitations into account for future research could improve the robustness and applicability of any findings to broader educational contexts.

FUTURE DIRECTIONS

Fostering a culture of continuous improvement among instructors is a top priority in today's dynamic educational environment. As educational institutions endeavor to provide cutting-edge learning opportunities, the importance of effective teaching strategies cannot be overstated. As the practical aspects of refining instructional techniques are examined, the significance of maintaining a growth-oriented mindset that can adapt to the ever-changing educational demands is emphasized.

This section functions as a synthesis of the current study based on analytical research and empirical observations with the primary objective of providing valuable insights for enhancing teaching practices. Two instructional enhancement suggestions will also be presented based on real-world examples. Considering this, I endeavor not only to improve existing teaching practices but also to pave the way for future exploration and progress. By laying the groundwork for prospective research inquiries, my hope is to foster a community of educators committed to fostering knowledge, motivating students, and shaping the future of education.

RECOMMENDATIONS FOR FACULTY

There are two primary approaches identified by the findings of the present study from which accounting instructors could utilize to have a positive influence on their students' accounting efficacy. Accounting efficacy refers to students' confidence in their own accounting skills and their applicability of learned material, also known as deep learning. To address students' accounting efficacy and their applicability of learned material, two approaches are classroom justice, which is synonymous with instructor fairness, and the continuous development of course structure, also known as course design.

Course structure involves the organization and presentation of course material to enhance students' understanding and retention of accounting principles. By meticulously structuring a course, instructors can create an atmosphere that facilitates effective learning and boosts students' confidence in their accounting skills. An example of this approach is an instructor of an accounting course who creates a syllabus that progressively introduces complex accounting principles after establishing a solid foundation of basic concepts. The instructor can then illustrate the material's relevance with case studies, practical examples, and real-world applications. This well-organized approach enables students to comprehend challenging topics and instills confidence in their accounting skills.

Classroom justice refers to the instructor's impartiality and fairness in their interactions with students, evaluation techniques, and distribution of learning opportunities. When instructors uphold impartiality, students perceive their learning environment as supportive and motivating, resulting in their having greater self-assurance and a deeper interest in the subject matter. In an accounting class, the instructor ensures fair treatment of all students by providing timely and constructive feedback on assignments and exams. The instructor maintains a policy of accessibility to students, inviting questions and concerns from students and addressing them with courtesy and consideration. By nurturing a just classroom environment, the instructor fosters a sense of trust and belonging, thereby encouraging students to actively participate in class and accept the challenges of learning accounting skills.

By utilizing an effective course structure and fostering classroom equity, instructors can foster accounting efficacy in their students and foster their application of

learned material. Not only do these improvements boost students' confidence in their accounting skills, but they also equip them to implement their knowledge effectively in the real world.

RECOMMENDATIONS FOR FUTURE RESEARCH

The limitations identified in this study not only highlight the current scope of the study, but also pave the way for future research endeavors that could further enrich a comprehension of the concepts of best practice versus best performance. Several promising avenues for future research have been identified, including increasing the sample size of a future study and refining the data collection procedure. In addition, the investigation of individual variables affords researchers the opportunity to achieve greater clarity in their analyses.

Increasing the sample size to between 300 and 400 participants represents one of the most promising opportunities for future research. This expansion has the potential to alleviate the issue of skewed data distribution, particularly in terms of the distribution of students' majors, gender, and grades. Currently, the data of the present study is positively skewed across multiple dimensions. In particular, 72.2% of participants were accounting majors while 27.8% were business majors. Similarly, there were 54.4% men and 44.1% women in the study. Moreover, a substantial proportion of students self-reported final grades and GPAs of a B+ or higher (88% and 92%, respectively). By increasing the number of participants, a more normalized data set may be obtained, thereby reducing the impact of these distorted distributions and enhancing the validity of subsequent analyses (Smith & Santos, 2020).

In addition to presenting avenues for further research, enhancements to the data collection process open space for the possibility of new research. Conducting surveys at a more opportune time for students, such as late in the first semester or early in the second, may result in a higher participation rate and more detailed responses. Utilizing the Prolific company panel or working directly with professor-to-student surveys are two potential data acquisition methods that require strategic consideration. Thompson (2012) suggests that selecting one method over the other may result in a more standardized data set and more accurate results.

Since this study was focused on students of accounting courses, examining student motivation beyond the specific domain of accounting is an intriguing area for future research. The relationship between students' motivation, final grades, and GPAs could be better understood through a broader examination of students' motivation in general. This strategy would entail comparing students' general motivation levels with accounting performance indicators to identify potential connections and relationships (Bengtsson & Teleman, 2019).

Untangling the concept of classroom justice is another potential area for future research. While this study examined both interpersonal and informational justice, future surveys may seek to separately examine instructor-driven justice and the impartiality of course materials. This differentiation could provide nuanced insights into strategies for optimizing student performance through individualized approaches to justice and fairness (Cropanzano & Greenberg, 1997).

An investigation into the effect of individual students' overall optimism or pessimism toward their accounting efficacy and self-efficacy could cast new light on

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these constructs by delving into the realm of their mental attitudes. Bandura (1977) has suggested that students with a more optimistic outlook may demonstrate greater accounting domain efficacy and proposed that examining this relationship could provide greater insight into motivational dynamics.

Lastly, a concentration on the distinction between full-time and part-time students who are concurrently employed represents an intriguing area of study. Kolb (1984), Dewey (1938) and DeLotell et al. (2010) suggest that examining how students' applicability of learned material relates to their real-world experiences of working could provide a novel perspective on the relevance and practicality of educational content.

Incorporating these suggested strategies for future research studies would unquestionably contribute to a deeper understanding of the dynamics at play in the context of student motivation, classroom justice, course structure, accounting efficacy, and academic performance. Future research endeavors hold the potential to refine existing knowledge and reveal new insights into the intricate interplay of these numerous variables by addressing the limitations identified in this study.

CONTRIBUTIONS AND IMPLICATIONS

The primary objective of Study 2 was to investigate the complex factors underlying the variation in student performance, with a focus on the discrepancy between the best practices for instruction implemented in asynchronous online accounting courses and the outcomes discovered in Study 1. In pursuit of this overarching objective, the purpose of Study 2 was to identify supplementary techniques and innovative pedagogical approaches that could be seamlessly integrated into teaching methodologies with the objective of enhancing student performance and, consequently, their final grades.

Both Study 1 and 2 made significant contributions to the existing body of knowledge education for accounting courses by providing educators with empirically supported recommendations. These recommendations empower instructors to remain at the forefront of instructional pedagogy. By bridging the distance between theory and practice, this study provides educators with easily implementable practical insights.

The ramifications of these studies extend far beyond the academic realm. Educators now have access to a valuable resource for evaluating their teaching styles and curricula, allowing them to positively influence their students. The implications are not limited to immediate instructional settings either but extend to the larger educational landscape, promoting a culture of continuous development and adaptability in the field of online accounting education. Therefore, the potential impact of these findings is substantial, as it facilitates the improvement of educational outcomes and fosters a more dynamic and responsive teaching environment.

CONCLUSION

The field of accounting education has undergone significant changes over the years, with pedagogical strategies and methods of student engagement constantly evolving. These two studies aimed to shed light on the complex relationship between course delivery methods and student performance by conducting a comprehensive investigation of best practices in accounting education.

The central query of the studies 1 and 2 was: How do specific course delivery methods in accounting education influence student performance, and what role does accounting efficacy play in this dynamic? To determine the effect of the best teaching practices for student performance in online accounting courses, Study 1 was conducted

over two semesters with multiple online sections of accounting courses. Surprisingly, the results disproved the initial hypothesis, prompting further investigation into factors of student success. This resulted in the development of Study 2, which focused on the investigation of various student and instructor-related factors that can affect student performance, such as students' motivation and accounting efficacy, course structure, and classroom justice.

The second study demonstrated the significance of accounting efficacy for students, which can be positively influenced by improved course structure and classroom equity. Instructors focusing on continuous refinement of course design and equitable practices can improve students' comprehension and lead them to deep learning. Education is a collaborative endeavor, and optimal student performance is achievable when both students and instructors strive for excellence.

The findings of both studies emphasize the significance of course delivery methods. Significant predictors of student learning outcomes included the number of lecture videos and the frequency of student assessments used in accounting courses. Students' performance was found to be significantly influenced by course structure and their accounting proficiency. Although the direct relationship between these variables and students' final grades was complicated, the mediating role of students' accounting efficacy stood out, highlighting its centrality in accounting education.

Even though some best practices were advantageous for students, their combined implementation did not always relate to improved student performance. This highlights the complexity of accounting education, suggesting that while foundational best practices

are important, individual classroom dynamics and student-specific factors are equally influential.

The difficulties inherent to accounting education are evident in the findings of the studies, such as potential disconnects between educators and students and the complexity of the subject matter. Nonetheless, the potential for structured and efficacy-centered education supported by effective teaching techniques shone through the study's results.

In conclusion, the findings of this research make an important contribution to the discourse on accounting education. They provide crucial insights for educators, academic institutions, and policymakers by exploring teaching methodologies, student engagement, and the role of students' accounting effectiveness. As the ever-changing landscape of education is being navigated, the result of this research illuminates the path toward more effective and influential methods for teaching accounting and achieving student success.

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APPENDIX 1

THANK YOU FOR PARTICIPATING IN THIS SURVEY. We are conducting a research study to identify various reasons why students succeed in online accounting courses. To qualify for this survey, you must have completed an online accounting course in the past 12 months, at any level. This survey should take about 15 minutes.

HOW WE USE THIS INFORMATION. Your confidentiality is important to us. The researcher has provided the survey link to professors, who in turn, have provided it to you. You are not obligated to complete the survey and the professors will not know who completed the survey or not. If you complete the survey and click <Submit> the survey will be forwarded to the researcher and not the professor. Feel free to ignore the link if you choose. All data is stored in a password protected electronic format. To ensure confidentiality, the survey will not contain information that will personally identify you.

AS YOU COMPLETE THE SURVEY, please consider the accounting course discussed above and whether that was a positive or negative experience.

What is your age?	

What is your gender Identity?	A. Man
	B. Woman
	C. Nonbinary
	D. Other:

What's your race/ethnicity?	A. White or Caucasian
	B. Asian
Race refers to the concept of dividing people into groups on the basis of various sets of physical characteristics and the process of ascribing social meaning to those groups. Ethnicity describes the culture of people in a given geographic region, including their language, heritage, religion and customs.	C. Black or African American
	D. Hispanic, Latino, or Spanish Origin
	E. Middle Eastern or North African
	F. Native Hawaiian or other Pacific Islander
	G. Multiracial (Select all the above that apply)
	H. Other:
	I. Prefer not to answer

What is your Grade level?	A. Freshman
	B. Sophomore
	C. Junior
	D. Senior

What was your Final Grade in the online class discussed above?	A. A +	D. B +	G. C +	J. D +	M. F
	B. A	E. B	H. C	K. D	
	C. A-	F. B -	I. C -	L. D -	

What is your current cumulative GPA?	A. 3.5 to 4.0
	B. 3.0 to 3.49
	C. 2.5 to 2.99
	D. 2.0 to 2.49
	E. 1.99 or below

Was the accounting course you will consider when completing this survey a positive or negative experience?	Positive
	Negative

Please answer the following questions based upon your experience with the online accounting class in the past 12 months.

Participants rate the following statements with 1 = *strongly disagree* to 7 = *strongly agree*

1. **Applicability of Learned Material: Adapted from Flierl et al (2021)**

1. I understand how my previous experiences of using accounting information support my learning the subject content of this course.	1	2	3	4	5	6	7
2. I believe it is important for me to carefully evaluate the information I use in this course.	1	2	3	4	5	6	7
3. I think that learning subject content and using information are the same thing.	1	2	3	4	5	6	7
4. I feel confident in my ability to synthesize information from different sources.	1	2	3	4	5	6	7
5. I will be able to use accounting information in my future course work.	1	2	3	4	5	6	7
6. My instructor encouraged me to use information for specific purposes.	1	2	3	4	5	6	7
7. When I consider my life after college, I feel confident in my ability to learn when engaging with information courses.	1	2	3	4	5	6	7
8. I feel confident in my ability to use the accounting information I learned in this course.	1	2	3	4	5	6	7

Participants rate the following statements with 1 = *strongly disagree* to 7 = *strongly agree*

2. Motivation: Adapted based on Mayayo et al. (2017)

9. As a student, my aspiration is to complete university studies.	1	2	3	4	5	6	7

10. I don't expect to continue studying when I leave school.	1	2	3	4	5	6	7
11. I feel motivated to continue studying accounting in the future.	1	2	3	4	5	6	7
12. Learning on its own is a good motivation for carrying on studying.	1	2	3	4	5	6	7
13. I carry on studying because I have to.	1	2	3	4	5	6	7
14. I can't find important reasons to continue studying.	1	2	3	4	5	6	7
15. In my situation, continuing accounting studies seems like a waste of time.	1	2	3	4	5	6	7

Participants rate the following statements with 1 = *strongly disagree* to 7 = *strongly agree*

3. Course Structure: Adapted based on Mayayo et al. (2017) and M. A. A. Bakar et al. (2019)

16. The coverage/content of the online accounting course was about right for a semester course.	1	2	3	4	5	6	7
17. The classes gave me useful preparation for what I want to do in life.	1	2	3	4	5	6	7
18. The topics of the online accounting course were appropriate.	1	2	3	4	5	6	7
19. The assignment load in the online accounting course was appropriate.	1	2	3	4	5	6	7

Participants rate the following statements with 1 = *strongly disagree* to 7 = *strongly agree*

4. Accounting efficacy: Adapted based on Eveleth et al. (2020)

20. Prior to online accounting course, I knew enough to successfully apply accounting concepts.	1	2	3	4	5	6	7
21. Prior to online accounting course, accounting concepts came easy to me.	1	2	3	4	5	6	7
22. After the online accounting course, I have what it takes to use basic accounting principles.	1	2	3	4	5	6	7
23. After the accounting course, I feel certain about my ability to use basic accounting principles.	1	2	3	4	5	6	7
24. After the accounting course, I would recommend accounting to a friend looking for a job.	1	2	3	4	5	6	7
25. My feeling about accounting has changed for the better since taking this class.	1	2	3	4	5	6	7
26. This course significantly increased my confidence in my accounting skills.	1	2	3	4	5	6	7
27. After this course, I am much more capable of applying accounting concepts.	1	2	3	4	5	6	7

Participants rate the following statements with 1 = *strongly disagree* **to 7 =** *strongly agree*

5. Classroom justice: Adapted based on Chory-Assad and Paulsel (2004) and Mayayo et al. (2017)

28. The grading scale for the course.	1	2	3	4	5	6	7
29. The way the instructor conducted class.	1	2	3	4	5	6	7
30. The instructor's expectations of students.	1	2	3	4	5	6	7
31. The amount of work required to get a good grade in the course.	1	2	3	4	5	6	7
32. The number of questions on exams.	1	2	3	4	5	6	7
33. The level of difficulty of the course content.	1	2	3	4	5	6	7
34. The scheduling of homework and other written assignments.	1	2	3	4	5	6	7

Participants rate the following statements with *AGREE* **or** *DISAGREE*

6. Assessments and Video Viewing

35. In my online accounting course, we had a mid-term and final exam ONLY, which I preferred to multiple quizzes throughout the semester.	Agree	Disagree
36. In my online accounting course, the video lectures were TOO LONG to hold my attention.	Agree	Disagree