

# COMMUNICATING THE LANGUAGE OF BUSINESS TO NON-BUSINESS LEARNERS

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## Abstract

Antonette L McCaster

### COMMUNICATING THE LANGUAGE OF BUSINESS TO NON-BUSINESS LEARNERS

This study is situated in a course taught by the author who takes the position that non-business majors approach their learning differently from business majors. Many non-business majors carry concerns regarding not having prior accounting coursework, negative experiences or lack confidence in the domain of mathematics. Through personal reflection, student feedback, reading current literature and empirical findings, I have made additional adjustments to the course design, instructional strategies employed and/or weighting and type of assessments to achieve the stated outcomes of the course. The main research question for this study is as follows: *How does using surface and deep instructional strategies relate to student scores when examined by a prior knowledge group (business vs. non-business)?* This study utilizes the mixed methods approach with data gathered from the statement of student goals from the first week of the course, student assessment scores, a linear regression model in STATA and the course/instructor's evaluations at the conclusion of the course. Analysis of the responses in my course indicate that students' goals were primarily cognition (understanding). The results also indicate that business majors continue to perform better in a statistically significant way on polling response accuracy. Although not statistically significant, non-business majors had higher average mean scores for in-class activities. As was found in prior studies, the grade point average (GPA) had a significant effect on student performance in the course overall. As a result of this study, changes to lecture delivery and student reminders of activities have been incorporated into the course.

*Keywords:* Cognitive psychology in instruction, constructivism (Vygotsky), instructional design, Bloom's taxonomy, instructional strategies, accounting education, student learning goals, learning outcomes, surface learning approach and deep learning approach

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## **Chapter 1: Introduction to the Study**

### **1. Assumptions**

The three assumptions underlining this study include the following: First, the supposition that there are several instructional strategies and theories that apply existing behavioral/cognitive theories, second, that the usage of instructional techniques geared towards deep and surface learning approaches influence student performance and finally, I surmise that surface learning is foundational to deep learning.

### **2. Background**

As a black, female instructor at a predominately white school, I find that my approach to instruction is quite nuanced. Not only have I received negative feedback while going through my academic and professional career regarding my abilities in the math domain, I've also received encouragement and support to challenge those same systems of belief. Consequently, I've spent both my professional career prior to academia as well as the past nine years as a full-time faculty member at Indiana University, working diligently to remove barriers and provide support for learners. Although my very presence in the classroom is an inspiration for some, for others it is awkward and uncomfortable. In order to make myself more personable, I began to tell stories that stressed qualities of understanding, patience, consistency and perseverance through difficulty. Throughout this study, I consciously searched for opportunities to glean a variety of perspectives and celebrated the lived experiences of learners. My desire for inclusion, led to my decision to provide numerous opportunities for learners to bring their prior experience into the classroom. In those situations where the changes are not well received, I take a couple of positions. 1) When possible, I stress to learners that any instructional strategy is one of many that are offered and that I welcome feedback on what aspect of the strategy they found most

challenging and how they would improve it. 2) I recognize that modifications can always be made to an instructional strategy even if it seems unreasonable at first.

My instructional goal as a teacher is to focus my efforts on undergraduate students in a traditional classroom. I teach lecture-based courses, ranging from 65–115 enrolled students and try to understand my subject group well enough to design instructional materials that will resonate with a variety of learning styles. To date, I have incorporated various instructional strategies that mirror results of past research on introductory accounting courses. These strategies utilize active learning, scaffolding and vocabulary building. I have created online texts, advanced organizers, workbooks and internet accessible videos that complement in-class activities.

Non-business students need both deep and surface approaches to build skill sets in accounting. Kheng, Rony and Na (2015), Chickering and Gamson (1987) and Cooper and Robinson (2000) showed that repetition is used for surface learning i.e., memorization of terms and/or categorizing information. Phillips and Graeff (2014) and Reigeluth and Moore (2009) also completed research positing that deep learning occurs through authentic activities and reflection i.e., analyzing financial statements, simulations, applying generally accepted accounting principles, etc.

Warren and Young (2012) discussed how the first accounting course is critical in preparing both business and non-business majors. Gibbs and Simpson (2005) stated that teachers who use a wide range of assessment practices could be looking at potential problems with the courses and should be making changes to assessments to address them. Subsequently, they should evaluate whether the changes have positive impacts on the students' methods of learning. They also posited that students' perceptions of assessments influence their learning. This study

looks at correlations between deep learning activities, surface learning activities, student performance and student perceptions in my course.

### **3. Context**

Indiana University School of Public and Environmental Affairs (SPEA) was ranked number one in its Public Affairs Nonprofit Management and Public Finance and Budgeting majors in the 2020 US News and World report. SPEA has 2536 undergraduate students, with 1355 students having declared majors that require them to complete V246—Introduction to Governmental and Non-Profit Accounting and Financial Reporting (hereafter referred to as V246). This means that 53% of the undergraduate student body at SPEA is required to complete this introductory course as a condition for receiving a degree within their field. These figures demonstrate the breadth of impact of this study on the student population at SPEA.

Hired in August 2011 to teach multiple sections of V246, I determined in a preliminary study (McCaster, 2016) that the majority of students in the course were non-business majors. This resulted in many students having no prior experience or limited experience with accounting terms and business principles. Furthermore, I found that many students voiced concerns such as an inability to “get math,” poor prior performance in the course or the possibility of not understanding the material covered. These findings prompted my research into materials that could provide my students with opportunities to build confidence in their ability to understand accounting.

In December 2015, I completed a literature review to analyze the best practices and methodologies in the field of teaching introductory accounting. This review looked at methods of instruction for non-accounting majors. I concluded that more research was needed to explore the effectiveness of the combinations of instructional strategies and whether the online textbook,



homework aids, course management systems (e.g., Blackboard™), websites, software and hardware (e.g., clickers) could lead to complexities that distract from or enhance student learning (McCaster, 2015). Additionally, I completed an unpublished qualitative study to answer the following three questions:

- What methods of instruction do undergraduate students perceive most conducive for successful acquisition of accounting concepts?
- How do undergraduate students use the resources made available to them?
- What factors influence the students' self-efficacies in the accounting domain?

For this study, the information gleaned from the prior literature review and unpublished qualitative study were incorporated with research question 4, which looks at student perceptions of instructional strategies for their learning.

Following this review of the literature, I conducted a study to inform my use of instructional strategies as it relates to my introductory accounting courses. I wanted answers as to methods that would improve student motivation, engagement and performance. Springer (1997) reported a large meta-analysis of studies examining small group learning in science, technology, engineering and math (STEM) courses. In this study, compared to traditional lecture-based instruction, various forms of small group activities resulted in higher degrees of learner persistence, higher test scores and more student confidence. The Springer (1997) study provided me with a potential method (small group learning) to employ in my own courses. Due to the large enrollment of my courses, I implemented a limited number of sessions utilizing small groups and reviewed the results in the McCaster (2016) review. Its findings stated that the students overwhelmingly regarded practice and repetition as critical for them to grasp the course instructional objectives. They also greatly valued educational software as a tool for providing

unlimited practice and repetition, outside the classroom. It became evident that building students' accounting vocabulary and providing additional opportunities for reading comprehension are the important next steps. Given the pervasive nature of word problems in accounting, problem solving techniques and methods of instruction that can be scaffolded for reading comprehension are critical for learners.

According to Dull, Schleifer and McMillian (2015), "Future research on the nature of, and how to achieve optimal (or adaptive) balances of deep and surface learning, or adaptive combinations of mastery and performance goal orientations, would be a worthwhile contribution" (p. 169). Major concepts used in this study will include instructional systems design and instructional strategies. I will then discuss how those instructional strategies align with student learning goals and the course learning outcomes. Finally, I will look at the way in which Bloom's taxonomy, along with deep and surface learning approaches, impact student learning and assessment results in my courses.

#### **4. Research Purpose Statement**

The purpose of this study is to improve my teaching, determine the impact of a variety of instructional techniques and reflect upon how my changes have impacted the students' learning in the classroom, with emphasis on non-major learners. Sophocles (415BC) asserted, "One must learn by doing the thing; for though you think you know it, you will have no certainty until you try" (as cited in Revans, 2017). I will begin with a discussion on instructional design as it provides the lens through which I view the whole course. This discussion will include the instructional models that resonate best with the vision I have for the course and the results of applying the chosen model. Subsequently, I will discuss how I designed each model to support the structure of the course, the instructional strategies employed and the intended outcomes for

the learners. Finally, I will discuss how deep and surface learning approaches used by the students and strategies by the instructor relate to the learning outcomes and student learning goals.

The assumption for this review is that there are several instructional strategies and theories that apply existing behavioral/cognitive theories. Adult education is based upon psychological foundations (Lanyon & Schwartz, 1966). The psychological foundations outlined under Major Concepts Explained of the Literature Review, provide the framework for a variety of instructional design models. As an instructor, we want evidence that the instruction we provide is helping achieve the results we expect. Many times, there are residual effects of instruction or missteps in implementing it that we fail to recognize. Through personal reflection, use of student feedbacks, reading current literature and empirical findings, I intend to bring new information to the forefront. There are many methods of teaching, but the instructional strategies we choose must reflect the audience to which they are applied. In evaluating the audience by applying instructional strategies, I have found strategies such as scaffolding of instruction and providing a student-centered environment help improve the skills learners utilize to remain focused on difficult and new tasks. Bruning, Schraw and Norby (1990) suggested that the best method for avoiding learner burnout is the presentation of new information in the context of knowledge already available to the learner. Matching instruction to special capabilities and the needs of adult learners is the most salient issue in avoiding learner fatigue in adult education (Ackerman, 1998).

The following research questions guide this evaluation of instructional strategies in my course with the goal of improving it.

## 5. Research Questions

1. How aligned are the instructional strategies used in V246 with the stated learning outcomes?
2. How aligned are student learning goals with the stated learning outcomes?
3. How does using surface and deep strategies in the course relate to student scores when examined by prior knowledge groups (business vs. non-business)?
  - a. RQ: Is there a statistically significant difference in assessment type scores (exams, take home exams/homework, Top Hat text Q&A, responses utilizing polling technology, Canvas quizzes and in-class activities) in terms of majoring students (business vs. non-business) and year (sophomore, junior, senior)?
    - i. H1: There is no statistically significant difference on assessment type scores with regards to student major and year.
4. How do students perceive the contribution of instructional strategies to their learning?

## **Chapter 2: Literature Review**

### **1. Major Concepts Explained**

This literature review analyzed research on teaching introductory accounting, specifically looking at methods of instruction for non-business majors. The scope of the review focused predominately on teaching practices in the United States, and how college instructors are using various methods as a way of engaging students. Sources of information include articles, literature reviews, books in the field of accounting education, cognitive psychology, constructivism, scholarship of teaching and learning and instructional system designs and strategies.

SPEA has 2536 undergraduate students; 1355 students have declared majors that require them to complete V246—Introduction to Governmental & Non-Profit Accounting and Financial Reporting course. This study is based upon my experience as the instructor of V246 with the goal to improve my teaching. The governmental and nonprofit sectors are a growing area of employment but comprise minimal amount of the research publications. Approximately, 22% of paid employees in the United States work for governmental and non-profit organizations (Granof & Khumawala, 2011). After compiling data from the four previously published literature reviews on accounting education, I found that 1.3% of the 1,100 articles published from 2003–2014 addressed the governmental and nonprofit accounting area. According to Wilson (2013), this shortage is due, in part, to the negative view held by some editors regarding governmental accounting but also the shortage of full-time faculty pursuing it as an area of interest. Earl Wilson, a senior governmental accounting educator, began teaching in the 1970s and reflected on how events of that period influenced his personal decision to specialize in governmental accounting education, and how those events led to a path of dramatic improvement in

governmental accounting standards, practice and education. His paper provided key trends in governmental accounting education along with major changes in practice guidance over the years that have challenged textbook authors and faculty into staying abreast of change.

The results of the research conducted by Schiffel and Smith (2006) indicate that only 2.7% of faculty designate governmental accounting as their area of expertise. Consequently, this literature review includes instructional methods geared towards non-business majors in both traditional business accounting introductory courses and nonprofit/governmental ones. This broadened the base of the literature to help determine the best practices for instructional methods in an introductory accounting course that focuses on governmental and nonprofit accounting issues.

Although this review is not exhaustive, it includes 28 articles on accounting and education research, published from 1959 to 2015. It also includes information from four literature reviews on accounting education research, encompassing an additional 1,100 articles published from 2003 to 2014 that relate to six accounting journals. The review also includes 53 other sources from books and articles in the areas of cognitive psychology and instruction, educational research, instructional theory, instructional design, scholarship of teaching and learning and constructivism, published from 1962–2019.

Major concepts in this paper stem from the psychological foundations of instructional design. I will begin by discussing facets of cognitive psychology and how components such as the perception and attention, prior knowledge, data-driven processing, chunking, cognition and problem-solving shape instruction. Following this, I will define constructivism and discuss how it informs instructional models that bring cognitive load and collaboration together. The discussion of instructional design and strategies, specifically looking at Gagne's events of

instruction, will then provide a concrete example of both cognition and constructivism utilized in instruction.

**1.1. Cognitive psychology.** According to the American Psychological Association, cognitive psychology is the study of mental processes such as attention, language use, memory, perception, problem-solving and thinking. In contrast, the behavioral school of thought focuses only on observable behaviors, whereas cognitive psychology studies internal mental states and processes.

Reigeluth (1999) defined cognitive education as “the set of instructional methods that assist students in learning knowledge to be recalled or recognized, as well as developing students’ understandings and intellectual abilities and skills” (p. 52). Bruning, Shraw and Norby (1990) saw the complications many learners experience in comprehending the problem statement. In the accounting domain, word problems are most common. The cognitive processes involved is that learners first need to identify key concepts and values, form a representation or set for the problem, select the correct process for solving the problem, then apply that process to achieve the correct answer. This requires the learner to form accurate mental representations that encode relationships and goals. Therefore, the authors posited that only schema-based instruction helps students become better at word problems. Schemas are defined as conceptual representations. Bruning, Shraw and Norby (1990) found that “schema-based instruction also improved the performance of students of varied skill levels” (p. 320).

**1.1.1. Perception and attention are guided by prior knowledge.** During my literature review of this topic, it was repeatedly stated that both motivation and relevance were prominent factors with non-business students. According to Bruning et al. (1990), a student must be “encouraged to use what they know to help themselves process new information” (p. 34). This is

a critical component in successfully teaching a non-business major accounting. Not only does this facilitate relevance, it also reduces some of the anxiety surrounding unfamiliar concepts by tying them to something with which they are already familiar. In relation to its consequences for practice, I involve a story-telling method and the use of metaphors.

**1.1.2. Data-driven processing.** This may be attributed to “rote memorization,” whereas conceptually driven processing can be embarked upon through activities such as case studies and discussion and involve comprehension processes (Bruning et al., 1990). A probable factor is the degree of knowledge a student has about the domain being learned. In my supposition, I stated that surface learning is foundational for deep learning. A more knowledgeable student will likely utilize their conceptual structures of the domain in processing and attending to new information or tasks, whereas a more novice learner will likely use the information or data available to them as they are learning a task. This familiarity with the domain or task likely influences the allocation and selection of cognitive resources as well. An additional factor to consider is the nature of the task itself, though this is likely to vary due to differences in knowledge. The differences in processing type then are likely to result in an interaction between the learners’ conceptual resources and the task itself as well as other environmental features of the task (Blayney, Kalyuga & Sweller, 2015).

**1.1.3. Chunking.** In order to help learners process new information, the use of categories can assist in working memory in terms of capacity and duration. Bruning et al. (1990) defined chunks as “meaningful units of information” (p. 25). An example of chunking is the following process for teaching students about various account titles. We begin by discussing what an asset is, then we discuss attributes that certain accounts share in common—this helps students categorize several different account titles within the asset category. Chunking can be highly



relevant for teachers and instructional designers, in that forming related information or tasks into meaningful chunks of information enables learners to activate knowledge and engage meaningfully with the task (Bruning et al., 1990). I use in-class activities to begin the process of categorization and chunking for students.

**1.1.4. Cognition and problem-solving.** Colton (1821) said, “imitation is the sincerest form of flattery” (p. 127). Cognitively speaking, mimicking is also the first process most learners can employ. Because I teach an introductory class, I spend a tremendous amount of time using scaffolding to build the learner’s “vocabulary”. This includes recognizing accounting terms and using them correctly. Once mastered, I am able to provide them with “how a CPA would reason” through a problem presented in the text. Although many students lack prior accounting experience, teaching them how to think like an accountant allows the students to put a face—typically, my face—to what they are doing. Because of the issue with cognitive overload, utilizing advanced organizers or “job aids” to facilitate learning is vital. Consequently, I find these tools to be indispensable when working with novice learners, such that they can refer to the information presented earlier. I also find these to be excellent tools for creating automaticity. Bruning et al. (1990) defined automaticity as “performing any cognitive activity...in an automatic fashion” (p. 16).

**1.1.5. Constructivism.** The learning theory of constructivism may be best defined as follows: “...learning is a process of constructing meaning; it is how people make sense of their experience” (Merriam, Caffarella, & Baumgartner, 2007, p. 291). Driscoll (2005) added to this definition, stating, “constructivist theory rests on the assumption that knowledge is constructed by learners as they attempt to make sense of their experiences. Learners, therefore, are not empty vessels waiting to be filled, but rather active organisms seeking meaning” (p. 387).

### *1.1.6. Discussion of cognitive load theory, collaborative learning, and constructivism.*

Sweller, Ayres, & Kalyuga (2011) stated that “devising instruction, according to cognitive load theory, means devising instructional procedures that facilitate the borrowing of information held by instructors and provided to learners in spoken or visual form” (p. 31). According to Sweller, et al. (2011), cognitive load is defined as working memory and they highlighted that, “each form of presentation, each activity required of learners, will impose a working memory or cognitive load” (p. 45). A final important consideration in the cognitive load theory is cognitive overload. Cognitive overload occurs when there is too much information for a novice learner to gather and results in poor learning; essentially working short-term memory being pushed beyond capacity. Furthermore, Bruning et al. (1990) stressed that leaning is most “efficient when individuals focus all of their resources on essential learning and few or none...on incidental learning and referential holding” (p. 29).

Bruning et al. (1990) discussed the four-component instructional design (4c/ID) model that is highly relevant to this study because of the premise that instruction should focus on practice. This model, created by van Merriënboer, uses cognitive psychology and cognitive science to guide instructional design. The use of projects, cases and role-play scenarios are techniques suggested to make learning activities authentic. The fact that technology can provide varied opportunities for practice with feedback that is individual to the student promotes automaticity (p. 224–227). Much of the foundational knowledge gained through repetitive exercises form the base for students to develop further critical thinking later. This relates to this study, as it provides a path where achieved automaticity through foundational aspects like vocabulary, reduce cognitive load when working through accounting word problems.

In general, cooperative and collaborative learning are instructional approaches in which students work together in small groups to accomplish a common learning goal. Examples include group activities that involve case studies, problem based learning, or similar instructional techniques. I utilize collaborative learning through a role-play scenario, whereby students classify transactions using a decision chart. For this activity, the instructor provides each group of students a community to analyze using the decision chart. From there, the group determines the categorization that best fits the decision chart criteria. All communities then submit their report to the “auditors” who review and compare them with the same decision chart. Then, the auditors determine which community has “properly reported” their financial information and which ones have not. The collaborative aspect is due to both the community subjects and the auditors all being students. After sharing the results of the audit, a discussion ensues about the chosen classifications which allows students to work with groups to “ferret” out differences, and then collaboratively decide what is generally acceptable. In this way, they construct their own knowledge of how communities and auditors use financial reports.

Both cognitivism and constructivism are psychological foundations that influence instructional design (Bruning et al., 1990). Gagne’s theory of instruction is one of theories of learning and instruction based on cognitive psychology. Additionally, the schema theory, cognitive load theory and constructivism have provided alternative views on learning and instruction. The cognitive information processing theory highlights the importance of feedback. Driscoll (2007) stated that feedback provides the learner with information about the correctness of their response and competence of performance as well as corrective information, so that the learner can make necessary modifications in performance. Cognitivism also advances increased

emphasis on the role of prior knowledge in learning new knowledge and skills (Bruning et al., 1990).

**1.1.7. Instructional design and strategies.** Driscoll (2007) stated that practitioners must incorporate “instructional strategies into their instructional designs that direct attention, facilitate encoding and retrieval, and provide practice in a variety of contexts.” (p. 39). Design is the bridge that connects ontological and epistemological inquiry, connecting the philosophy of being/existence to the theory of knowledge and separating justified belief from opinion. The nature of things is designed through human imagination, and the way we learn or know that something “is,” is based upon how we design the process. By defining instructional design and providing a model for its application below, I intend to provide the reader with the foundations for the instructional strategies employed in this course.

The Dick and Carey (2009) systems model for instructional design describes a deliberate, systematic process with the goal of promoting learning. This systems model focuses on the interactions between learners, learning materials and the learning environment. The model considers feedback critical and encourages the use of authentic, real-world problems in instruction (Dick et al., 2001). This model provides for high levels of accountability, as it is outcomes-based and requires both summative and formative evaluations. Furthermore it resonates with me as an accounting instructor, as instructional objectives tend to be both specific and measurable. Design results in what a product ends up looking like and functioning. Development is the process of choosing tools to implement based upon the design. Both design and development are important components of the systems approach model and structured as follows:

- Goal/Purpose/Pace (determined during the design phase)
- Parameters/Design (generated during design but honed through development)
- Pilot/Revisions (reiterative process during development)
- Delivery/Evaluation (once complete, the results of how the product “works” is evaluated for further revisions, if applicable) (Dick et al., 2001, p. 6–8)

**1.1.8. Instructional strategies.** The Dick and Carey (2009) model outlines the methods to teach concepts, principles and mental models, procedures and ill-structured problem-solving. It also provides detailed teaching lessons for each type of learning. According to Silber and Foshay (2006), it is important to know whether learning was successful only after a complete cognitive task analysis and “analysis of the learner’s prior knowledge, frame of reference, motivation, and confidence” (p. 411). Unlike behaviorism, which seems to classify responses as either conditioned or unconditioned and then link the desired response to appropriate reinforcers, cognitivism takes into consideration the fact that all learners vary in their level of cognitive development. Material information, for which the learner has no reference, will be selectively excluded.

**1.1.9. Gagne’s theory of instruction.** This theory is based on both cognitive information processing theory and his own observations of effective teachers in the classroom. Gagne’s work in the areas of learning outcomes and related concepts of instructional events and conditions of learning are heavily utilized in this study.

**1.1.10. Instructional strategies for motivation.** In my practice, the underlying struggles for the non-business major learners stem from motivation. In most cases, the introductory course is a required course or a pre-requisite for another desired course. Learners are commonly taught in a large lecture hall, using traditional lectures with the instructor demonstrating through the

“worked problem” method. According to Buckhaults and Fisher (2011), research has revealed that educators need to use less lecture-only instructional methods and incorporate service learning, guest speakers who are practicing professionals and digital media into their presentations. Correspondingly, Eskew and Faley (1988) found that aptitude and motivation have the largest marginal contribution towards higher exam performance in the first college-level accounting course. To address the component of motivation in this study, I utilized an instructional design model designed by Keller (1987), aimed at motivation, including steps for attention, relevance, confidence and satisfaction (ARCS).

In addition to motivation, another area that requires an instructor’s awareness is how well learners can understand and speak accounting terminology. Buckhaults and Fisher (2011) identified accounting as a subject that is as “difficult as learning a foreign language” (p. 32). Methods to help students with vocabulary should be employed due to this perception. One strategy recommended by Buckhaults and Fisher (2011) once the language has been mastered, was having students look for incorrect usages of accounting terms in various media to spark additional interest. Borja (2005) recommended starting each session with a review of the vocabulary covered in the previous class before beginning new topics, to help the student reduce the amount of cognitive load necessary to retain information.

Perry (1959) outlined that the needs of non-business majors are “personal, socio-economic, or general education in business” (p. 474). Perry (1959) characterized the personal as managing income/expenditures, family budgeting or completing tax returns. Socio-economic was defined as the “management of a government or community with reference to its source of income, its expenditures, the development of its natural resources...” (p. 474). Finally, general education business refers to a learner’s desire to “communicate intelligently in a world of

business” (p. 474). Three areas dominate the elementary accounting course content: (1) assignment of considerable practice of a repetitive nature, (2) presentation of alternative methods of handling one accounting procedure and (3) introduction of many activities which contribute to the professional knowledge of the accountant. Perry (1959) asserted that for a non-business major, the degree of fluency (understanding and applications of accounting terminologies and practices) should be reduced regarding technical aspects; for example, sufficient learning outcomes are achieved for a non-business student if one method of handling a procedure is learned. Mintz and Cherry (1993) described intellectual skills, such as problem-solving and logical reasoning, as the most important aspects of a course in introductory accounting for non-majors. This was followed by communication, both written and oral skills. Ultimately, the technical aspect, such as worksheet preparation and computer applications, was deemed the least important skill to be developed by non-accounting majors. This summary provides observations into how the content of accounting education for non-business majors differ from accounting and business majors. It also provides information on the relevance and motivation of non-accounting students. Lloyd and Abbey (2009) also suggested “mini-courses” to help non-accounting majors increase confidence, decrease anxiety, modify their perception about accounting and increase retention of the material. These gains provide the benefit of helping non-majors be more comfortable with their accounting fluency. The design of the V246 course is segregated into three “mini-courses;” we first learn vocabulary for business, then move to summary tools (journals, financial statements, etc.). We take the same path for nonprofit organizations, discussing familiar vocabulary from business, learning new vocabulary for nonprofits and then the summary tools (comparing and contrasting them to business). The third mini-course is the

government section, where students begin with the vocabulary again (comparing to business and nonprofit organizations) and then move to summary tools.

## **2. Definition of Relevant Terms**

*A traditional student* is defined as an adult between the ages of 18 and 24 who is studying full-time in an accredited academic program (Stokes, 2006).

*Deep learning* is defined as detecting patterns, applying knowledge and skills in new contexts or in creative ways. Biggs (1987), Entwistle (1981), Ramsden (2003) and Tagg (2003) defined deep learning as the “demonstration of higher order thinking skills such as synthesis and evaluation, and a personal commitment to learn the material, not merely learning for the sake of a passing grade” (as cited in Floyd, Harrington & Santiago, 2009, p. 183)

*Domain knowledge* is defined as knowledge that individuals have about a particular field of study, such as subject areas or major (Bruning et al., 1990).

*Instructional design theory* offers varying levels of guidance for educators in order to provide a means to attain given goals for learning (Reigeluth, 2009).

*Instructional objectives* are defined as what the instructor wants the students to gain from the course as a result of taking the class (Mager, 1962).

*Instructional strategies*, according to Merrill (2013), are defined as “a set of events that facilitate learning of specific component skill or content.” (p. 87).

*Learning outcomes* are defined as what students should be able to do after instruction (Mager, 1962).

*Strategic learning* was defined by Entwistle and Ramsden (1982) as the use of both deep and surface approaches to achieve goals based on what is required and the learning conditions, such as the amount of much time they have to prepare for an assessment.



*Student learning goals* are defined as what the students hope to learn from taking a particular course or their external needs (Mager, 1962).

*Surface leaning* involves recalling and reproducing content and skills. Biggs (1989), Bowden and Morton (1998), Draper (2009) and Tagg (2003) defined it as “rote learning and the desire to earn a passing grade” (as cited in Floyd, Harrington & Santiago, 2009, p. 183).

**2.1. Instructional design models.** The Dick and Carey model as well as Gagne’s nine events of instruction intertwine to form the basis for my eclectic course design. The diagram of Dick and Carey’s instructional design will be explored in detail as it relates to this study. Next, I will discuss instructional strategies most relevant to introductory accounting education, instructional objectives, learning outcomes, student learning goals and the interrelated nature of these concepts.

A common model used to develop courses is analysis, design, development, implementation and evaluation (ADDIE). This instructional system design model has several weaknesses, including its lack of iterative processes. As a result, others have since modified it. One modification is the Dick and Carey model, which was introduced in 1978 and included iterative processes for revising instruction. For this study, I completed a case study evaluation of a course to which I applied this model to reshape the course, in conjunction with Gagne’s nine events of instruction for outlining the activities for each class session. I will begin with a discussion of the relevant steps for the Dick and Carey instructional model as this represents the entire V246 course, including the evaluation in this study.

The first step in the Dick and Carey model is to identify instructional goals. This step is where I determined what I wanted the learners to be able to do when they completed this class. I combined information from the literature review that explored the practices of experienced

accounting educators, information regarding the expectations of practicing professionals in the field and the data I had observed through my own teaching to outline the instructional goals. The next step is to conduct an instructional analysis that provides a procedural account of what learners do when they perform the goal. Parallel to the analysis is identifying entry behaviors (the skills, knowledge and attitudes) for the learners to begin receiving instruction. It was at this step that I came to observe the learner's requirement of mastering accounting vocabulary and reading comprehension. The performance objectives serve to bring the prior information together and outline the skills to be learned, the conditions for utilizing those skills and the criteria for successful performance. This brings us to developing assessment instruments that specifically address the objectives identified (Dick, Carey, & Carey, 2001, p. 6–7).

At this point, the instructional strategy is developed, and it is a detailed process involving planning, presentation of information, practice/feedback, testing and reflection. Gagne's nine events of instruction is the model that best captures the steps I utilized in creating the agenda for each class session. The model outlines each of the nine instructional events and the corresponding cognitive process/es for the learner. For example, the first event is to gain the learners' attention, and the cognitive process for the learner would be reception. Next, we outline the objectives which signal to the learner what they should expect from that class session. This is followed by helping the learners recall prior information, and providing stimulus, guidance, and subsequently setting the expectation for the results that the learners are expected to respond to. Finally, the events turn to deliverables, wherein the instructor provides feedback, assesses performance and provides opportunities to help the learners transfer their learning (Gagne et al., 2005).

## 2.2. Defining instructional strategies. Morrison, Ross, Kalman and Kemp (2010)

defined instructional strategies as the creative part of instructional design that uses innovative ways of presenting information in a manner that helps the learner integrate the new information with ideas they have previously acquired.

Reigeluth (2009) developed a framework for comparing instructional strategies based on elements of learning type, control, focus, grouping, interactions and support. He prepared a synthesis of the instructional taxonomies with contributions from theorists such as Bloom (1956), Gagne (1974) and Merrill (2013). This synthesis comprised four quadrants: memorize, update, apply skills (domain) and apply generic skills. I utilized this diagram to reflect how the synthesis of instructional taxonomies correspond to deep and surface learning, as described by Dinsmore and Alexander (2012).

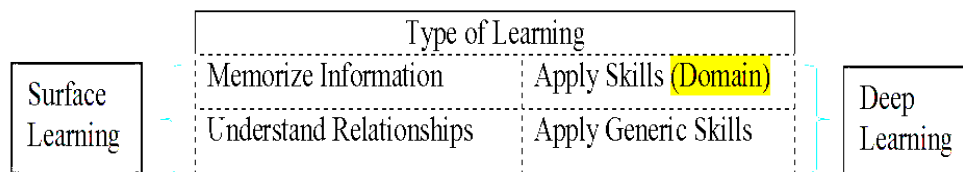


Figure 1. Type of learning as defined by Reigeluth (2009) and the relationship to deep and surface learning

*Note:* An example of the application of this diagram would be that students might need to “memorize” account categories in order to “apply” the skill of determining whether an account should be debited or credited in a journal entry. This shows how memorizing—a surface learning approach—is connected the deep learning approach of application.

I focused on both the type and support of learning, because this relates to purposeful learning activities and the cognitive processes involved. For this study, Bloom’s revised taxonomy for the cognitive domain was utilized to thematize the assessment questions.

**2.3. Surface approach.** Rote memorization is a type of learning most often connected to surface learning and is used by learners with a surface approach to learning. In this way, they can recite exactly what they hear. When a learner understands relationships, they are able to make connections between data elements such as how a debit compares with a credit and can communicate similarities and differences between accounts (Dinsmore & Alexander, 2012).

**2.4. Deep approach.** According to Reigeluth and Moore (2009), applying generic skills includes theories that align with a constructivist view, using activities such as analysis, synthesis and evaluation for problem-solving. Examples of such activities include a student's ability to create stories, make predictions and use a variety of sources to respond to questions.

**2.5. Critique of deep and surface learning.** Despite the widespread utilization of deep and surface approach research in the literature, there are some criticisms. Howie and Bagnall (2013) stated that problems exist “with the model in the areas of supporting evidence, imprecise conceptualization, ambiguous language, circularity, and a lack of definition of the underlying structure of deep and surface approaches to learning” (p. 389). This study does not seek to determine what the students' approaches to learning are. There are numerous instruments in the research, as cited below.

Entwistle et al.'s (1979) Approaches to Studying Inventory (ASI)...and Approaches to Study Skills in Students (ASSIST) (Entwistle et al. 2000) ...Biggs' (1987) Study Process Questionnaire (SPQ)...Inventory of Learning Styles (ILS), developed in the Netherlands by Vermunt (1992); Meyer's (2000) Reflections on Learning Inventory (RoLI) developed in the U.K., and Schmeck et al.'s (1977) Inventory of Learning Processes (ILP) developed in the U.S. (Duff & McKinstry, 2007, p. 11)

I utilized “deep learning” and “surface learning” in this study to create overarching themes for individual assessment questions and by looking at how the students performed on them in relation to the revised Bloom’s taxonomy subject and whether they are a business or non-business major/minor.

### **3. Deep and Surface Processes**

Dinsmore and Alexander (2012) completed a systematic literature review on the topic of deep and surface processes. They wanted to determine why results for deep and surface processes varied by focusing on the conceptions (definitions), operationals (measurement), contexts and models used. They reviewed 221 studies and suggested improvements for future research to include explicit definitions of the terms deep and surface approach. Furthermore, they also outlined a number of suggestions for future research on deep and surface processing, ...in regards to measurement of deep and surface processing, two problems arose: the heavy reliance on self-report questionnaires and the paucity of validity evidence provided for these measures. Third, contextual considerations may have played a role in the inconsistencies. Some of these inconsistencies included differences found across studies in terms of whether or not a research task was employed (i.e., the presence of some context) and which, if any, academic domain was under investigation. Fourth, the predictors and objectives specified in the models of deep and surface processing varied widely in these studies. For instance, in terms of learning objectives, differences ranged from simple recall of a face recognition task (e.g., Block, 2009) to more complex learning outcomes. (Dinsmore & Alexander, 2012, p. 520–521)

#### **4. Developmental Framework for Deep and Surface Learning**

As cited in Dinsmore and Alexander (2012), Alexander's (1997) multidimensional nature of domain learning (MDL) model helps in the following:

...examines a learner's path in an academic domain (e.g., mathematics) through three different stages of expertise: acclimation, competence, and proficiency. Individuals' development (or lack thereof) in these stages is guided by the interaction of three forces: knowledge, interest, and strategies. Further, the MDL distinguishes between surface-level strategies (e.g., initial apprehension or deciphering of text) and deep-level strategies (e.g., personalization or transformation of text). In acclimation, learners depend primarily on surface-level strategies to build subject matter knowledge (Murphy & Alexander, 2002), which encompasses both domain knowledge (i.e., breadth of knowledge one possesses of a target domain) and topic knowledge (i.e., the depth of knowledge about a domain-specific concept). (Alexander, 1997, p. 508)

Alexander (1997) defined strategies in the MDL as processes "purposefully invoked when a learner wishes to maximize performance or to circumvent problem in understanding or learning" (p. 223). According to the multidimensional nature of domain learning, "there is no such presumption that learners would only use deep-level strategies or surface-level strategies. In fact, a learner would use a combination of these strategies to accomplish a task" (p. 512). These findings support both the supposition that surface level learning is foundational for deep learning and the interdependence of the two, based upon the prior knowledge of the individual.

#### **5. Instructional Strategies Most Relevant to Introductory Accounting Education**

In this section, I will discuss how many educators and learners view learning in the accounting domain and the context in which most introductory accounting learning occurs.

Subsequently, I will look at the instructional strategies most often utilized by accounting educators and the impact of a variety of strategies on learning. The prevailing realities of the introductory accounting course is that enrollments range from over 50 students to as many as 700 (Cooper & Robinson, 2000). Many of the students enroll merely to satisfy graduation requirements with no intent to study accounting or business.

Leveson (2004) completed a qualitative study of accounting educators that investigated the ways the participants (educators) thought of students learning accounting, their teaching role and teaching approach. The study found that the majority of educators viewed learning accounting as developing concepts and consequently focused their teaching on encouraging concept development. In contrast, Lucas (2001, 2002) found that both faculty and students view accounting in technical/procedural terms, and consequently adopt a structured approach (rules, logic and systematic explanations) to study the course

Buckhaults and Fisher (2011) completed a study that found students new to accounting viewing it as a subject that is as “difficult as learning a foreign language” (p. 32). To this end, instructional strategies should be utilized to assist students with vocabulary and technical jargon. Furthermore, Buckhaults and Fisher (2011) contended that students need to complete assignments prior to class in order to reduce the anxiety associated with the fast pace of a limited class session.

Chickering and Gamson’s (1987) work was based on extensive reviews of college-teaching literature. They articulated that students “need frequent opportunities to perform and receive suggestions for improvement.” (p. 4). Cooper and Robinson (2000) further supported this suggestion by asserting that the model-practice-feedback loop is instrumental at all levels of education. This is a process where the teacher demonstrates,

the technique, skill or concept to be taught. Then students are given multiple opportunities to practice the skill or work with the concept soon after modeling takes place. Finally, students are given prompt and descriptive feedback on the quality of their performances. (Cooper & Robinson, 2000, p. 8)

A discussion on the context in which most introductory accounting learning occurs cannot be considered complete without a discussion of the mindset of both the instructor and the learners. Ricci (2013) outlined in her text, *Mindsets in the Classroom*, how a growth mindset which supports the belief that intelligence can be grown, is a necessary component of the classroom structure so that learners develop persistence, effort and focus on learning. The author posits that a growth mindset is integral in planning for instruction. It begins with a pre-assessment, discovering what students know about the topic. For this study, a syllabus survey was utilized to determine not only what the students knew about the topic but also what their goals were in taking the course. Ricci (2013) suggested using the information gleaned from the pre-assessment to help with small group formations and tailoring activities according to the knowledge group.

Reigeluth and Carr-Chellman (2009) outlined the direct instruction approach with research-based attributes such as (1) prompting of relevant knowledge, (2) student-teacher interactions, (3) use of visual prompts, examples and demonstrations and (4) continual assessment of student understanding (before, during and after the lesson). These attributes will be outlined in more detail and incorporated within the deep and surface processes.

5.1. Lecture/Demonstration. The most utilized instructional strategy in introductory accounting education—lecture—has garnered mixed reviews in the research. According to McKeachie (1999), Johnson, Johnson, and Smith (1998), Cuseo (1998) and Costin (1972),



appropriate uses of the lecture method include: (a) organizing, integrating and reading materials, (b) modeling problem-solving and critical thinking as conducted by an advanced practitioner in the field, (c) relating course-relevant personal experiences to the students, (d) providing context for issues and ideas and information introduced in the reading and (e) integrating information from a large variety of sources, or a number of points of view in a small amount of time (as cited in Cooper & Robinson, 2000, p. 9).

According to Stuart and Rutherford (1978), “research findings suggest that student concentration during lectures begins to decline after 10–15 minutes” (as cited in Eisen, 2010, p. 2). Numerous studies (Benjamin, 2002, p. 63; Davis, 1993, p. 113; Goss, Lucas & Bernstein, 2005, p. 63; Wankat, 2002, p. 680) have supported this timeframe. Conversely, Wilson and Horn (2007) completed a study examining at the origins of this estimate and determined the following:

The research on which this estimate is based provides little support for the belief that students’ attention declines after 10 to 15 min. Most studies failed to account for individual differences in attention. Our findings indicate that instructors should consider individual differences in student attention when lecturing and determine whether students are recording the relevant content of the lecture in their notes. (Wilson & Horn, 2007, p. 85).

The disadvantage of lectures raised from both sides of the debate revolve around attention, i.e., student engagement and results in an instructional method that may not be student-centered. Svinicki and McKeachie (2011) suggested incorporating real-time assessments of what the students have heard and retained from the lecture. Providing frequent and immediate feedback is a component of instruction that is lost in most large class lecture environments.

Cooper and Robinson (2002) posited that by making large classes seem small, many of these disadvantages could be mitigated. There are various technological tools, such as polling systems, which allow instructors and students in large classes to participate in polls and provide real-time, frequent assessments.

**5.2 Class size.** Past research has shown that class size does not affect performance when using the lecture method and objective examinations (Baldwin, 1993; Hill, 1998). Murdoch and Guy (2002) conducted an empirical study that looked at how student performances in small and large classes varied in terms of assessments that comprised analytical and essay questions, especially when group activities were utilized as an instructional strategy. The study included small classes with samples ranging from 37–40 students, and a large class that had 280 students. This study found that small classes as compared to large classes using group activities performed better. What the study does not address is whether group activities also improved the student scores in large classes.

**5.3. Repetition (unlimited attempts and immediate feedback).** Kheng, Rony and Na (2015) explained that allowing unlimited attempts and immediate feedback are integral components to providing a learner-centered course. Furthermore, Kheng et al. (2015) conveyed that accounting is a subject that requires several attempts at problems and consistent practice to learn. Elements of effective teaching include improved learning through immediate feedback and allowing students to think through a problem, prior to providing the answer. Opportunities for more repetition in large classes can be increased if more technology dependent tools are utilized as compared to traditional paper and pencil methods. In order to increase students' participation and assist novice learners lacking fluency in the language, response device usage

(e.g., clickers) is one option that provides several benefits in the classroom that students would not have bereft of technology use.

**5.4. Bloom's taxonomy and constructivism.** In this section, I will discuss the six revised areas of Bloom's taxonomy: remember, understand, apply, analyze, evaluate and create. Finally, I will outline how Vygotskian constructivism helps create a classroom environment that is learner-centered, using the concept of scaffolding from lower-level skills to higher-level ones. Benjamin S Bloom (Krathwohl, 2002) originally introduced Bloom's taxonomy around 1950. The revised Bloom's taxonomy used in this study replaced the original nouns (e.g., knowledge, comprehension, application, analysis, synthesis and evaluation) with the revised verbs (e.g., remember, understand, apply, analyze, evaluate and create). According to Krathwohl (2002), Bloom's taxonomy was developed "...to classify objectives, activities, and assessments [which] provides a clear, concise, visual representation of a particular course or unit" (p. 218).

**5.5. Deep learning.** Phillips and Graeff (2014) demonstrated how simulations are techniques that allow readers to compare the authors' views of the value of case study methods to other literature being reviewed. Because this study was conducted over three separate semesters, it provides a broader base for the conclusions reached. Research supports that student perceptions about activities play a role in the level of learning. It also is an indicator of perceived relevance and motivation.

Phillips and Graeff (2014) also outlined a simulation experience used in the first accounting class that improved student learning goals. It discussed the case method and problem-based learning methods and described how simulations differ. Specifically, simulations have less text and other information as compared to cases, and consequently, require more student involvement in constructing context. The article laid out the case that simulations result

in higher order thinking skills that relate to Bloom's taxonomy. This simulation combined both task completion and collaborative effort in order to encourage critical thinking and enhance student confidence. It was not graded and instead was used to generate discussion and questions from the students.

## **6. Instructional Objectives to Learning Outcomes**

Mager (1962) defined instructional objectives as "a collection of words and/or pictures and diagrams intended to let others know what you intend for your students to achieve." (p. 3). Furthermore, he posited it as a means for finding out whether important outcomes have actually been accomplished. More importantly, objectives must have characteristics that tell the reader what the learner should be able to do, under what conditions they should be able to do it and how well it must be done. In this study, I have chosen to label what the learners should be able to do as the learning outcome. Because this study is an evaluative study, I have chosen to focus on the outcomes of the course rather than the objectives, as it is the outcomes that most instructional objectives are designed to measure. The instructional objective stated for V246 is as follows:

The main purpose of this elementary course is to prepare 1st and 2nd year students for the next level of undergraduate courses in governmental and non-profit accounting and reporting and a preparatory course for financial management and government finance.

Students are expected to develop an understanding of basic accounting concepts, assumptions, important Generally Accepted Accounting Principles (GAAP) and accounting cycle as understood and practiced in different types of organizations

Additionally, the student learning outcomes are outlined below:

1. Explain problems using financial accounting terminologies.
2. Record daily transactions for business, nonprofit and governmental

entities.

3. Illustrate the basic procedures for adjusting, closing entries and summarizing the accounting records, prior to the preparation of the financial statements.

4. Students should be able to construct financial statements using generally accepted accounting principles (GAAP) based upon financial transactions and analyze the results of operations.

## **7. Student Learning Goals and Concerns**

One of the strengths of the case study method is the diversity of information sources. Bloomberg and Volpe (2018) stated, it is through triangulation that this form of research provides “rigor, breadth and depth to the study, and provides corroborative evidence of the data obtained” (p. 100). Consequently, compiling data regarding student learning goals and concerns provides a portion of this component for this study. Dull, Schleifer and McMillan (2015) discussed student goal orientation and its impact on achievement. “The motivation constructs under consideration include a mastery goal orientation (consistent with a deep approach), a performance goal orientation (consistent with a surface approach), and a multiple-goals approach (a combination of mastery and performance)” (p. 152–153). Dull et al. (2015) posited that a combination of mastery and performance goal motivations, rather than a singular perspective, may provide better outcomes related to course grades. Another important finding of the Dull et al. (2015) study was

Students with similar academic capabilities, based on their grade point average (GPA) and first exam score, but with low mastery and performance goals, performed worse by the end of the semester than other students with higher performance and mastery goal orientations. (p. 154).

Given the significance of student learning goals for course performance, I gathered information from students regarding their expectations from the course as well as their concerns. Additionally, this case study includes the GPA and looks at business and non-business major/minors (similar academic capabilities).

Bartley (2019) completed a qualitative study that looked at the students' perspectives of learning in an introductory accounting course. There were five research questions in that study, three of which apply to this study; e.g., how do students describe their expectations as they enter the introductory accounting course? How do students describe their learning experiences during the course? How do students describe their learning outcomes in this course? The Bartley (2019) study found that homework, interim deadlines and in-class reviews contributed to the students' reported course successes. The study also reported that the top five concerns, determined by the number of times the theme was reported, were homework [75], quizzes [64], grades [45], other classes [42], exams and outcomes [40]. Additionally, Bartley (2019) found that student expectations differed between business and non-business majors, stating that accounting majors had certain character traits, such as a preference for organization, which non-majors did not share to the same degree.

## **8. Instructional Methods and Prior Knowledge Group**

Kirschner and Merriënboer (2013) published a paper regarding learners and instructional methods, expressing concern regarding the validity of learning styles and catering instructions to best support them. The article also criticized labeling current learners as digital natives and concluding that learners are self-educators. Although the article stated that there should be a focus on what learners have in common, Kirschner and Merriënboer (2013) did not deny that there are individual differences between them and posited that there is scientific evidence that

objectively measures cognitive abilities. Furthermore, the article stated that prior knowledge should be taken into account when instructional methods are applied, which ties to a point of interest in this research, outlined in research question 3—surface learning will benefit students with low prior knowledge.

An example of the intersection between instructional strategies and prior knowledge is demonstrated in what is known as the expertise-reversal effect (Kalyuaga, Ayers, Chandler & Sweller, 2003). This effect asserts that learners with low prior knowledge learn more from studying examples than from solving the equivalent problems, and this pattern reverses for learners with higher prior knowledge. Furthermore, Gibbs and Simpson (2005) stated that students generally performed better on coursework than exams, citing “there was a significant positive correlation between the proportion of coursework on a module and average marks ( $r = +0.36, p < .0001$ )” (p. 6).

**8.1. Zone of proximal development.** This is defined as “the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (Vygotsky, 1978, p. 86). Although learning and development are two separate concepts, their intersection in the use of scaffolding brings this theory to the forefront in planning instruction. Chaiklin (2003) completed an analysis that looked at how the zone of proximal development is utilized in the literature. The author observed three areas that seemed to have a common interpretation that he felt needed further analysis. They were, the generality assumption (Vygotsky’s intention was to use the concept for all kinds of learning), assistance assumption (focus on the importance of more competent assistance) and potential assumptions (learning is enjoyable). In the conclusion of the study, the author posited that the exploration of

the cognitive processes and including elements that assist with conceptual learning in specific curricular areas could lead to a better design for content learning programs (Chaiklin, 2003).

Furthermore, Langer and Applebee (1986) provided a list of components necessary for effective instruction scaffolding, outlined below:

- Ownership: Learners “must see the point of the task, beyond simple obedience to the teacher’s demands” (p. 185–186); this is likened to attention/interest.
- Appropriateness: “Instruction builds on...skills the students already have; and helps them to accomplish tasks that they could not otherwise complete on their own” (p. 186).
- Structure: “Tasks produce a natural sequence of thought and language, providing effective routines for the students to internalize” (p.186).
- Collaboration: “Recast student efforts without rejecting what the students have accomplished on their own” (p.187).
- Internalization: This I equate to transfer of control, since it allows the learner to complete similar tasks without further help.

## **9. Current and Past Research on Instructional Techniques in Introductory Accounting**

Past research discusses the benefits of programmed instruction (PI) in introductory accounting courses. Skinner (1954) studied and researchers attempted to identify the benefits of PI in accounting education. PI may be considered similar to computer programs being used today, since both allow for repetitive practice and feedback without instructor presence. Doney and Neumann (1965) found that of five groups employed in their research, the test group using programmed instruction had no significant improvement over traditional textbook instruction in exam scores on a multiple-choice assessment. Based upon statistical analysis, the mean scores of



the group that used programmed instruction were higher than all non-honors section of the course. The flaws of this study were the lack of random sampling of the participants as well as the use of different instructors and meeting logistics.

A case study in the finance domain, conducted by Morales (2011), focused on the use of a polling system and its impact on critical thinking (a characteristic of deep learning), promoted by continuous assessment. This study was conducted at the Dublin Institute of Technology with 46 second semester (2009/2010) final year undergraduate students in order to improve classroom dynamics. The study discussed both the advantages and challenges of utilizing audience response systems in introductory courses. Advantages included the ability to have full class participation and shared communal feedback on the understanding of the topic posed. The response system also allowed for frequent and immediate assessment, regardless of class size.

Nevertheless, the Dublin study found no significant improvement in performance occurred between students with and without lectures using an audience response system. Of interest is that the use of these devices combined with peer-to-peer activities had either a neutral or a positive effect on learning outcomes. One limitation of the Dublin case study also reported that the instructor had very little experience in utilizing polling questions, and not all students participated. Morales cited a study by Crouch and Mazur (2001) that utilized peer interaction and 10 years of data from an introductory physics course for non-majors at Harvard University. The Harvard University study instructional method utilized questions designed to expose difficulties students were experiencing with the material. In this study on non-majors in an introductory course, it was found that students' results improved dramatically and showed that students develop and retain a better understanding of the learning material after classroom discussions.

Wygat and Stout (2015) completed a research utilizing a survey instrument for data collection. The study participants involved 105 United States accounting educators who had received teaching awards. They were asked, “in their own words and in ranked order of importance [to provide], a minimum of three and up to five factors or qualities of your teaching that you believe have helped distinguish you as an effective teacher” (p.173). The authors categorized and weighted the 453 survey responses received, and the results indicated that the highest weighted score was in the category labeled “class session learning environment.” This category emphasized delivery skills, for example, providing simple examples and analogies and clarity of lesson. Classroom management was another component of this section that encompassed understanding that different learning goals necessitate a variety of activities such as case studies, group projects and web-based learning. The last component of this category was promoting learning with collaborative learning, student involvement and the use of the Socratic method.

Two additional instructional techniques that stood out in the review of the accounting literature were cooperative learning and repetition. Cottell and Millis (1993) completed a paper that reports the results of implementation of cooperative learning in accounting courses and defines cooperative learning as:

...a more structured form of collaborative learning provides a practical framework for implementing mutual goals such as promoting active learning; bridging the gulf between teachers and students; creating a sense of community; ensuring that knowledge is created, not transferred; making the boundaries between teaching and research less distinct; and locating knowledge in the community rather than in the individual. (Cottell & Millis, 1993, p. 96)

What I found most useful is the suggestion for a cooperative learning review over a traditional exam review. In this format, students are placed in groups where each student comes with a question that they have encountered in preparation for the exam. If a student does not have a question, they must provide a question similar to what they expect to see for the exam and explain how to solve it. This format is especially pertinent in capturing the movement from surface approaches to deep approach in preparation for the exam. Using this kind of activity after employing guided instruction as well as multiple in-class opportunities to grapple with the content, places it within the zone of proximal development.

The model-practice-feedback loop is among the most powerful instructional strategies available to teachers at all levels. This procedure involves having the teacher model the technique, skill, or concept to be taught. Then students are given multiple opportunities to practice the skill or work with the concept soon after modeling takes place. Finally, students are given prompt and descriptive feedback on the quality of their performances. (Cooper & Robinson, 2002, p. 12)

## **10. Conclusion**

This research focuses on instructional strategies that promote student learning. As mentioned previously, feedback is a powerful instructional tool and a component of assessment, which is an important factor utilized to analyze student learning. Gibbs and Simpson (2005) published a paper on “conditions under which assessment supports learning.” In this paper, he discussed a comprehensive review of 87 meta-analyses studies that stated feedback was the most powerful influence on student achievement.

This literature review has outlined how instructional designs and strategies are rooted in cognition and relevant to introductory accounting education. Major concepts, such as cognitive

psychology and constructivism, were discussed to illustrate how they frame the instructional design and strategies utilized in this case study. The Dick and Carey model and Gagne's nine events of instruction were interrelated, and the research demonstrated how instructional objectives, learning outcomes and student learning goals are components of a learner centric classroom. Finally, Bloom's revised taxonomy was incorporated in this study to align the stated course objectives and outcomes with instructional strategies. Bloom's revised taxonomy was used to classify curricular objectives and test items to determine breadth or its lack thereof.

## Chapter 3: Methods

Bloomberg and Volpe (2018) stated that one of the strengths of the case study approach is the variety of methods, including those that “generate quantitative data such as statistical data...” (p. 100). They also pointed out that “triangulation is critical in attempting to obtain an in-depth understanding of the phenomenon under study; adds rigor, breadth, and depth to the study, and provides corroborative evidence of the data obtained” (p. 100). In order to improve the V246 course specifically for non-business majors, an evaluation of instructional strategies was conducted, guided by the following questions:

1. How aligned are the instructional strategies used in V246 with the stated learning outcomes?
2. How aligned are student learning goals with stated learning outcomes?
3. How does using surface and deep strategies in the course relate to student scores when examined by a prior knowledge group (business vs. non-business)?
  - a. Is there a statistically significant difference among assessment types (exams, homework, Top Hat text Q & A, responses utilizing polling technology, Canvas quizzes and in-class activities) in terms of student major (business vs. non-business) and year (sophomore, junior, senior)?
    - i. H1: There is no statistically significant difference on assessment type in terms of student major and year?
4. How do students perceive the contribution of instructional strategies to their learning?

### 1. Site Description

This study was conducted on the main campus of Indiana University, a Midwestern University, in a course taught by one instructor—the author of this study—using existing data

from the spring 2019 semester. There are five degree programs offered through the School of Public and Environmental Affairs (SPEA); students majoring in two of these programs are required to complete V246. For the spring 2019 semester, there were 2536 students enrolled in the undergraduate program at the school; 1355 (or 53%) of all current undergraduates are required to complete V246 as a condition for receiving a degree within their chosen major or minor. The same instructor (the author) teaches the sections of V246 that have been used in this study, with the assistance of graduate and undergraduate teaching assistants. Course composition is generally between 70–110 students in each section of the course. The majority of undergraduate students are between the ages of 19–24. Although the course is primarily for students at the SPEA, students from other schools (including the School of Business) can enroll. See Appendix B to review the course syllabus, including a list of instructional activities by week and class session.

## **2. Participants**

This study took the position that non-business majors approach their learning differently than business majors. For the purposes of the study, students with a minor in business were grouped in the business major category. The rest of the learners were enrolled in the course as an outside requirement for their degree programs. Many came to the V246 course with concerns for lacking prior accounting coursework, negative experiences in prior accounting course(s) or with a lack of confidence in the math domain. This study included 141 undergraduate students who enrolled in V246 for the spring 2019 semester at the Indiana University Bloomington campus. The spring 2019 V246 course comprised two sections that met on Tuesday and Thursday—the first section from 11:15 am–12:30 pm, and the second section from 2:30 pm–3:45 pm.

Students enrolled in various majors were present in the classes: business majors (including students with non-business major but a business minor) [26%] and non-business majors [75%]. Additionally, the class breakdown of students was seniors (23%), juniors (40%), and sophomores (37%). There was one freshman enrolled in the course who was added to the sophomore participants' group. The median GPA for the participants of this study was 3.087 ( $M = 3.098$ ,  $SD = .49$ ). Due to the sample size, I parsed the data between students with GPAs that fell above and below the median; the mean GPA for non-business majors ( $M = 3.02$ ,  $SD = .46$ ) was below the business majors ( $M = 3.33$ ,  $SD = .51$ ).

Table 1 provides the student counts and percentages at each grade level and their major/minor upon enrollment into V246. Over half the business majors were seniors, whereas seniors comprised the smallest percentage of non-business majors.

Table 1

Participants by Class Standing and Major

Class Standing	Business Major/Minor		Non-Business Majors/Minor		Total	
	#	%	#	%	#	%
Senior	21	58.3%	12	11.4%	33	23.4%
Junior	4	11.1%	52	49.5%	56	39.7%
Sophomore	11	30.6%	41	39.1%	52	36.9%
Total	36	100%	105	100%	141	100%

Table 2 provides the student counts and percentages for each major that comprised the participants of this study. The percentages of males and females were predominately male for both the business and non-business majors.

Table 2

Participants by Sex and Major

Class Standing	Business		Non-Business		Total	
	Major/Minor		Majors/Minor			
	#	%	#	%	#	%
Male	22	61.1%	66	62.9%	88	62.4%
Female	14	38.9%	39	37.1%	53	37.6%
Total	36	100%	105	100%	141	100%

*Note.* Each figure represents the number of persons in the category

### 3. Research Design

This case study research focused on the evaluation of instructional strategies. According to Harris (2017), seven elements separate case study research from other forms. Table 3 has been adapted to include how this study will align with the case study elements.



Table 3

## Elements of a Case Study (Adapted from Harris, 2017)

<b>Element</b>	<b>Description</b>	<b>This study</b>
The case	Object of the case study identified as the entity of interest or unit of analysis. Program, individual, group, social situation, organization, event, phenomena or process	Indiana university V246 class
A bounded system	Bounded by time, space, and activity. Encompasses a system of connections. Bounding applies frames to manage contextual variables. Boundaries between the case and context can be blurred.	Utilizing the spring 2019 observations and data
Studied in context	Studied in its real life setting or natural environment. Context is significant to understanding the case. Contextual variables include political, economic, social, cultural, historical, and/or organizational factors.	Traditional University classroom taught by one professor
In-depth study	Chosen for intensive analysis of an issue. Fieldwork is intrinsic to the process of the inquiry. Subjectivity a consistent thread—varies in depth and engagement depending on the philosophical orientation of the research, purpose, and methods. Reflexive techniques pivotal to credibility and research process.	Analysis of student performance in contrast with deep and surface approaches to instruction.
Selecting the case	Based on the purpose and conditions of the study. Involves decisions about people, settings, events, phenomena, social processes. Scope: Single, within case and multiple case sampling. Broad: Capture ordinary, unique, varied and/or accessible aspects. Methods: Specified criteria, methodical and purposive; replication. Logic: Theoretical or literal replication (Yin, 2014)	Course enrollment was open to all. Students enrolled in the course and data collected in the normal course of instruction were part of the study.
Multiple sources of evidence	Multiple sources of evidence for comprehensive depth and breadth of inquiry. Methods of data collection: Interviews, observations, focus groups, artifact and document review, questionnaires and/or surveys. Methods of analysis: Vary and depend on data collection methods and cases; need to be systematic and rigorous. Triangulation highly valued and commonly employed	Questionnaires, observations, and document reviews
Case study design	Descriptive, exploratory, explanatory, illustrative, evaluative. Single or multiple cases. Embedded or holistic (Yin, 2014) Particularistic, heuristic, descriptive (Merriam, 1998, 2009). Intrinsic, instrumental, and collective (Stake, 1995, 2006).	Single case, explanatory, descriptive and collective.

*Note.* Case study elements, adapted from “Case Study Research: Foundations and Methodological Orientations” by Harrison et al. (2017).

According to Chatterji (2003), the main differences between summative and formative evaluation is how the feedback is used. Formative evaluations are generally controlled by the instructor and target specific instructional issues. Whereas, summative evaluations are used to improve teaching and learning while the course is in progress. Fitzpatrick, Sanders, and Worthen (2010) stated that in practice, the distinctions between formative and summative evaluations are blurry. This case study design utilizes a formative evaluation lens due to its emphasis on improving the course (or system) being studied at the conclusion of the course.

#### **4. Data Sources**

Data was collected during the regular process of conducting the course. The first source included the syllabus survey concerning students' prior experiences with accounting and concerns prior to course enrollment. The results of this tool were used to answer the research question regarding students' learning goals. The school implements course/instructor evaluations known as the online course questionnaire (OCQ) each semester, allowing for additional instructor created questions. The results of the OCQ were compiled based on a 53% participation rate from both courses. Additional demographic information were obtained at the conclusion of the semester from the student records office, such as overall GPA and sex.

The school uses Canvas as its learning management system. Canvas is the interface through which students view announcements, access files and assignment instructions, upload assignments, view grades and communicate with the instructor. I utilized the Top Hat platform to publish an online text with questions to be answered for course credit as soon as a student completes the required readings. The school holds a contract with Top Hat to provide student polling, which integrates into the learning management system.

The data included three exams (27%), three homework assignments (28.5%), Top Hat text Q & A (12.9%), Top Hat polling lecture responses (8.6%), 10 Canvas quizzes (11.5%) and 16 in-class activities (11.5%). The teaching assistants, using a grading rubric, scored the homework and in-class activities. The exams and quizzes were scored by the learning management system.

The syllabus survey and online course questionnaires are a regular part of the school and course process. Consequently, this study was considered an exempt study. The exempt study application was submitted to Indiana University's Human Subjects Institutional Review Board (IRB) for the procedures, protocol and methods (see appendix A), and exemption was granted on June 6, 2019.

Student concerns and what they hoped to learn prior to the start of the course were obtained with a survey administered online during the first week of class, via the campus learning management system (Canvas). The course learning outcomes were outlined in the course syllabus, included as Appendix B. Student perceptions of the instructional strategies linked to their course performance were obtained utilizing the college's standard OCQ with additional instructor added questions at the end of the semester.

This study intends to help inform my teaching; this includes the use of instructional materials, instructional strategies and course design. I am serving as both the researcher and the instructor. Consequently, the students may have been apprehensive about disclosing negative responses in person, for fear of compromising relationships with the instructor and the possibility of damaging their grade. Interviews or focus groups may not have achieved the desired information, because the confidentiality of the responses would have been difficult to ensure

using such methods. Therefore, the OCQ, which was compiled by a third party, ensured respondent anonymity and was deemed more likely to produce truthful and constructive data.

All of the assessment questions for every item in the course were compiled into an excel spreadsheet by the graduate assistant of the course. The questions were labeled by their source (Online exam, homework, canvas quiz, Tophat Q&A, polling, in class activities, etc.) and type (multiple choice, essay, short answer, etc.). The spreadsheet was sortable and could be filtered. This data was collected to compile the ratings given by each of the three raters regarding whether the assessment question falls within one of six categories of Bloom's taxonomy (understand, remember, create, evaluate, analyze or apply). The raters were provided instructions that outlined action verbs typically used to determine where each assessment question fell in the revised Bloom's taxonomy. I did not complete a rating of the questions. Once the raters had provided their spreadsheets, I compiled them all into one document and applied a 2/3 rule. Those activities that fell in the "understand" and "remember" categories were grouped as surface learning. Activities that were categorized as "create, evaluate, analyze or apply" were considered deep learning. If two of the three raters chose a descriptor in the surface category it was labeled surface, If two of the three raters chose a descriptor in the deep category it was labeled deep.

**4.1. Grade point average (GPA).** Baldwin (1993) and Hill (1998) found GPA to be highly correlated with examination performance. For this study, therefore, the overall GPA prior to the course (based upon a 4.0 scale) was collected to analyze the mean scores on assessments. The data was partitioned between students with GPA above and below the median. This information provided for a richer description of the participants in the study and insight for some of the findings.

**4.2. Deep and surface instructional strategies.** The first rater for this study included the teaching assistant for the course under study. This assistant has served in this capacity for both the spring and fall semesters for two years and took the course during their first year at the university. Rater (2) holds a PhD in Higher Education Administration and has worked in the educational system since 2008. Rater (3) holds a master's degree in Library and Information Science and currently works as the Media Specialist and Educational Technology Instructor for a school district.

**4.3. Syllabus quiz (survey).** To determine the students' concerns prior to the start of the course, a survey was utilized referred to in this research as the "syllabus quiz," valued at five points. The learning management system which compiles information of this nature only provides the functionality under the category labeled quiz. The tool consisted of seven questions regarding material covered in the syllabus and two essay questions related to this research: "What do you hope to learn from his course?" and "What is your greatest concern in this course?" The survey was short and, on average, it took students approximately eight minutes to complete.

**4.4. Online course questionnaire (OCQ).** Thirteen questions from the OCQ were considered for this study, four of which were Likert scale questions utilizing a scale from one to five, with five representing strong agreement and one strong disagreement. This was used to rate the perceptions of respondents relevant to the guiding questions for the evaluation.

Nine questions were open-ended questions that provided an opportunity to describe in further details, the findings from the performance assessment score and to determine more specifics about the students' perceptions of the instructional strategies utilized.

**4.5. Top Hat polling and online text (Top Hat Text Q&A).** During class lectures, students were polled using the Top Hat platform. Students received credit for participation in polls for some questions as well as credit for correct answers. Additionally, a Top Hat online text with questions was utilized, providing students multiple opportunities to assess their learning from the readings. The Top Hat program graded these questions and the points earned were transferred into the learning management system on a weekly basis.

**4.6. Canvas quizzes.** Students were assessed weekly via multiple choice and matching questions on the content area discussed and practiced during the week. Students were given 30 minutes to complete these quizzes, which ranged from three to seven questions and made up 11.5% of the course grade. These quizzes were graded by the system and immediately reflected in the students' course grade. The instructor subsequently reviewed the quiz statistics with the class after the due date/time had passed. Using the central faculty information system, I exported each student's ID, name, major and grade level, and then exported the course grades on each individual assignment from the learning management system and removed student names once these two sources of data were synchronized. This provided the major, grade level and grade data information for each student.

**4.6. In-class activities.** A variety of peer-to-peer in-class activities were carried out to allow students to practice processes discussed during class. Notecard activities were conducted with either a notecard, blank sheet of paper or templates provided by the instructor. They were collected, and using a quick sampling of the cards submitted, the instructor discussed the responses received and contrasted them to the expected solution, providing immediate feedback to the students. The teaching assistants graded these activities, based upon a grading rubric

manually updated to the learning management system. These activities comprised 11.5% of the course grade.

**4.7. Exams.** The exams in this course were administered online, utilizing the learning management system Respondus Lockdown Browser®. This custom browser prohibited students from utilizing other applications during the exam. Each exam was comprised of multiple choice, short answers and matching questions covering course concepts. These exams were system graded and summed to 27% of the course grade.

**4.7. Homework.** The second portion of the exam was a take home exam/homework, where the students were required to submit Excel spreadsheets via the learning management system. This was referred to as homework in the course syllabus. These were graded by the teaching assistants, utilizing a grading rubric and represented 28.5% of the course grade. Table 4 provides the percentage of each course assessment tool utilized in the course.

Table 4

Assessment Tools Utilized for V246 and Percentage of Overall Grade

<b>Assessment</b>	<b>% of Course Grade</b>
Top Hat polling	8.6%
Top Hat text responses	12.9%
Canvas quizzes	11.5%
In-class activities	11.5%
Exams	27%
Homework	28.5%

## **5. Data Analysis Procedures**

Analysis and interpretation of case study takes place in an iterative manner. The researcher collects data, analyzes it to see what the data are saying (analysis), and seeks to understand what it means (interpretation). This process builds trustworthiness and provides an audit trail. While case study is characterized by methodological eclecticism, the centrality of contextualized deep understanding as the ultimate objective is recognized as key. (Bloomberg & Volpe, 2018, p. 105).

Case study is a methodology appropriate to scenarios in which it is inconceivable to distinguish the participant's context from the phenomenon's criterion (Yin, 2014). The works of Merriam (2009), Stake (1995) and Yin (2014) provided the definition source of how a case study was defined here. My choice of design stemmed from my desire to understand what was happening within my classrooms, in both an exploratory and explanatory nature. Case studies also occur within a bounded context or system. Furthermore, Bloomberg and Volpe (2018) stated that the "case study research produces a detailed description of a setting and its participants, accompanied by an analysis of the data for themes, patterns, and issues" (p. 95). Therefore, the case study was best suited, as I limited my study to one university course of which I am the instructor.

**5.1 Analysis of Syllabus Survey.** The student responses from the survey quiz were downloaded into Excel and placed on two different tabs within the same worksheet. The data was grouped by theme, next the percentage of responses that represent each theme was computed from the total responses received.

**5.2 Analysis of Online Course Questionnaire (OCQ).** Following the recommended process for coding of qualitative research (Yin, 2004), all student responses were examined and



coded for distinct ideas. Similar responses were then noted and grouped for analysis. I then identified themes in these groupings, noting the relevant and interesting low and high incidence responses. The data from the assessments (learner performance) and demographic information (knowledge group) were analyzed using descriptive statistics.

**5.3 Analysis of Assessment scores.** All assessment scores used in this study were pulled from student existing data in the course learning management system. Data was input into the system throughout the semester by the graduate and undergraduate teaching assistants for the course. This data provided the raw score (points) earned for each assessment by student. Using excel, a compilation of every student was created that summed total points by assessment type; exams, Top hat polling, Top hat text responses, homework, canvas quizzes and in-class activities. There were 350 possible course points. Points were converted to percentages for the linear regression model analysis. For this study, the mean scores for business majors and non-business majors for each assessment type was determined. Additional analysis provided detail regarding mean scores for each assessment type by sex, year, and grouped GPA (above mean GPA or below mean GPA).

**5.3.1 Exams.** Student individual exam scores were retrieved from the learning management system. There were three online exams; one assigned for each of the three sections of the course (Business, not-for-profit and Governmental). Each exam was comprised of multiple choice, short answers and matching questions covering course concepts. These exams were system graded and summed to 27% of the course grade.

**5.3.2 Homework.** Graduate assistants were provided a grading rubric to score each students submission online prior to inputting those scores into the learning management system. There were three homework assignments; one assigned for each of the three sections of the

course (Business, not-for-profit and Governmental). Homework represented 28.5% of the course grade.

**5.3.3 Canvas Quizzes.** There were 10 online quizzes valued at 5 points each. Students were assessed weekly via multiple choice and matching questions on the content area discussed and practiced during the week. Students were given 30 minutes to complete these quizzes, which ranged from three to seven questions and made up 11.5% of the course grade. These quizzes were graded by the system and immediately reflected in the students' course grade.

**5.3.4 In-class activities.** There were 16 in-class activities that also comprised (11.5%) of the students overall course grade. Students could also receive extra credit points in this assessment category, thus making it possible for a student to achieve more than 100%.

**5.3.5 Top hat text responses.** There were 9 chapters in the course required online text. Each chapter had embedded questions throughout the reading which was valued at 5 points per chapter.

**5.3.6 Top hat polling.** During class lectures, students were polled using the Top Hat platform. Students received credit for participation in polls for some questions as well as credit for correct answers. As an incentive to support peer-to-peer interaction, an additional bonus point was given to the entire class if 100% of the responses were accurate. Consequently, it was possible for students to earn more than 100% in this assessment category. The Top Hat program graded these questions and the points earned were transferred into the learning management system on a weekly basis.

## **6. Data Sources Informing Each Research Question**

**6.1. Research question 1.** Course learning outcomes were retrieved from the existing syllabus for spring 2019 and listed in a table as the first column. Mager (1962) stated that

learning outcomes provide a measure of whether the intended learning has occurred. The second column lists the instructional strategies utilized in the course. These strategies were compared to the strategies found in the literature review for substantiation of alignment. The alignment under review is whether the instructional strategies employed in the course are supported by the literature for the stated outcomes.

**6.2. Research question 2.** Student learning goals were retrieved from the existing data generated by the syllabus survey open-ended questions (Appendix C). The data was grouped by theme, which were compared to the learning outcomes outlined in research question 1. The percentage of responses that represent each theme was computed from the total responses received.

**6.3. Research question 3.** Instructional activities were coded as either deep or surface. These are umbrella terms used in this study to capture data so that it can be systematically analyzed. Using a rubric (Appendix D), three raters provided their assessments of each assessment question ask in the course. The raters chose one of the five categories in the appendix that was most predominantly supported by that question. Subsequently, I placed those assessments coded as either remember/understand under “surface” and items categorized by raters as apply/evaluate/create were coded as “deep.” If two or more of the raters characterized an item that I categorized as deep, it was coded as “deep” for the purposes of this study, and the same was done with the “surface” coding.

Next, a linear regression model was developed. The student data was aggregated as business and non-business, based upon existing course data and student records from the registrar’s office. Using Excel, scores from each assessment were summarized using the average and mode (most common) scores for the activities categorized as deep or surface. Dinsmore and

Anderson (2012) suggested a number of suggestions for future research on deep and surface processing as follows, "...in regards to measurement of deep and surface processing, two problems arose: the heavy reliance on self-report questionnaires and the paucity of validity evidence provided for these measures."

Cronbach (1971) outlined three types of validation procedures: content, criterion-related, and construct validation... Content validation refers to the process of using a small number of items on a test to infer to a larger domain of interest. Criterion-related validation refers to inferences from a test score to some other external behavioral variable. And, finally, construct validation refers to inferring from a test score to a psychological construct... (Dinsmore & Anderson, 2012, p. 502)

For this study, to address the issue of heavy reliance on self-report questionnaires, I have included the course performance metrics in addition to the questionnaire data. Cronbach (1971) stated that it is not the test that is validated but the interpretations of it. This study does not aim to determine behavioral or psychological positions (learning styles, etc.) of the students. Rather, it looks at whether assessments that are designed to engage rote memory (surface) or application/evaluation (deep) impact student's performance on assessments and course performance overall, based upon prior knowledge (business major/year). Numerous studies have supported the impact of GPAs on course performance, so student GPA data was obtained and utilized in evaluating the results.

Table 5 reflects the number of students above and below the median and if they were business or non-business majors. Most business majors (72%) had GPAs above the median, as compared to the non-business majors (42%).

Table 5

GPA by Major

	<b>Non-Business Major/Minor</b>	<b>Business Majors/Minor</b>	<b>Total</b>
Below Median GPA	61	10	71
Above Median GPA	44	26	70
Total	105	36	141

Table 6 outlines the statistical descriptions for the GPA scores of both business majors and non-business majors, showing business majors with the higher mean scores for this course.

Table 6

Summary of GPA Statistics by Major

	<b>Mean</b>	<b>Std. Dev.</b>	<b>Freq.</b>
Non-Bus Major/Minor	3.0170095	.46154768	105
Business Major/Minor	3.3333056	.50624787	36
Total	3.097766	.4914031	141

**6.4. Research question 4.** To determine the students' perceptions of instructional strategies, I used existing data gathered from the OCQ. Following the recommended process for coding of qualitative research (Yin, 2004), all student responses were examined and coded for distinct ideas. Similar responses were then noted and grouped for analysis. I then identified themes in these groupings, noting the relevant and interesting low and high incidence responses. The data from the assessments (learner performance) and demographic information (knowledge group) were analyzed using descriptive statistics. I have provided a table of instructor-added

questions as well as standard questions and how they tie to each research question (see Table 14). This will allow the readers of this evaluation to determine the applicability of the grouping used in the summary table provided.

Table 7 provides a visual depiction of the alignment of the various data used in this study with each of the four research questions.

Table 7

Research Questions, Alignment and Data

<b>Research Question</b>	<b>Impact Alignment</b>	<b>Data</b>
1. How aligned are the instructional strategies used in V246 with the stated learning outcomes?	Course learning outcomes	Syllabus, Online Course Questionnaire, In-class activities, Exams & Homework
	Instructional Strategies	Literature review
2. How aligned are student learning goals with stated learning outcomes?	Student learning goals	Syllabus & Syllabus survey
3. How does using surface and deep strategies in the course relate to student scores when examined by prior knowledge group (business major vs. non-business major)?	Surface instructional strategies	Top Hat polling responses, Canvas multiple-choice quizzes & in-class activities
	Deep instructional strategies	Homework & in-class activities
	Prior knowledge group	IU Registrar's office data
4. How do students perceive the contribution of instructional strategies to their learning?	Student perceptions	Online course questionnaire, syllabus survey & literature review
	Student learning goals	syllabus survey

*Note.* Research questions 1, 3 and 4 have multiple impact alignments that address the question.

## Chapter 4: Results

The findings of this study were organized according to the research questions.

### 1. Research Question 1

How aligned are the instructional strategies used in V246 with the stated learning outcomes? Course learning outcomes were retrieved from the existing syllabus for spring 2019 and listed in Table 8 as the first column. The outcomes for the course are:

- Explain problems using financial accounting terminology.
- Record daily transactions for business, nonprofit and governmental entities.
- Illustrate the basic procedures for adjusting, closing entries and summarizing the accounting records prior to the preparation of the financial statements.
- Students should be able to construct financial statements using GAAP based upon financial transactions and analyze the results of operations.

The second column of Table 8 shows the instructional strategies utilized during each week of the course. Although not an exhaustive list, instructional strategies often fall within general groupings such as active learning, group-based, assessment-based and organizational (or classroom management). A brief list of instructional strategies discussed in this paper are as follows:

- Guided reading
- Repetition/ Drill & Practice
- Polling questions
- Advanced organizers
- Instructional scaffolding/Connecting to prior knowledge
- Lecture/Demonstration
- Chunking/Classification
- Notecard activities
- Assessment: quizzes/exams/homework

The strategies listed in second column of Table 8, along with the V246 course weeks in which those strategies were utilized, were compared to the strategies found in the literature review for substantiation of alignment. The third column represents the author/year of the literature review with a brief statement of the instructional strategy the review recommends.

Table 8

Learning Outcomes, Instructional Strategies Employed and Literature Review Studies

<b>Course learning outcomes from Syllabus (Appendix B)</b>	<b>Week#/Instructional strategies utilized (Appendix B)</b>	<b>Literature review (Author/year, strategy covered)</b>
Explain problems using financial accounting terminology.	1–15/Guided reading	Buckhaults and Fisher (2011) complete assignments prior to class.  Borja (2005) review vocabulary from prior class to reduce cognitive load
	1–15/Lecture (Demonstration)	McKeachie (1999), Johnson, Johnson and Smith (1998), Cuseo (1998) and Costin (1972) lecture for integrating reading materials, modeling problem solving.
		Cooper & Robinson (2002) make large class seem small



	<p>3, 6, 8, 9, 13/Polling questions</p> <p>4/Chunking (Classification)</p> <p>2,9/Notecard activity</p> <p>1, 2,3,4 5, 6,7/Connecting to prior knowledge</p> <p>3, 4, 6, 8, 10, 14/Quiz</p> <p>5, 9, 15/Exam</p>	<p>through use of technological tools such as polling.</p> <p>Borja (2005) review vocabulary from prior class to reduce cognitive load</p> <p>Cooper and Robinson (2000), Kheng et al., (2015) repetitive model-practice-feedback loop</p> <p>Chickering and Gamson (1987) frequent opportunities to perform and receive suggestions for improvement.</p> <p>Cooper and Robinson (2000), Kheng et al., (2015) repetitive model-practice-feedback loop.</p>
<p>Record daily transactions for business, nonprofit and governmental entities</p>	<p>2–15/Guided reading</p> <p>6, 10, 11, 13/Lecture and demonstration</p> <p>5/Repetition (Drill and Practice)</p> <p>3,4,6–13/Polling questions</p> <p>2, 3, 10–14/Advanced organizer</p> <p>5, 6/Connecting to prior knowledge</p>	<p>Buckhaults and Fisher (2011) complete assignments prior to class.</p> <p>McKeachie (1999), Johnson, Johnson and Smith (1998), Cuseo (1998) and Costin (1972) lecture for integrating reading materials, modeling problem solving.</p> <p>Perry (1959), Kheng et al., (2015) considerable practice/repetition</p> <p>Cooper and Robinson (2002) make large class seem small through use of technological tools such as polling.</p> <p>Cooper and Robinson (2000), Kheng et al., (2015) repetitive model-practice-feedback loop</p> <p>Chickering and Gamson (1987) frequent opportunities to perform</p>

	<p>3, 14/ Canvas quiz</p> <p>4, 8 &amp; 14/Homework</p> <p>5, 9, 15/Exam</p>	<p>and receive suggestions for improvement.</p> <p>Cooper and Robinson (2000), Kheng et al., (2015) repetitive model-practice-feedback loop.</p>
<p>Illustrate the basic procedures for adjusting, closing entries, and summarizing the accounting records prior to the preparation of the financial statements.</p>	<p>2, 3, 4, 6, 13/lecture(demonstration)</p> <p>3, 4, 7, 12/Polling questions</p> <p>3, 6/Notecard activity</p> <p>6, 10–14/Advanced organizer</p> <p>3/Canvas quiz</p> <p>4, 8 and 14/Homework</p> <p>9, 15/Exam</p>	<p>McKeachie (1999), Johnson, Johnson and Smith (1998), Cuseo (1998) and Costin (1972) lecture for integrating reading materials, modeling problem solving.</p> <p>Cooper &amp; Robinson (2002) make large class seem small through use of technological tools such as polling.</p> <p>Chickering and Gamson (1987) frequent opportunities to perform and receive suggestions for improvement.</p> <p>Cooper and Robinson (2000), Kheng et al., (2015) repetitive model-practice-feedback loop</p>
<p>Students will be able to construct financial statements using Generally Accepted Accounting Principles (GAAP) based upon financial transactions and analyze the results of operations</p>	<p>4, 6, 7, 8, 13/lecture(demonstration)</p> <p>4/Repetition (Drill and Practice)</p> <p>6/Notecard activity</p> <p>6,7/Advanced organizer</p> <p>12/Canvas quiz</p> <p>4, 8 and 14/Homework</p>	<p>McKeachie (1999), Johnson, Johnson and Smith (1998), Cuseo (1998) and Costin (1972) lecture for integrating reading materials, modeling problem solving.</p> <p>Perry (1959), Kheng et al., (2015) considerable practice/repetition</p> <p>Chickering and Gamson (1987) frequent opportunities to perform and receive suggestions for improvement.</p> <p>Cooper and Robinson(2000) model-practice-feedback loop</p>

Based upon my review of the literature, spanning from 1959 to the present day, authors in multiple domains are pointing to the effectiveness of the strategies utilized in supporting comparable learning goals. This table illustrates that the strategies employed are aligned with the course objectives.

## **2. Research Question 2**

How aligned are student learning goals with the stated learning outcomes? Student learning goals were retrieved from existing data found within the syllabus survey. The major themes found were categorized using Bloom's revised taxonomy for the cognitive domain: (1) Remember (2) Understand (3) Apply (4) Analyze (5) Evaluate (6) Create. The learning outcomes generally included multiple cognitive processes, and these are noted in brackets in the learning outcomes category.

The percentages in Table 9 represent the comments made by students that reflected that category of learning goal. Additionally, I compared the percentage for each category for Business (B) and Non-business (N) majors. The majority of students stated goals that indicated that they were seeking to understand. Conversely, very few students had learning goals that fell within the remember category.

Table 9

Student Learning Goals by Business (B) and Non-Business (N) Majors/Minors

Student Learning Goals (Bloom's Revised Taxonomy)	%	Learning Outcomes
Remember	B-2% N-5%	(1) Explain problems using financial accounting terminology. [Remember], [Understand], [Apply]
Understand	B-54% N-46%	(2) Record daily transactions for Business, Not-for-profit, and Governmental entities. [Remember], [Understand], [Analyze], [Create]
Apply	B-31% N-41%	(3) Illustrate the basic procedures for adjusting, closing entries, and summarizing the accounting records prior to the preparation of the financial statements. [Remember],[Apply]
Analyze	B-13% N-8%	(4) Students will be able to construct financial statements using Generally Accepted Accounting Principles (GAAP) based upon financial transactions and analyze the results of operations. [Analyze], [Create]

These findings closely matched those from Bartley (2019) case study discussed in the student learning goals and concerns section. Although the sample size was extremely small in the Bartley study (7), many of the primary codes found during field interviews mimicked the theme findings I show in table 9 from the syllabus survey. An interesting finding was how similar the percentages were for each of Bloom's learning goals regardless of student major.

### 3. Research Question 3

How does using surface and deep strategies in the course relate to student scores when examined in terms of the prior knowledge group (business vs. non-business)?

- a. Is there a statistically significant difference in assessment type scores (online exams, homework, Top Hat text Q & A, responses utilizing polling technology, online Canvas quizzes and in-class activities) in terms of student majors (business vs non-business) and year (sophomore, junior, senior)?
  - i. H1: There is no statistically significant difference in assessment type with regards to student major and year.

To examine research question 3, a linear regression model was utilized for student scores of each assessment type. In this analysis, student performance (scores) on instructional activities were compared between both student majors (business vs. non-business). The results are presented in the form of main effects and the interactions among study variables. When a significant interaction was revealed, pairwise comparisons were performed.

Table 10 displays preliminary statistics (means and proportions) for the dependent variables (assessments) and independent variables (gender and GPA) for the business majors and the non-business majors. A two-tail p-value for the significance of the difference between the business and non-business means (t-tests) is presented in the conclusion.

Table 10

Preliminary Statistics: Means/Proportions for Business and Non-Business Majors without Consideration of Year or GPA.

<b>Variable</b>	<b>Business (n = 36)</b>	<b>Non-business (n = 105)</b>	<b>P = value</b>	<b>Conclusion</b>
THtext Q & A	80.25	71.76	.0520	Business majors scored higher
In Class				Non-business majors scored
Activities	86.75	91.28	.2584	higher
Online Exams*	90.54	84.40	.0003	Business majors scored higher
Homework*	91.82	82.51	.0043	Business majors scored higher
Top Hat Polling*	88.36	78.36	.0004	Business majors scored higher
Canvas Quiz*	95.31	91.33	.0378	Business majors scored higher
Final Points*	91.75	83.81	.0004	Business majors scored higher
Gender (male %)	61.1	62.9		No significant difference
GPA	3.33	3.02		Business majors had higher GPA

*Note.* \*Indicates a statistically significant difference found at the 99% or 95% confidence interval.

When analyzing the data to determine if business majors and non-business majors performed differently, I found that consistently, the mean scores were higher for business majors in all categories except in-class activities.

**3.1. THtext Q & A.** The analysis yielded a non-significant effect for the majors,  $F(1,139) = 1.29$ ,  $p = .2584$ . The main effect of year was non-significant,  $t(130) = 3.69$ ,  $p = .0568$ . The main effect of GPA was statistically significant, with  $F(6,134) = 4.85$  and  $p = 0.025$ , indicating that a student with an above median GPA scored 9.3% better than one with GPA

below the median. Sex, GPA and the year explained 14% of the variance in means between student scores for the Top Hat text Q & A.

**3.2. In-class activities.** The analysis for in-class activities yielded a non-significant effect for the majors,  $F(1,139) = 1.29$ ,  $p = .2584$ . The main effect of year was also non-significant,  $F(1,130) = .17$ ,  $p = .6793$ .

**3.3. Online exams.** The main effect of majors on online exams was significant at  $F(1,139) = 14.02$ ,  $p = .0003$ , indicating that the mean change score was significantly higher for business majors ( $M = 90.54$ ,  $SD = 8.17$ ) than for non-business majors ( $M = 84.40$ ,  $SD = 9.50$ ). The main effect of year was non-significant,  $F(1,130) = 3.80$ ,  $p = .0534$ . The main effect of GPA was statistically significant, with  $t(134) = 2.58$  and  $p = 0.011$ , indicating that a student with an above median GPA scored 4.6% better than one with a GPA below the median. Furthermore, female students performed 3.6% worse than males on online exams. Sex, GPA and year explained 15.7% of the variance in means between student scores for the online exams.

**3.4. Homework.** The main effect of the majors was significant,  $F(1,139) = 8.42$ ,  $p = .0043$ , indicating that the mean change score was significantly higher for business majors ( $M = 91.82$ ,  $SD = 16.26$ ) than for non-business majors ( $M = 82.51$ ,  $SD = 17.84$ ). The main effect of year was non-significant,  $F(1,130) = 1.87$ ,  $p = .1733$ . The main effect of GPA was statistically significant, with  $t(134) = 3.57$  and  $p < 0.0001$ , indicating that a student with an above median GPA scored 12.2% better than a below median one. Sex, GPA and year explained 15.6% of the variance in means between student scores for the online exams.

**3.5. Top Hat polling.** The main effect of the majors was significant,  $F(1,139) = 13.23$ ,  $p = .0004$ , indicating that the mean change score was significantly higher for business majors ( $M = 88.36$ ,  $SD = 12.02$ ) than for non-business majors ( $M = 78.36$ ,  $SD = 19.40$ ). The main effect of

the GPA was statistically significant, with  $t(134) = 2.84$  and  $p = 0.005$ , indicating that a student with an above median GPA scored 10.2% better than one below the median. Sex, GPA and year explained 9.4% of the variance in means between student scores.

**3.6. Canvas quizzes.** The main effect of the majors was significant at the 95% confidence interval,  $F(1,139) = 4.40$ ,  $p = .0378$ , indicating that the mean change score was significantly higher for business majors ( $M = 95.31$ ,  $SD = 9.03$ ) than for non-business majors ( $M = 91.33$ ,  $SD = 12.02$ ). The main effect of year was significant,  $F(1,130) = 4.62$ ,  $p = .0335$ , the difference between non-business juniors and business seniors was significant,  $t(130) = -2.93$ ,  $p = .0040$ . Furthermore, the difference between non-business seniors and business seniors was significant,  $t(130) = -2.15$ ,  $p = .0335$ . The main effect of GPA was statistically significant, with  $t(134) = 2.80$  and  $p = 0.006$ , indicating that a student with an above median GPA scored 6.2% better a student below the median. Sex, GPA and year explained 10.6% of the variance in means between student scores.

After controlling for sex, year and GPA, the model showed that there was only one statistically significant difference in the mean scores of business students, in relation to non-business ones. Business majors performed approximately 7.6% better than non-business majors in the Top Hat polling and questions asked during the lectures. This was the only assessment that does not cross the zero axis. Those items that do cross the zero axis indicate that the findings are not statistically significant. The gray bars indicate a 95% confidence interval for each estimate—the larger the confidence interval, the greater the uncertainty about the true estimated effect.



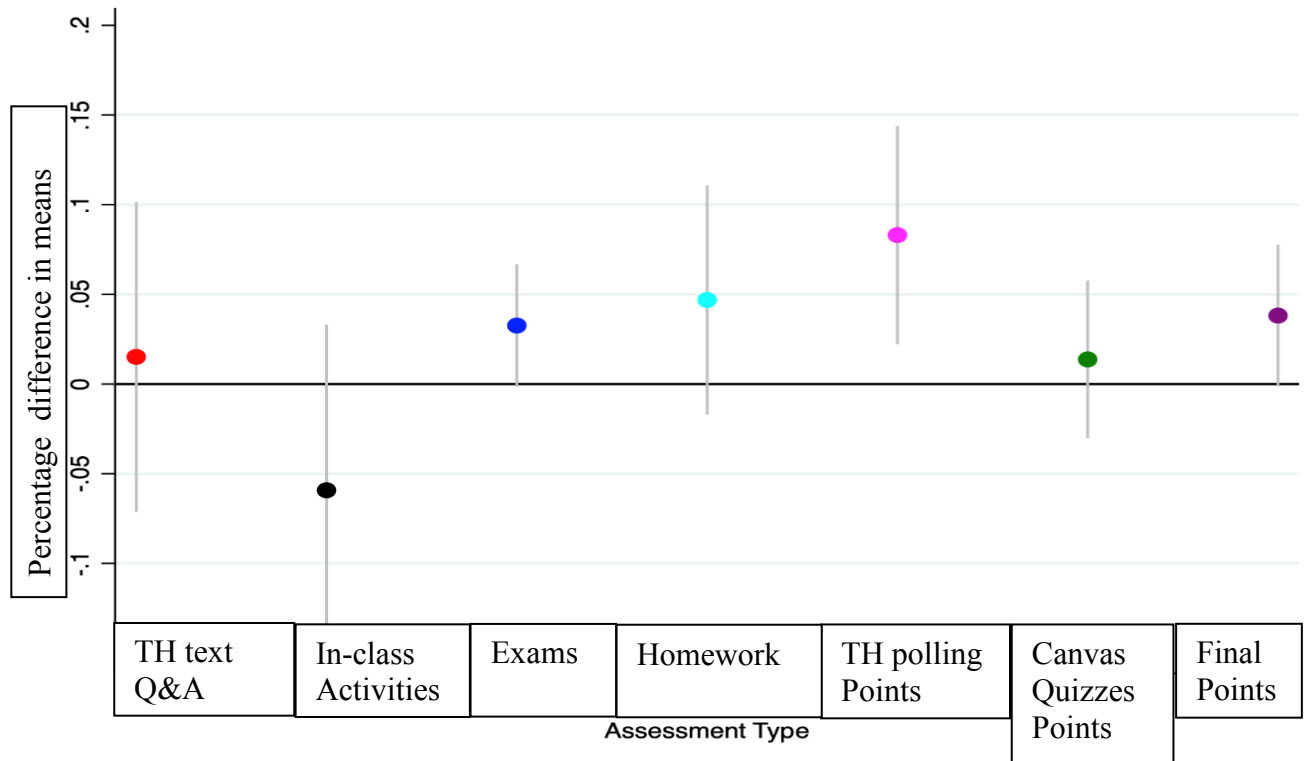


Figure 2. Difference of means by assessment type (controlled for sex, year and GPA)

Note: A linear regression was run controlling for sex, year and GPA. Each dot represents the mean score of business majors in comparison to that of non-business majors. The length of the error bar reveals the amount of uncertainty in the plotted value. A short error bar indicates that the value was more likely, whereas a long error bar indicates a wider dispersion of possibilities and less reliability. An interesting finding appears to be the similarity of the difference in means for exams and final points.

Table 11 shows the percentage of questions/activities representative of deep and surface instructional strategies. In this table, surface learning involves recalling and reproducing content and skills, and deep learning involves detecting patterns, applying knowledge and skills in new contexts or in creative ways. This is the only representation that outlines not only the weight of

each assessment but also the percentage rated as deep or surface, along with the means for the two groups under study.

Table 11

*Assessment Type, Mean Scores by Major and Percentage of Deep and Surface Approaches*

<b>Assessment</b>	<b>Point Value</b>	<b>Deep %</b>	<b>Surface%</b>	<b>Mean (B)</b>	<b>Mean (N)</b>
In-class Activities	45	83%	17%	86.75	91.28
TH polling	30	12%	88%	88.36	78.36
TH text Q&A	45	10%	90%	80.25	71.76
Canvas Quizzes	35	32%	68%	95.31	91.33
Homework	100	100%	--	91.82	82.51
Exams	95	45%	55%	90.54	84.40
Total	350	57%	43%	92.00	84.00

The highest mean scores were found in the Canvas Quizzes assessment, yet the percentage of surface approach questions were 68%; this contrasts with the lowest mean scores found in the TH text Q&A assessment which had the highest percentage, 90% of surface assessment questions.

#### **4. Research Question 4**

How do students perceive the contribution of instructional strategies to their learning? To determine what the students' perceptions of instructional strategies are, I used existing data gathered from the OCQ. The OCQ received 75 responses or 52% of the total students enrolled in the course. Unfortunately, due to a technical issue, the six instructor-added questions for one

section of the class (37 students) were not included in the reporting; consequently, the six instructor-added questions had a 27% response rate. I will summarize the findings from the six instructor-added questions with the 27% response rate first. Subsequently, I will provide the results of the remaining questions that had a 52% response rate.

**4.1. Six instructor-added questions (27% response rate).** Was there an activity completed during class that you felt particularly helped you meet a learning goal or instructional objective better than the others? If so, what was it and why? Forty-two (42) % of the students found the in-class activities, including the analogies used, advanced organizers and notecards to be the most beneficial. The Top Hat system received 19% of the responses; this system allowed students to be polled during class and was also utilized for guided reading outside of class. The third most popular activity among students was homework, 12% students found the weekly quizzes and instructor demonstrations used to be helpful. Three participants felt that no activities were helpful, and one chose not to respond to the question (15%).

Was there an activity completed during class that you felt particularly did NOT help you meet a learning goal or instructional objective? If so, what was it and why? The largest percentage (71%) of respondents felt that there were no activities that were not helpful, and 16% felt notecards and the weekly Canvas quizzes were not helpful. The remaining 13% of students voiced concerns over homework, in-class activities and the lecture delivery.

**4.1.1. Remember.** Another aspect of learning involves memorizing facts and procedures and being able to retrieve that information in its original form for later use. How often do you feel you utilized this approach for in-class activities, quizzes, homework assignments or exams? The largest percentage (88%) of respondents felt they used memorization for the course. Conversely, 8% indicated that they did not memorize at all, 4% chose not to answer.

**4.1.2. Apply.** One aspect of learning involves applying what was learned in-class to new information or situations. How often do you feel you utilized this approach for in-class activities, quizzes, homework assignments or exams? 73% students that responded to the question about application, feeling they did apply what was learned in-class to new situations or new information throughout the course, 19% felt it was not very often and 8% felt they did not apply at all.

**4.1.3. Analyze.** During the nonprofit section of the course, you had an assignment to find a recently published article about a nonprofit organization and determine its type (voluntary health and welfare organizations, hospitals, colleges/universities or other nonprofits) and why you categorized it as such. What did you learn from this activity as it relates to the course outcomes or your own learning goals? 83% of respondents felt they learned how to analyze from this activity, 17% felt they did not learn from this assignment with one citing they were a nonprofit major who was already familiar with the organization type. Two others felt that it seemed too easy and the remaining two chose not to answer.

**4.1.4. Create.** During the governmental portion of the course, you were asked to record the budget on a notecard. How did this activity assist you to meet the outlined learning outcomes? 82% of respondents felt that recording a budget activity helped achieve the create cognitive process goal; 18% felt they did not learn from this assignment, one cited that they did not receive adequate instruction for completing the task and the remaining respondents did not provide comments.

**4.2. Online course questionnaire responses for student perceptions of instructional strategies (52% response rate).** There were three open-ended questions that the students could

use to provide their perceptions of instructional strategies for the course. The questions were as follows:

- What did you like most about this course and instructor?
- What did you like least about this course and instructor?
- Do you have additional comments and/or suggestions to offer the instructor for the next times/he teaches this course?

The largest percentage (38%) of the feedback for these three questions was attributed to instructional strategies. Based upon analysis of the feedback received, students' perceptions of both the negative and positive viewpoints focused on the delivery of the lectures and utilization of Top Hat as a polling system and online text. In response to what they liked most about the course/instructor, one student commented, "Lectures were generally interesting and engaging. I feel the Top Hat questions help ensure that I was understanding the concepts from the lecture." In contrast, another student on what they least liked about the course/instructor stated, "More stories than learning." Another student commented about utilization of the polling system, "I only have one minute to answer questions from Top Hat." The most encompassing feedback came from one student who stated,

I liked that this course had a lot of opportunities for points. There was never too much or too little work at one time. The assignments were spread out well. Also, I liked that we went over all the assignment in-class.

Another student commented,

I suggest keeping doing what you do! This year was my first year using Top Hat, and it was an excellent tool since the slides for classes are posted there, homework/readings are there, everything you need is in one location.

This statement was in stark contrast to another student who stated, “The reliance on Top Hat enables various technical complications which can lead to inaccurate representations of the effort applied to the course. There are most definitely better ways to receive the benefits it creates.”

Other concerns of students were about the assessments, such as the difficulty of exam questions, restrictions placed upon utilizing web sources during exams, instructor expectation for students to apply information provided during lecture and demonstration while in-class. Another student perspective regarding in-class activities was,

I felt like I never had a full grasp on the concepts before we moved on to the next thing or turned in a graded assignment on them. I think having more in-class examples that we work through as a class for no grade instead of watching the professor go through them would be beneficial to most students.

Additionally, two questions utilized a Likert scale. Table 12 outlines how each section of the course responded to the question and the median score for the course along with standard deviation.

Table 12

*Online Course Questionnaire Likert Results*

<b>Likert Question</b>	<b>Response Count</b>	<b>Very Effectively/ Effectively (4/3)</b>	<b>Somewhat effectively (2)</b>	<b>Not at all Effectively (1)</b>	<b><i>M</i></b>	<b><i>SD</i></b>
How effectively did	39	30	8	1	3.1	.8
out-of-class work	38	32	6	0	3.3	.7
(assignments, readings, practice, etc.) help you learn?						
Total	77	62	14	1		

<b>Likert Question</b>	<b>Response Count</b>	<b>Strongly agree/agree (5/4)</b>	<b>Undecided (3)</b>	<b>Strongly disagree/disagree (2/1)</b>	<b><i>M</i></b>	<b><i>SD</i></b>
I learned a lot in this	41	28	6	7	3.8	1.2
course	38	32	6	1	4.2	.8
Total	79	60	12	8		

A summary of the information for the results of the Likert scale shows that 98% of students felt the out-of-class work helped them learn effectively or very effectively; 75.9% of students stated that they learned a lot from the course.

## Chapter 5: Discussion, Contributions to Teaching and Conclusions

### 1. Key Findings

The purpose of this study was to improve my teaching, determine the impact of a variety of instructional techniques and reflect upon how the changes I make in the classroom affects students' learning. Bloomberg and Volpe (2018) stated,

In case study research, the researcher reports the meaning of the findings—that is, a detailed analysis of themes and the overall lessons learned from the bounded case or cases, which can be an event, process, program, or individual. The findings are typically reported in a narrative manner to include extensive samples of quotations from participants. Findings are presented in such a way to illustrate a response to all research questions. (p. 109)

**1.1. Deep vs. surface strategies.** The percentage of assessment questions categorized as a deep approach (analyze, evaluate, apply and create) was higher than what I had planned for this elements course. This elements course was created to provide non-business students exposure to the basic accounting terminologies, assumptions and concepts for the three forms of operations: business, nonprofit and governmental (state/local). It is not a course that is intended to help students develop a complete understanding of any one organization but instead provide a foundation for the next level courses. Students' course grades weighted more heavily on the results of their deep approach assessments (57%). Nevertheless, students, regardless of their majors, performed with mean scores in the high 80s and low 90s.

**1.2. Major vs. non-major scores.** I had hoped that as a result of the instructional methods I had employed, there would be no significant differences between the assessment scores due to students' majors. The results of a robust linear regression (controlling for



GPA/gender/year) indicated that only the polling assessment had statistically significant differences in favor of business majors. Polling was the assessment activity that occurred during the lecture, with students given approximately one minute to respond.

Although not statistically significant, the mean scores of In-Class activities for non-business majors/minors were higher than the mean scores of business majors/minors. Also, students' scores on questions incorporated into their pre-reading assignments, 'THTextQA', were the lowest mean, regardless of the major. The pre-reading and related questions were intended to guide the students in determining relevant facts that require their attention. The highest assessment means was reported in the 'Canvas quiz category regardless of the students' majors.

## **2. Research Question 1**

The analysis confirms that the instructional strategies used such as lecture/demonstration, guided reading assignments, frequent quizzes with accompanying feedback, and in-class notecard activities support the stated learning outcomes of the course. Throughout the course, assessments are also utilized as an instructional strategy. Specifically, Reigeluth's direct instruction model points to continual assessment; before, during and after instruction as an instructional strategy to improve learning.

### **2.1. Learning outcome 1.** *Explaining problems using financial accounting terminology.*

The ability to speak the 'language of business' requires that students develop vocabulary in the accounting and business domain. Reading supports vocabulary building and increases student comprehension. Guided reading assignments are provided every week as a strategy for first exposure to the students. In order to assess whether students completed the guided readings, students were asked questions throughout each chapter. Unfortunately, these assessments had

the lowest scores of both business and non-business majors. According to Borja (2005), vocabulary acquisition is a crucial component to students' preparation. Borja (2005) also saw vocabulary acquisition as a critical component to students' ability to comprehend the material. Furthermore, in-class activities such as "developing analogy-based exercises," and "developing example-based exercises" (Borja, 2005, p. 29–30) were outlined as successful instructional strategies to facilitate comprehension. Both vocabulary building activities and in-class activities were incorporated in this study. Due to the low scores, where some students indicated that they forgot to complete the assigned questions within the reading, I plan to input a direct link placeholder in the learning management system that reminds students to complete the readings prior to the class in which lecture and in-class activities will occur. Students with grade anxiety may feel that asking them to read and answer questions before it is discussed in the classroom is an unfair practice; consequently, this component will be based upon completion and not accuracy.

**2.2. Learning outcome 2.** *To record daily transactions for Business, Not-for-profit, and Governmental entities*, was aligned with activities such as the lecture/demonstration and practice/feedback strategies employed throughout the course. The results of these activities can be seen in the assessments labeled THPolling, Canvas quizzes, and in-class activities. Lecture/Demonstration was generally the first step in communicating the process of recording transactions. Based upon cognitive psychology, mimicking was the first method of learning. The literature widely establishes lecture for integrating reading materials and modeling problem solving (Costin, 1972; Cuseo, 1998; Johnson, Johnson & Smith, 1998; McKeachie, 1999). Polling activities occur for this outcome beginning in week 3 of the course and continue through week 13. Notecard activities that allow students opportunities to practice creating transactions

occur during weeks 3, 6 & 9. The in-class activities utilized templates, which were provided to students starting in week 2, to support students in organizing their thinking and provide parameters for expectations. Within the literature review on cognitive load theory, the authors posited that instruction should focus on practice (Kirschner & van Merriënboer, 2013). Although repetitive practice was supported widely in the literature (Driscoll, 2007; Perry, 1959), most emphasize the additional necessity for timely and frequent feedback, which polling provides, to produce the best retention in student comprehension. (Chickering & Gamson, 1987; Cooper & Robinson, 2000; Kheng et al., 2015). Further, polling supports students by making a large class seem small (Cooper & Robinson, 2002).

**2.3. Learning outcome 3.** *To illustrate the basic procedures for adjusting, closing entries, and summarizing the accounting records prior to the preparation of the financial statements.* The analysis confirms that instructional strategies such as scaffolding are necessary components to move students from adjusting and closing entries (procedural) to summarizing and then financial statement creation. Langer & Applebee (1986) provide a list of components necessary for effective scaffolding instruction: ownership; “[learners] must see the point of the task” (p.185); appropriateness; “instruction builds on... skills the students already have, and helps them to accomplish tasks that they could not otherwise complete on their own” (p.186); structure; “tasks produce a natural sequence of thought...providing effective routines for the students to internalize.” (p.186); collaboration: “recast student efforts without rejecting what the students have accomplished on their own” (p.187); and transfer of control; allowing the learner to complete similar tasks without further help.

Appropriateness, as defined above, can be associated with a students’ zone of proximal development. The zone of proximal development is defined as the area in which “actual

developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (Vygotsky, 1978, p. 86). In the V246 course, scaffolding occurs by first providing all students access to the guided reading questions (completed prior to attending class) with applicable cues. The structural component of scaffolding occurred during class; students were provided in-class activities that utilized the information from the pre-class reading and were given the opportunity to enlist the assistance of peers (a version of think-pair-share). Additionally, polling was done to engage students, during the lecture, which was built upon information from the pre-reading and in-class activities; which also allows for peer interaction (collaboration). After class, students were given an online quiz to provide opportunities to build the confidence of the learners. The homework assignment, which was individual and does not allow for outside of assistance of any kind represented the assessment of how well students could synthesize the pre-reading, lectures, in-class activities, to demonstrate their understanding and transfer control to the students. Bruning, Schraw & Norby (1990) suggest the best method for avoiding learner burnout (cognitive overload) is the presentation of new information in the context of knowledge already available to the learner. Lectures and demonstration provided an opportunity to put student readings into context. The pre-reading along with in-class activities were strategies incorporated into the weekly structure to help learners incorporate new information.

**2.4. Learning outcome 4.** *To construct financial statements using Generally Accepted Accounting Principles (GAAP) based upon financial transactions and to analyze the results of operations.* The literature supports that instructional strategies such as demonstration, scaffolding, connection to prior knowledge, and practice and are effective strategies for helping

students develop the skills necessary to demonstrate this learning outcome. Several of these strategies result in a student-centered environment designed to improve the skills learners utilize to remain focused on difficult and new tasks. The homework assessment was the primary method utilized to determine whether students have mastered this learning objective throughout the course and supports that the instructional strategies employed are aligned with the learning outcome.

### **3. Research Question 2**

Dull et al. (2015) posited that a combination of mastery and performance goal motivations, rather than a singular perspective, may provide better outcomes related to course grades. The study defined a mastery goal orientation as consistent with a deep approach and a performance goal orientation to be consistent with a surface approach. To determine alignment, I utilized Blooms' revised taxonomy framework. Contrary to my expectation of student goals for the course, both major and non-major students ranked memorization lower than any other category; 2% for business major/minors and 5% for non-business majors. Student goals that were classified as 'remember' were those when students' indicated they planned to use memorization or wanted to retain information learned.

**3.1. Learning outcome 1.** *Explaining problems using financial accounting terminology.* 'Remember', 'understand' and 'apply' are the taxonomy that are relevant to components in the first learning outcome. Consequently, students' learning goals and the first course learning outcome has the highest percentage of alignment; business majors reporting at 87% and non-business majors at 92%.

Students' reported they expected to 'understand'; specifically, they indicated they wanted to understand basic accounting principles for the non-business majors and understand

governmental and not-for-profit accounting for the business majors; in contrast to the Bartley (2019) study in which she stated that student expectations differ between business majors and non-business majors. When coded by themes, my students' actually reported expectations that were surprisingly similar between majors and non-majors. Other items that fell under the theme of 'understand' were when students' indicated they wanted a great grade (performance goal), to learn from the sharing of instructor experience, and to gain personal financial understanding. Personal financial understanding could be considered 'apply' if the students intended to take the information about business, not-for-profit, and governmental accounting and apply it to their own financial picture.

**3.2. Learning outcome 2.** *To record daily transactions for Business, Not-for-profit, and Governmental entities.* The second level of student goals was to develop or improve skills in accounting that was placed in the taxonomy as 'apply'. Business students indicated a smaller percentage (31%) of the student goals that also fell under the 'apply' as compared to non-business majors (41%). These category themes included the ability to develop effective study habits, future application of content and develop or improve skills in accounting.

**3.3. Learning outcome 3.** *Illustrate the basic procedures for adjusting, closing entries, and summarizing the accounting records prior to the preparation of the financial statements.* Student goals from learning outcome# 2 also apply to this learning outcome, as this is the next step in the process of developing skills in accounting. Additionally the need to 'analyze' is required. Generally, when students get to this outcome they are more comfortable with the foundational data and begin to analyze differences and similarities between the account title categories (vocabulary). Students' goals that aligned with this outcome was to learn the differences/similarities in the relationships of accounting concepts with other areas. The 'apply'

and ‘analyze’ students’ goals were expressed by 44% of the business majors and 49% of the non-business majors.

**3.4. Learning outcome 4.** *To construct financial statements using Generally Accepted Accounting Principles (GAAP) based upon financial transactions and analyze the results of operations.* This learning outcome represents the final step in the financial accounting cycle and was themed as ‘create’ in Blooms’ revised taxonomy. There were no student goals directly coded as ‘create’. Students’ goals such as ‘understanding basic accounting principles’ and ‘improve/develop technical skills in accounting’ indirectly include the ability to ‘create’. A student’s ability to record a journal transaction, will require that they recall correct vocabulary from memory and then apply generally accepted accounting rules, to ‘create’ the journal. Having students create their own transactions and subsequently, have a peer journal the peer created transaction, during in-class activities demonstrates this dynamic. Financial statements represent a summary tool of all the journal transactions. To create a financial statement in accordance with GAAP; a student must ‘remember’ the format of each statement, ‘understand’ and ‘analyze’ the account titles within the trial balance to determine the correct category, and ‘apply’ GAAP to ‘create’ the statement.

#### **4. Research Question 3**

How does using surface and deep strategies in the course relate to students’ scores when examined by prior knowledge group (business vs. non-business)?

My personal theory of instruction is grounded in learner-centric activities. Consequently, the instructional methods used in my classroom combine the presentation of major concepts using traditional lecture and demonstration with active learning techniques that engage students in the course material. As outlined in my assumptions, I surmise that surface learning was foundational

for deep learning. Alexanders' (1997) model looks at the multidimensional aspect of domain learning (MDL). He posits that learners depend primarily on surface-level strategies to build subject matter knowledge when they are acquiring new information (Murphy and Alexander 2002). As cited in Dinsmore & Alexander (2012), subject matter knowledge "encompasses both domain knowledge (i.e., breadth of knowledge one possesses of a target domain) and topic knowledge (i.e., the depth of knowledge about a domain-specific concept)" (p. 508). This particular model is of interest because it states that a learner does not utilize a 'fixed' way to learn, in fact it is stated that the type of approach a learner will use will shift between deep and surface processes based upon "individual characteristics...that are likely to change over time." (p. 508).

Total points for each assessment, mean scores by prior knowledge group along with the raters' assessment of whether the questions were representative of deep and/or surface instructional strategies are represented in Table 11. This section will summarize the results by type of assessment of the orientation of the questions (deep vs surface), and performance by prior knowledge group (major vs. non-major).

**4.1. THTextQA.** Represents the guided questions students answer within the online text before class. These questions represent 13% of the students' overall course grade. THTextQA was where the lowest mean scores for both business and non-business majors originated. These questions were determined by the raters to be 90% surface and 10% deep approach to instruction.

**4.2. THPolling.** Represents the interactive polling questions students answer during the face-to-face lecture. These questions represent 8.6% of the students' overall course grade. Students' perception of their learning was greatly impacted by this activity. THStudentResp were determined by the raters to be 88% surface and 12% deep approach to instruction. Business



students with above median GPA have a lower mean score than their below median GPA counterparts for this type of assessment.

**4.3. In-class activities.** Entailed 13% of the students' overall course grade. These activities were commonly listed as positive experiences for students regarding their perception of their learning in the course. The raters assessed this category as 83% deep and 17% surface approach to instruction. This was the second of the two assessment categories where business students with above the median GPA had a lower mean score than their below the median GPA counterparts.

**4.4. Canvas quizzes.** Represented 10% of students' scores and was also the category with the highest mean scores for both business and non-business majors. These quizzes were due after the class lecture and were utilized to determine rather students maintained an understanding of the concepts outside of class. The raters assessed the questions in this category as 32% deep and 68% surface instructional strategy.

**4.5. Homework.** Represented 28.6% of the students' overall course grade and were treated as take-home exams. The raters assessed this category as 100% deep instructional strategies. Homework assignments were the 2nd highest mean scores for business majors.

**4.6. Exams.** Made up 27% of a students' overall course grade. The raters assessed this component as 45% deep and 55% surface. After running a linear regression that parsed the information between GPA, sex and year. A statistically significant difference was revealed for sex in only this category of assessment  $t = -2.26, p < .026$ . Female mean scores were 3.6% lower than male participants were.

Overall, the raters assessed the questions of the course as being 57% deep and 43% surface approaches. Students with below average median GPA scores perform similarly for both

business and non-business majors. This finding supports the changes in instructional strategies employed from primarily lecture-based and heavily weighted exam assessments to multiple in-class, out of class assessments, group work, and individual assignments that build upon concepts learned from each class session focused on relevance and comprehension.

Although preliminary statistics revealed significant differences in online exams, homework, TH polling and Canvas quizzes, once I ran a linear regression and controlled for GPA, sex and year; there was only a significant effect in the polling assessment category. Contrary to expectation, students' scores were lowest for both business ( $M=80.25$ ) and non-business majors ( $M=70.76$ ), in the assessment category (Top Hat Q&A). This category has the highest percentage (90%) of surface approach questions (memorization, rote learning). I expected students to score highest in this category since students had the flexibility to answer these at their own pace within a period of 2-3 weeks. Unfortunately, many students failed to complete the assigned readings and accompanying questions, citing the need for additional reminders of this component of the course.

Conversely, students' performance was highest for both business ( $M=95.31$ ) and non-business ( $M=91.33$ ) majors, in the assessment category (Canvas Quizzes). This category was determined by raters to be 68% surface and 32% deep. Similar to the Top Hat Q&A students could answer these questions by a set due date. Unlike the Top Hat Q&A, all canvas quizzes must be completed in less than 30 minutes once started. Generally, I would verbally remind students of those quizzes at the completion of the lecture since the intent was to assess their understanding after the lecture.

The negative connection between prior knowledge and instructional strategies was exhibited in 'the expertise-reversal effect' (Kalyuaga, Ayers, Chandler & Sweller, 2003). This

effect asserts that learners with low prior knowledge learn more from studying examples than from solving the equivalent problems and that this pattern switches for learners with higher prior knowledge. I was able to see this effect in my study in the ‘in-class activities’ results. Although not statistically significant, business majors with a GPA above the median performed 14% worse than business students with GPA below the median performed.

#### **5. Research Question 4**

According to Starr (as cited in Gibbs & Simpson, 2005), students prefer coursework over exams and reported that 90% of students from four departments preferred half or more of their scores to come from coursework and 56% preferred their scores come from coursework alone. Students consider coursework to be fairer than exams and to measure a greater range of abilities than exams (Kniveton, 1996). The course in this study has 46% of the overall students’ grade tied to coursework; this amount could be as high a 74.5% if we consider homework coursework. Homework was treated like a take-home exam in that students are not allowed to ask the instructor or other people for assistance; students are expected to use a computer, course templates and notes for completion of homework.

In analyzing students’ OCQ responses using Bloom’s taxonomy of learning, 88% of those who responded felt many activities focused on their ability to remember. Similarly, 74.5% of respondents on the survey at the end of the semester stated that they learned a lot from the course. Given that ‘remembering’ was the lowest goal for both business and non-business majors (2% & 5% respectively), I can see why some students may have felt like they did not learn a lot.

The most prominent goal as stated by both business and non-business students was to understand basic accounting concepts and improve/develop their technical accounting skills. The results show that at the end of the course, 73% of respondents felt the instructional

strategies helped them learn to apply their learning, 83% felt the strategies contributed to their ability to analyze, and 82% felt the activities provided helped them learn to create.

Students had many comments on the lecture delivery and content as well as the use of the polling system, Top Hat (TH). In reviewing the comments made on lectures, eight comments were negative compared to sixteen positive ones. Negative comments stemmed from students not seeing the relevance or connection between stories being told and the topics on the agenda. Comments such as, “Often we got off topic from the main objectives that we were supposed to be learning so students and myself would be confused on the organization of lecture” illustrate this feedback. In reviewing the comments made on the use of TH, five comments were negative compared to nine positive ones. Another comment that supported the variety of instructional strategies employed was,

I enjoyed the fact that this course was mostly done online. I also liked the use of Top Hat in this course. I did not feel as if I were doing busy work in this class. Most assignments we did were applicable to something we were actually learning in a real-life way.

Professor McCaster used class time effectively while reinforcing information and not overloading every class with too much.

It was echoed in the comment from another student,

I loved how the professor focused a lot of the class on Top Hat and canvas, took a lot of pressure off of getting by every assignment. Really showed she cared about the class and her students. Motivated us to learn and wanted us to care about the class.

Comments made regarding in-class activities included, “Some of the out of class activities I didn't feel like assisted me much in learning the material but I will say it was good practice depending on the activity.” The two six instructor-related questions that were intended

to delve into this topic included: *Was there an activity completed during class that you felt particularly helped you meet a learning goal or instructional objective better than the others? If so, what was it and why?* In addition, *Was there an activity completed during class that you felt particularly did NOT help you meet a learning goal or instructional objective? If so, what was it and why?* Seventy-one percent of respondents felt that none of the activities were not helpful. This was contradicted by 15% of respondents that felt there were no activities that were helpful in meeting a learning goal or instructional objective. Given the small response rate for the instructor-added questions, this finding cannot be projected as representative of the course as a whole.

## **6. Contributions to My Teaching**

In reflecting on my research agenda, three articles really helped me shape my epistemology (nature of knowledge) and pedagogy (style of teaching). The articles that influenced my personal instructional theory included:

(1) *Introduction to Instructional Design: The Systematic Design of Instruction (7th ed.)* (Dick, Carey & Carey, 2009). The Dick and Carey model endorses learner centric teaching by being supportive of a variety of student perspectives to build learner self-efficacy. The inclusion of a variety of active learning techniques allows me to experience limitless forms of creativity in instruction, thus marrying the Dick and Carey model with learner centric methods.

(2) The second resource was “Trends in Accounting Education: Decreasing Accounting Anxiety and Promoting New Methods” (Buckhaults & Fisher, 2011). This paper identifies sources of anxiety for both students and teachers of accounting courses and provides suggestions for overcoming those anxieties. The article begins by defining accounting based upon Warren, Reeve, and Duchac (2007) as “the language of business.” (p. 7). Buckhaults and Fisher identify

accounting as a subject that is as “difficult as learning a foreign language.” (p. 32). I chose this article because it provides a definition of accounting that spoke to the area that most students struggle with language. This article also ties into the need for methods of teaching other than traditional lecture and worked problems which sets the stage for the use of active learning techniques.

(3) “Energizing Your Teaching: A View from Deep in the Trenches” (Cunningham, 1999). Billie Cunningham begins by discussing how students have an issue relating to accounting material, and how their immediate fear of failure in the motivator for the kind of learning they will do. After discussing how lectures are less effective teaching methods for deep learning, but more effective for disseminating large amounts of information that may be too complicated for students to understand simply by reading the texts he lays out how he energizes his teaching. Cunningham found that group work allows students the opportunity to brainstorm, evaluate proposed solutions, choose a preferred solution, and “teach” each other. This facilitates a reduced pressure to perform individually and facilitates cooperative learning groups. This article pinpoints how different methods of active learning fits within the cognitive learning style of students and helps align the needs of nonbusiness majors in an introductory accounting course to those of the instructor.

This study helped me to reflect upon what my personal theory of instruction looks like, its theoretical foundations and how my instruction can be revised. The major elements of learner-centric teaching include constructivism, cognitive psychology, and active learning techniques (i.e. practice, scaffolding). These elements were reflected during this paper and directly tie to my personal library and reflection included herein. To begin, we must revisit the conditions under which I design instruction.

I previously conducted a literature review that revealed several important findings on instruction of non-business majors in an introductory accounting course. The instructional methods used in my classroom are somewhat eclectic, combining the presentation of major concepts using traditional lecture and demonstration with collaborative and active learning techniques that engage students in the course material. The inclusion of a variety of active learning techniques allows me to experience limitless forms of creativity in instruction, thus marrying the Dick and Carey model with learner centric methods. Several of the findings supported and challenged my methods of instruction.

**6.1. How this study supported my personal theory of instruction.** Reflecting on Instructional Theory in the cognitive domain, according to Walberg (1999) the selection of objectives and methods of instruction must be "adapted to the background and skills of the learners" (p.79) so that they can master the curriculum objectives. According to Reigeluth & Carr-Chellman (2009), one characteristic of direct instruction is that essential content should be taught using active presentation by the instructor. During the presentation phase, direct instruction incorporates a "constant assessment of student understanding before, during, and after the lesson" (Reigeluth & Carr-Chellman, 2009, p.80).

My positionality in this research is directly related to my personal theory of instruction and provides a lens through which issues such as removing barriers, providing support, and incorporating lived experiences can be viewed in the classroom. The variety of instructional strategies employed parallels what has been supported by research regarding African American female faculty in the United States. One study surveyed 13,499 faculty from 134 institutions to determine if faculty of color engage students in ways that are significantly different than their White counterparts. The study posited that "Faculty of color (from all

racial/ethnic groups) employ active and collaborative learning techniques with greater frequency than White faculty. Even after all controls are included, the effects for faculty of color are quite substantial... Women also employ these techniques with greater frequency than men.” (Umbach, 2006, p.333).

The TH text Q&A (pre-assigned reading before class), Polling (interactive during class), and Canvas Quizzes (assessments after class) follow this aspect of direct instruction. These three assessment types make up 33% of the students’ overall course grade and were determined by the raters to be 82% surface approach and 18% deep approach. Because V246 is a course designed to expose students to basic accounting concepts, as outlined in the four learning outcomes, surface approaches are considered the predominant method to provide learners with that foundation.

## **6.2. Modifications I intend to make to the course design and instructional strategies.**

The results revealed that students’ scores suffered when they did not receive repetitive prompting of expectations related to assigned readings and questions prior to class. The introduction of an “entrance ticket” could be one way to address this issue by having students submit a notecard of two quiz questions along with the correct response that draw on information from the assigned readings. A second area was how some learners perceived the storytelling method of instruction. Specifically, what steps I can take to alter that perception and assist the learners to building the bridge of understanding with their own informal knowledge. The introduction of having students provide metaphors or short stories illustrating major concepts for that session may prove beneficial.

The final modification to the course structure will be the weighting of the homework/exams for the course. Fifty-five percent of the students’ overall grade was



determined based upon three homework assignments and three exams; of which the raters indicated are 73% deep and 27% surface approach. A better alignment with the course would be to reduce the impact of these assessments on the overall grade. Facilitation of this goal will occur by both reducing the points offered for the homework assignments and simultaneously increasing the number of in-class activities along with introducing some completion scoring.

According to Reigeluth (2009), there are three categories of instruction methods; instructional approach, instructional component, and content sequence. Through reflection, I see that my story telling fell under what the authors label as an instructional component. The sequencing of the agenda (what we will cover/content), what the learner will be able to do at the end of the lesson (focused attention), and storytelling (entertainment, attention getting, bridge from familiar to unfamiliar) are applicable instructional techniques for this course. The study also revealed that there are some learners that feel a disconnect during the storytelling implementation.

The fact that direct instruction includes the "the use of many examples, visual prompts, and demonstrations" allows room for the instructor to incorporate creativity into instruction. This study has provided an opportunity to analyze the instructional strategies I employ for potential residual effects of instruction or missteps in implementation. Areas of note included lecture delivery and student reminders of activities.

## **7. Conclusions**

I found that constructivism distinguishes itself from other theories of learning in that it focuses on the learner. While at least two forms of constructivism are recognized (individual and social), "all forms of constructivism understand learning to be an active rather than passive endeavor" (Merriam, Caffarella, & Baumgartner, 2007, p. 292). The goals of constructivism

according to Driscoll (2005) are; problem-solving, reasoning, critical thinking, active and reflective use of knowledge. The idea of developing student's problem solving and reflective use of knowledge to support learning expanded my personal theory as previously I had concentrated on automaticity, repetition, and immediate feedback via polling devices.

Metaphors and stories are such a pervasive aspect of my teaching style, I feel it necessary to announce during the first weeks of the course the heavy reliance on stories and how they are interwoven throughout the course. Recently, I have begun eliciting examples/metaphors from students themselves and reducing the stories from my own experiences. Not only do I find the introduction of students' stories into the course refreshing, it provides additional opportunities for relevance.

### **7.1 Limitations**

The Online Course Questionnaire (OCQ) is a school required tool that is conducted at the end of the semester and is voluntary. Although the system allows for instructor added questions, students are not required to answer them. Unfortunately, due to a technical issue, the six instructor-added questions for one section of the class (37 students) were not included in the reporting; consequently, the six instructor-added questions had a 27% response rate.

Another limitation was that I was unable to determine the relationship of student comments from the OCQ to student performance in the course. Some comments would have been better positioned if I could determine if it were a business major/minor or a non-business major/minor.

### **7.2 Implications for the future**

The findings show that GPA had a statistically significant effect on course performance. Research has shown that active learning reduces achievement gaps on examinations for students

with low GPA scores. One study specifically attributed the success of active learning to the percentage of time spent in class on the active learning activity (Freeman, 2014). Currently, non-majors had higher mean scores on in class activities, this finding supports the prior research. For future classes, I plan to address the continued difference in above the median GPA and below the median GPA students by adding additional in class activities and increasing the weight of this category for the course.

This study has caused me to grapple with the overall course breakdown percentage of deep/surface approaches. Although, the course is traditionally associated with focusing on surface approaches; the learners expressed a desire to “understand” and to “apply” almost similarly for both the majors and non-majors. Understand was categorized as a surface approach given that it requires the cognitive process which, according to the pyramid provided courtesy of Vanderbilt University (appendix D), involves explaining ideas or concepts and utilizes verbs such as, classify, describe, identify, locate, recognize, or select. In contrast, to apply was grouped with deep approaches since it is when a learner uses information in a new situation. Given, my learner centric design and desire to promote lifelong learning, more focus on application seems reasonable for the course.

During the spring 2020 semester, Top Hat made changes to the polling functionality which now provides users more time to think about the question being presented prior to starting the timer. This improvement should address the student concerns about time given to digest what is being asked of them prior to responding to the question.

The learner-centric model endeavors to ensure that every learner has received the information against which they are assessed, has had many opportunities to review the material, are able to determine what is expected of them, have received numerous examples, have viewed

demonstrations along with active explanations and proven their understanding in response to teacher cues. Although the GPA of students coming into the course had a significant effect on how they performed in the course. There was only a marginally significant finding for overall course score with business major males performing 6.3% higher than non-business males,  $p = .055$ . I was surprised and dismayed to discover a gender disparity on online exam performance in the course. Given the small percentage of female students in the course, more data over a wider expanse of time should be gathered.

Over time, I've received numerous comments regarding the stories and metaphors utilized during lectures. For the past year, I focused on reducing the stories and metaphors used. Rather than make class time more effective, it appeared that more students had a disconnect with the content. Given the theories in adult education and the reliance of the learner experience, I decided to bring the learners' stories into the course sessions. It occurred to me that the diversity of backgrounds in each class required a diversity of perspectives. Using the students' stories not only provides relevance but supports the adult education concept that the learners' prior experiences are both valuable and relevant.

This research has provided an opportunity to reflect on how my personal theory of instruction has transitioned from the idea of repetition for understanding processes to embracing the learners' prior experience to promote application of content. The findings revealed how students with no prior business knowledge shared many of the same learning goals as those with business experience. It revealed the dominant gender of learners in my courses, the impact of GPA, and the variety of instructional strategies and approaches that can be used to support learners.

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## Appendix A

Institutional Review Board

Protocol # 1904733958 Exemption Granted 6/6/19

<https://apps.iu.edu/kc->

[prd/kr/inquiry.do?protocolId=30733960&businessObjectClassName=org.kuali.kra.irb.Protocol&methodToCall=start](https://apps.iu.edu/kc-prd/kr/inquiry.do?protocolId=30733960&businessObjectClassName=org.kuali.kra.irb.Protocol&methodToCall=start)

## **Appendix B**

### V246 Course Syllabi

#### Required Text & Equipment:

- 1 McCaster, Antonette: Elements of Accounting for Business, Governmental & Not-for-profit organizations; 1st Edition, 2018. Top Hat. ISBN: 978-1-77330-674-2
- 2 Top Hat Polling System

#### **LEARNING OUTCOMES:**

The main purpose of this elementary course is to prepare 1st and 2nd year students for the next level of undergraduate courses in governmental and non-profit accounting and reporting and a preparatory course for financial management and government finance. Students are expected to develop an understanding of basic accounting concepts, assumptions, important Generally Accepted Accounting Principles (GAAP) and accounting cycle as understood and practiced in different types of organizations.

#### **COURSE COMPETENCIES:**

1. Develop an understanding of basic accounting concepts
2. Analyze financial transactions
3. Understand how to create and read financial statements

#### **STUDENT LEARNING OUTCOMES:**

1. Explain problems using financial accounting terminology.
2. Record daily transactions for Business, Not-for-profit, and Governmental entities.
3. Illustrate the basic procedures for adjusting, closing entries, and summarizing the accounting records prior to the preparation of the financial statements.

4. Students will be able to construct financial statements using Generally Accepted Accounting Principles (GAAP) based upon financial transactions and analyze the results of operations.

**GRADING:**

The grading is distributed throughout the course as follows:

Requirement	Points	% of Grade
Top Hat Text Q&A	45	13%
Top Hat Polling lecture questions	30	8.5%
Canvas Quizzes	40	11%
In-class Activities	40	11%
<b>Business</b>		
Homework #1	25	7%
EXAM 1 – Business Accounting	30	8.5%
<b>Not-for-Profit (NFP)</b>		
Homework #2	30	8.5%%
EXAM 2 – NFP Accounting	30	8.5%%
<b>Governmental</b>		
Homework #3 (Government)	45	13%
EXAM 3 – Governmental Accounting	35	10%
<b>TOTAL</b>	<b>350</b>	<b>~100%</b>



At the completion of the course, the following schedule of grading will be used in determining an individual student's grade.

<b>Name:</b>	<b>Range:</b>	
A	100 %	to 93.5%
A-	< 93.5 %	to 89.5%
B+	< 89.5 %	to 86.5%
B	< 86.5 %	to 83.5%
B-	< 83.5 %	to 79.5%
C+	< 79.5 %	to 76.5%
C	< 76.5 %	to 73.5%
C-	< 73.5 %	to 69.5%
D+	< 69.5 %	to 66.5%
D	< 66.5 %	to 63.5%
D-	< 63.5 %	to 59.5%
F	< 59.5 %	to 0.0%

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### **ATTENDANCE AND CLASS PARTICIPATION**

Attendance is required. I will demonstrate how to work problems during class, then students will work with peers on specific exercises to practice working through problems similar to what the instructor demonstrates. These are the kind of problems students are expected to be able to complete alone.

Students that have difficulties in this class do not regularly attend and have not prepared in advance for the class sessions. This class uses Top Hat to determine active class participation and preparedness. No curving of any exams or assignments will be done.

Do not use class time (this includes before class starts, during class, or at the end of class when other students are present) to discuss your attendance or other personal issues.

Please see the section under in-class activities regarding your options for in-class activities you will miss due to absences you are aware of in advance.

## *Hospitalizations and Emergencies*

### Absence due to Hospitalization or Emergency Family Concerns

- If your absence is the result of hospitalization or an emergency family concern, contact the Dean of Students Office for an attendance memo as soon as possible.
- The Dean of Students Office will verify documentation related to your absence, contact your instructors regarding the issue, and provide support to you during the time of crisis.
- The Dean of Students Office may not be able to provide a memo if you do not make contact for support within a reasonable timeframe.
- Remember, it is still your responsibility as a student to be in contact with your professors when you are able to return. Ultimately, it is up to you and your faculty member to negotiate any course adjustments. If adjustments cannot be made, you may need to withdraw from a course.

### Absence as a Result of Threats to Your Personal Safety or Security

- If your absence is the result of threats to your personal safety or security, please contact our Confidential Victim Advocate at [readvo@indiana.edu](mailto:readvo@indiana.edu) or by phone at 812-856-2469. **Remember, if you are in immediate danger contact the police by dialing 911.**

### Absences due to Chronic Medical Concerns

- If you have a chronic medical condition that may affect your attendance, please contact [Disability Services for Students](#) at 812-855-7578 or by completing their online [Request for Services](#) to determine if any academic accommodations would be of assistance.

### *Extended or Prolonged Absences* **Sometimes catching up is not an option.**

If you miss more than 20% of the semester for medical or personal reasons, it may be best to consider withdrawing from all course work until such time as you are able to return and focus on your academic goals.

## **TOP HAT**

We will be using the Top Hat classroom response system in-class. You will be able to submit answers to in-class questions using Apple or Android smartphones and tablets, laptops, or through text message.

In order to enroll into your Top Hat course, you will need to enter Top Hat through a link from Canvas. This is the only way to ensure that your Top Hat Account and your Canvas are properly linked. Please visit the **Student: Indiana University Quick Start Guide**(<https://support.TopHat.com/s/article//Student-Indiana-University-Quick-Start-Guide>) within the Top Hat Success Center which outlines how you will register for a Top Hat account, as well as providing a brief overview to get you up and running on the system.

Should you require assistance with Top Hat at any time, due to the fact that they require specific user information to troubleshoot these issues, please contact their Support Team directly by way of email ([support@TopHat.com](mailto:support@TopHat.com)), the in app support button, or by calling 1-888-663-5491.

You must have a functioning, registered and licensed device in order to earn credit for the majority of activities.

The use of Top Hat questions have multiple purposes:

- To give you credit for making the effort to come to class prepared
- To give you guys a break from listening to me talk
- To instigate in-class discussion (i.e. when we go over the answer)
- To tie readings to lecture
- To give you feedback on your level of understanding of course material

## **EXTRA CREDIT**

Throughout the semester, extra credit opportunities will be provided at the discretion of the instructor. Some of these opportunities are built into existing assignments; while others are separate activities.

## IN-CLASS ASSIGNMENTS

Regular in-class assignments, provide opportunities for students to practice technical aspects of the lectures and materials provided. These activities are done in-class so that students may utilize peer-to-peer assistance under the supervision and direct feedback of the instructor. For this reason, make-up assignments are not given. These activities are all known in advance to students either through instructor communication or outlined in

Canvas/pages and can be submitted via Canvas prior to the release/review of solutions to demonstrate your understanding of the outcomes.

Course grades are uploaded frequently in this course, students should review the Canvas gradebook throughout the semester and email the instructor with any questions/concerns about posted grades within 7 days of the grade posting.

## HOMEWORK SUBMISSIONS:

All Homework assignments *are equivalent to take-home exams*. This is the only time you will be able to determine if you can effectively apply the instructor demonstrations, in-class activities, and readings from the course. Completing homework in the manner required, also aids students in determining their exam readiness. Homework must be submitted via Canvas as outlined under the assignment menu, on the date and time indicated, **and completed by YOU without assistance from other students, friends or family. Duplicated copies of assignments turned in will be rejected for ALL students involved and administrative action for academic dishonesty may be taken in such cases.**

Homework assignments submitted outside of the outlined parameters will automatically be deducted 20%; if solutions have not been reviewed/released. **No homework will be graded after the assignment has been reviewed in-class or solutions released rather you are present or not.**

*Note: The Indiana University Code of Student Conduct and Policy on Civility is in effect. Every effort should be made to maintain a respectful learning environment at all times. Cases of Academic Misconduct will be reported to the office of the Dean of Students.*

<http://www.iu.edu/~code/code/responsibilities/academic/>

## **EXAMS**

Failure to take an exam or to upload an assignment by the scheduled time will result in a grade of zero on that exam or assignment. When taking a major exam in advance is not possible due to extenuating circumstances as determined by the instructor, your total class grade will be calculated out of a reduced number of points. Students should review the Final Exam Schedule during the first week of class and inform the instructor of any conflicts via email. If arrangements are not made during this time, and the student has a duplicate final, it will be up to the student to negotiate with the other instructor to make up their exam.

Students must download Respondus lockdown browser. *Taken from kb.iu.edu:*

1. Download and install Lockdown Browser from the Respondus [Download Lockdown Browser](#) page.
2. When installation is complete, launch Lockdown Browser. It should redirect automatically to the IU Canvas home page.
3. Log in with your IU Network ID username and passphrase, navigate to the appropriate quiz, and then click Take the Quiz.
4. When you are finished and ready to submit the quiz for grading, click Submit Quiz.

Finally, for those students without laptops/computers or with poor internet connectivity, you should utilize the IU computer labs located below that already have the Respondus Lockdown Browser installed:

- HH (Hodge Hall) 4059
- CG (Godfrey) 0030

If you know in advance you will miss a major assessment (This includes religious holidays per IU policy and IU approved functions), it is your responsibility to arrange a time prior to the scheduled date for the class to complete the assessment.

## **PROFESSIONALISM**

Students are expected to act in a professional manner. Each violation of professionalism will

result in a reduction of 1 point per occurrence for the course. Violations of professionalism include, but are not limited to:

- Use of cell phones, computer notebooks or other electronic devices during class for activity **not** related to the course.
- Disruptive behavior in-class – e.g., carrying on conversations or being excessively noisy
- Engaging in any activity that prevents you from fully participating in-class including repeated tardiness

Please leave the classroom if you must engage in anything other than class activities and return when you can participate.

#### **GUIDELINES FOR EMAIL COMMUNICATIONS**

- Always include a subject line with the Section# **or** Course # with meeting time.  
Example: Section: ##### **or** (V246 - T/Th 2:30pm)

Assignments & In-class

Clas	MONTH	TOPICS & READINGS	Activities
s	/DAY		
TH=Top Hat			
COURSE SYLLABUS/COMMUNICATING			
1	JAN 8	THE LANGUAGE OF BUSINESS	Syllabus Review
2	10	ACCOUNTING VOCABULARY & CONCEPTS	TH Ch. See Canvas (Pages) 1
TRANSACTIONAL ANALYSIS -THE			
3	15	ACCOUNTING EQUATION (INCREASING/DECREASING ACCOUNTS)	TH Ch. See Canvas (Pages) 2
4	17	TRANSACTIONS, JOURNALS & ADJUSTING ENTRIES	TH Ch. See Canvas (Pages) 2
PREPARING A TRIAL BALANCE &			
5	22	FINANCIAL STATEMENTS	TH Ch. See Canvas (Pages) 2
6	24	FINANCIAL STATEMENTS	TH Ch. See Canvas (Pages) 3
7	29	FINANCIAL STATEMENTS & CLOSING THE BOOKS	TH Ch. See Canvas (Pages) 3
8	31	HOMEWORK REVIEW	Canvas: Homework #1 Due prior to 11:15am
9	FEB 5	EXAM 1	Taken with Respondus

Lockdown Browser prior to  
5pm

10	7	NON-SLG NOT-FOR-PROFIT ORGANIZATIONS	TH Ch. See Canvas (Pages) 4
11	12	NON-SLG NOT-FOR-PROFIT ORGANIZATIONS	TH Ch. See Canvas (Pages) 4
12	14	NON-SLG NOT-FOR-PROFIT ORG	TH Ch. See Canvas (Pages) 5
13	19	NON-SLG NOT-FOR-PROFIT ORG	TH Ch. See Canvas (Pages) 5



Class	MONTH /DAY	TOPICS & READINGS	Assignments & In-class activities	
			TH=Top Hat	
14	21	NON-SLG NOT-FOR-PROFIT ORG	TH Ch. 5	See Canvas (Pages)
15	26	NON-SLG NOT-FOR-PROFIT ORG	TH Ch. 5	See Canvas (Pages)
16	28	HOMEWORK REVIEW		Canvas: Homework #2 Due prior to 11:15am Taken with Respondus
17	March 5	EXAM 2		Lockdown Browser prior to 5pm
18	7	THE USE OF FUNDS IN GOV ACCTING	TH Ch. 6	See Canvas (Pages)
	12	SPRING BREAK		
	14			
19	19	THE USE OF FUNDS IN GOV ACCTING	TH Ch. 6	See Canvas (Pages)
20	21	BUDGETARY CONSIDERATIONS- OVERVIEW & CONCEPTS	TH Ch. 6	See Canvas (Pages)
21	26	BUDGETARY CONSIDERATIONS - PROPERTY TAX CALCULATION & JOURNALS	TH Ch. 6	See Canvas (Pages)

Class	MONTH /DAY	TOPICS & READINGS	Assignments & In-class Activities	
		BUDGETARY CONSIDERATIONS-		
22		28 ENCUMBRANCES & CLOSING ENTRIES	TH Ch. 6	See Canvas (Pages)
23	APRIL	2 GENERAL AND SPECIAL REVENUE FUNDS- GRANT ACCOUNTING	TH Ch. 7	See Canvas (Pages)
24		4 GENERAL AND SPECIAL REVENUE FUNDS- INTERFUND ACTIVITY & FUND BALANCE CLASSIFICATION	TH Ch. 7	See Canvas (Pages)
25		GENERAL AND SPECIAL REVENUE		
		9 FUNDS WRAP UP/INTRODUCE CAPITAL PROJECT FUND	TH Ch. 7	See Canvas (Pages)
26		11 CAPITAL PROJECTS & DEBT SERVICE	TH Ch. 7	See Canvas (Pages)
27		16 DEBT SERVICE & PERMANENT FUNDS	TH Ch. 7	See Canvas (Pages)
28		18 PROPRIETARY-TYPE FUNDS	TH CH.	See Canvas (Pages)

29

GOVERNMENTAL ACCOUNTING

TH CH. Canvas: Homework #3 Due

23 CYCLE AND SYSTEM/HOMEWORK

8 prior to 11:15am

REVIEW

FINAL EXAM - SECTION ##### (2:30pm);

30 2:45 PM - 4:45PM

Taken with Respondus

Lockdown Browser prior to  
4:45pm

FINAL EXAM - SECTION ##### (11:15am);

Taken with Respondus

MAY 2 10:15 AM - 12:15PM

Lockdown Browser prior to  
12:15pm

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The above schedule is subject to limited change in the event of extenuating circumstances.

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TH=Top Hat

Week	Readings	Class	Activities	Deep (D) Surface (S) Mixed (M)
1	<a href="#">Chapter 15.pdf</a> & Chapter 1 (Top Hat.com)	1	All students should take the <a href="#">syllabus Quiz</a> after reviewing the <a href="#">course syllabus</a>	S
		2	To determine rather you have read sufficiently from the Chapter 15.pdf above, students should be able to answer: <a href="#">Q15-1, 2 &amp; 3</a>	M
2	Chapter 2 (www.Top Hat.com ) & <a href="#">Supplemental - Ch. 1 &amp; 2.pdf</a>	3	During class, instructor will complete most of P15-48. Students must bring a copy of the <a href="#">P15-48 Student Template.xlsx</a> to follow along in-class. All students must submit <a href="#">E15-29 (Transaction Submission)</a> prior to end of the day.	M
		4	After today's lecture, students should utilize either the <a href="#">General Ledger Journal Entry.xlsx</a> to submit journal entries or the <a href="#">t+accounts+template.xlsx</a> to submit T-Accounts for the transactions outlined here: <a href="#">E15-35</a> .	S
3	This week we will move into Business Financial Statements. Putting together information we learned in prior exercises (Class 2-4; increase/decrease, T-accounts, Journals), we will prepare a trial balance and from there complete financial statements.	5	Instructor will review <a href="#">E15-35</a> <a href="#">During class students will submit one journal on the provided notecard from E15-36</a> . Students can utilize this journal template to organize the lecture for future reference: <a href="#">General Ledger Journal Entry.xlsx</a> After class, students should complete the Canvas five (5) question <a href="#">quiz on journal entries</a> .	S M S


	Chapter 3-Financial	6	Instructor will review <a href="#">journal entries quiz</a> & <a href="#">E15-36</a>	S
	Statements; Polling TH		During class instructor will walk through construction	S
	text and questions		of a trial balance E15-37. There will be polling Top	
	<a href="#">(www.Top Hat.com)</a>		Hat questions today.	D
	<a href="#">Business Acctng Ch. 1 &amp;</a>		After class, students must submit a <a href="#">financial statement</a>	
	<a href="#">2.pdf</a>		<a href="#">via Canvas</a> using the trial balance prepared during	
	<a href="#">Ch. 3 Accrual</a>		class.	
	<a href="#">Accounting (Part 1).pdf</a>			
	<a href="#">Ch. 3 Accrual</a>			
	<a href="#">Accounting (Part 2).pdf</a>			
4	Chapter 3 (www.Top	7	Prior to the start of class, students should	S
	Hat.com) & <a href="#">Chapter 1</a>		submit <a href="#">Identify financial statement by type of account</a>	
	<a href="#">(Supplemental)</a>		Students will have polling questions and lecture using	S
			<a href="#">www.Top Hat.com</a> and <a href="#">E24A.pptx</a> 	S
			In-class Activity: Instructor review of E15-	
			37(Financial Statements) & E15-38 (Closing the	S
			books)	D
			MANY polling multiple choice questions.	
			To be completed after class: <a href="#">Homework#1</a> must be	
			submitted as outlined on Canvas!	
		8	<a href="#">Homework#1- Instructor</a> Review of homework &	D
			Business accounting wrap up	
			Extra Credit Opportunity	D
			Students may submit <a href="#">an ORIGINAL business</a>	
			<a href="#">transaction</a> which includes the problem, the purpose	



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In-class activity -Journals - [General Ledger Journal Entry.xlsx](#) 

M

In-class activity- Learning Tree (Statement of Activities) - [Class 12 - Learning Tree Trial Balances.xlsx](#) 

S

D

After class students should complete [FASB accounting standard 2016-14 \(topic 958\)](#)

If you have not done so already, students must submit an [NFP Example](#).

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7

13 Review of Chapter 4 Polling, Top Hat text solutions along with multiple choice lecture questions.

S

[Learning Tree Trial Balances.xlsx](#) 

S

[ASU Video quiz](#) must be completed today.

14 Instructor walk through of remaining Learning Tree illustration & Collection of student portion of statement of activities assigned.

M

M

In-class activity Statement of Activities/ Statement of Financial Position as well as polling Top Hat questions on NFP accounting concepts.

M

Students should complete [FASB accounting standard 2016-14 \(topic 958\)](#) as outlined in Canvas

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8





15 Instructor will review [ASU video quiz](#) results & complete another step by step demonstration of Statement of Activities; including calculation of Net assets released from restrictions.


S

S

			There will be polling Top Hat questions	S
			After class students should submit <a href="#">NFP Quiz</a> & note the due date/time for <a href="#">NFP Homework</a> (due as outlined in Canvas Assignment menu)	
		16	Instructor will review <a href="#">Homework #2 (NFP)</a> & <a href="#">FASB accounting standard 2016-14 (topic 958)</a>	M
9	Ch. 6 – (Focus on learning objectives 6.4 & 6.5) <a href="http://www.TopHat.com">www.Top Hat.com</a>	17	Students should secure a quiet location with strong WIFI and take the <a href="#">Not-For-Profit Exam 2- Requires Respondus LockDown Browser</a>	M
		18	Instructor will review Not-For-Profit exam results	
			Polling Top Hat questions during lecture as well as student submitted <a href="#">notecard regarding Governmental accounting funds.</a>	M
10	Ch. 6 - Focus on learning objectives 6.1 - 6.3	19	Polling Top Hat questions during lecture.	S
			Students should complete <a href="#">Quiz Use of Funds</a> after class.	M
		20	Budgetary Considerations lecture with polling Top Hat questions and instructor demonstration of property tax levy calculation.	M
			Students should bring a <a href="#">property tax template to follow along.</a>	M
11	Readings: Students should read Ch. 7 and respond to those questions this week.	21	Completion of Budgetary topic with instructor demonstration of <i>recording the budget</i> and <i>encumbrance journals</i> and polling Top Hat questions.	S
			Students must submit their completed Property Tax solution to <a href="#">problem</a> using the <a href="#">property tax levy template.docx</a> during class.	M




		22	Instructor will review the results of the <a href="#">Budgetary review quiz</a> .	S
			General & Special Revenue fund lecture with instructor demonstration of Recording Budget & Encumbrance payment	S M
			In-class activity utilizing <a href="#">journal template</a> .	
12		23	General & Special Revenue Funds lecture continued utilizing student templates below:	S
			<a href="#">Student Templates (GF &amp;SRF).xlsx</a>	M
			<a href="#">Grant Accounting Journals.xlsx</a>	
		24	Students must submit <a href="#">Quiz - Statement of Revenues, Expenditures and Changes in Fund Balance</a> as outlined on Canvas.	M
			Conclusion of GF & SRF - Review <a href="#">Grant Accounting journal</a> .  There will be 2 polling Top Hat questions today.	M
			Useful template for instructor demonstration of SRF Financials - <a href="#">Student handout- srf financial statement.xlsx</a> 	D
13	Ch. 8 (Proprietary Funds) & Ch. 9 (Fiduciary Funds) <a href="http://www.TopHat.com">www.TopHat.com</a>	25	Instructor will review Polling Text Questions Ch. 6 & Ch. 7	S
			Problem utilized for instructor demonstration of CPF Complete Cycle - <a href="#">In-class Walk Through CPF Problem.pdf</a>  	
		26	Today's lecture will cover the Debt Service and Permanent funds; demonstrating the complete cycle of	S

a permanent fund. There are two polling Top Hat questions valued at less than a point. The following templates should be printed and available for your use during class: [t+accounts+template.xlsx](#) 

M

After class students should submit the [Quiz Government Acctng Cycle](#)

14 27 Instructor will review [Quiz Government Acctng Cycle](#) & discuss proprietary funds & fiduciary funds and demonstrate journal entries. Students should bring the [general journal template](#)  to practice correctly completing journals. M S

After class students should complete the [Quiz - Capital Project, Debt Service & Permanent Funds](#).

28 Students should complete & **SUBMIT VIA CANVAS** [final homework \(P6-47\)](#). D

15 29 Instructor will review quiz results S

Instructor will review [homework](#) and provide grading rubric as well as complete a final exam review.

30 Students should secure a location with a strong Wi-Fi signal and submit the [Final Exam-Governmental](#) M

## Appendix C

### Syllabus Survey Questions

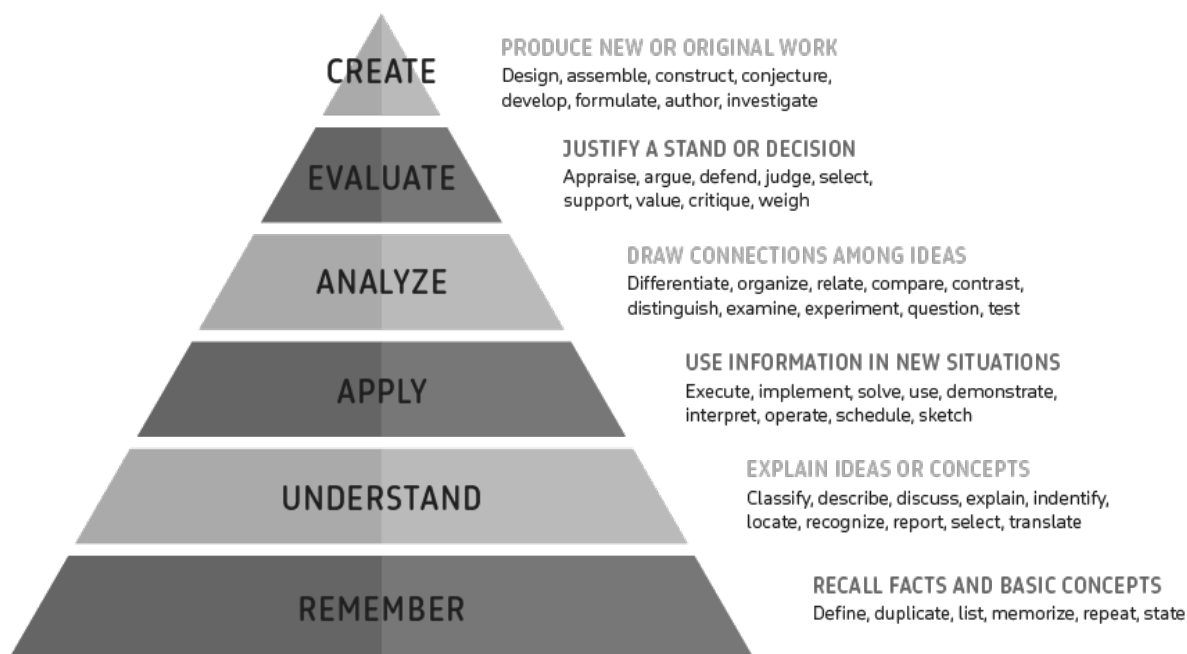
<b>Point Value</b>	<b>Question</b>	<b>Question Type</b>
<b>1</b>	Who can help you with your homework? A-The Graduate or Undergraduate Teaching Asst. B- The Instructor. C- Friends Family. D- No one.	Multiple Choice
<b>0.5</b>	Late assignments are accepted after they have been reviewed. True/False	True/False
<b>0.5</b>	At the end of the semester, I should contact the instructor or teaching assistants and ask for consideration of additional points to increase my course grade. True/False	True/False
<b>0.5</b>	I should bring templates or attempt exercises listed under "Canvas/pages" prior to arriving for class on the outlined day. True/False	True/False
<b>0.5</b>	When I send an email to the instructor the subject line should include... A-Should state "IMMEDIATE RESPONSE NEEDED" B-The reason I am sending the email C-Section# or Course ID and meeting time D- Should be blank E- Just V246	Multiple Choice
<b>0.5</b>	Where can you find the accurate dates for Course Exams or Homework Assignments? A- In Canvas or Top Hat B-Ask the Instructor C-Ask the TA D-Ask another student	Multiple Choice
<b>0.5</b>	When you take an exam for this course, how and when should you begin taking it? A- show up to class, B- wait to download the Respondus lockdown browser right before the exam is due and take it on your phone. C-An hour before it's due wherever I happen to be; regardless of internet reliability. D- At least 2 hours before its due, in an IU computer lab with a Respondus lockdown browser, my notes, calculator and debit/credit rules printed	Multiple Choice
<b>0.5</b>	What do you hope to learn from this course?	Short Answer
<b>0.5</b>	What is your greatest concern for this course?	Short Answer

## Appendix D

### Cognitive Process Instructions

Bloom's taxonomy focuses on the cognitive domain. Consequently, knowledge and development of intellectual skills are core; focusing on a learner's ability to recall or recognize facts, patterns, and concepts that will serve as a foundation for deeper learning.

Posing multiple choice questions can help gauge a student's level of basic understanding and remembering of a subject, while asking a student to come up with a comparison or analogy points towards entering the application or analysis stage.



This pyramid, courtesy of the Vanderbilt University Center for Teaching, represents the revised Bloom's taxonomy framework and educational outcomes and outlines the key levels of thinking.

Using this information, please outline rather you feel the question posed primarily requires the learner to remember, understand, apply, analyze, evaluate or create.

Once you have completed the spreadsheet, please submit it to me via email at [mccaster@iu.edu](mailto:mccaster@iu.edu).

Thank you for your time,

Antonette McCaster

## Tables

Table 13 provides a visual depiction of how Deep & Surface (instructional approaches) aligns with both the course learning outcomes and relationship to student learning goals

Table 13

### Instructional Strategies Alignment with Learning Outcomes and Student Learning Goals

<b>Instructional approach</b>	<b>Course learning Outcomes</b>	<b>Student learning goals</b>
Surface approach (memorize & procedural)	Explain problems using financial accounting terminology.	Memorization Retain information learned
	Record daily transactions for Business, Not-for-profit, and Governmental entities.	Great Grade Improve understanding of Governmental Accounting concepts Improve understanding of Not-for-profit accounting concepts Learn from Instructor's shared experiences Personal financial understanding Understand Basic accounting principles
Deep approach (application, evaluate, synthesize & create)	Illustrate the basic procedures for adjusting, closing entries, and summarizing the accounting records prior to the preparation of the financial statements.	Develop effective study habits Future application of content Improve/develop technical skills in accounting
	Students will be able to construct financial statements using Generally Accepted Accounting Principles (GAAP) based upon financial transactions and analyze the results of operations.	Relationship with other areas  Understand Basic accounting principles

Table 14

Online Course Questionnaire Questions and the Proposed Research Question Alignment

<b>Research Question</b>	<b>Proposed OCQ</b>
RQ1: How aligned are the instructional strategies used in V246 with the stated learning outcomes?	<p>(1) During the not-for-profit section of the course, you had an assignment to find a recently published article about a not for profit organization and determine which type (Voluntary health &amp; welfare organization, hospital, college/university, or other not for profit) and why you categorized it as such. What did you learn from this activity as it relates to the learning outcomes or your own learning goals?</p> <p>(2) During the governmental portion of the course, you were asked to record the budget on a notecard. How did this activity assist you to meet the outlined learning outcomes? Graded activities reflected the subject matter and goals of the class. [LIKERT] The course fulfilled the outcomes described in the syllabus? [LIKERT]</p>
RQ2: How aligned are student learning goals with stated learning outcomes?	<p>(3) During the not-for-profit section of the course, you had an assignment to find a recently published article about a not for profit organization and determine which type (Voluntary health &amp; welfare organization, hospital, college/university, or other not for profit) and why you categorized it as such. What did you learn from this activity as it relates to the course outcomes or your own learning goals?</p> <p>Do you have additional comments and/or suggestions to offer the instructor for the next times/he teaches this course?</p>
RQ3: How does using surface and deep strategies in the course relate to student scores when examined by prior knowledge group (business major vs. non-business major)?	<p>(4) One aspect of learning involves applying what is learned in-class to new information or situations. How often do you feel you utilized this approach to in-class activities, quizzes, homework assignments, or exams?</p> <p>(5) Another aspect of learning involves memorizing facts and procedures and being able to retrieve that information in its original form for later use. How often do you feel you utilized this approach to in-class activities, quizzes, homework assignments, or exams?</p>
RQ4: How do students perceive the contribution of instructional strategies to their learning?	<p>(6) Was there an activity completed during class that you felt particularly helped you meet a learning goal or instructional objective better than the others? If so, what was it and why?</p> <p>(7) Was there an activity completed during the course that you felt did NOT help you meet your own learning goals or the course learning outcomes? If so, what was it and why?</p> <p>What did you like most about this course and instructor? What did you like least about this course and instructor?</p>

Do you have additional comments and/or suggestions to offer the instructor for the next times/he teaches this course?

How effectively did out-of-class work (assignments, readings, practice, etc.) help you learn? [LIKERT]

I learned a lot in this course. [LIKERT]

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*Note.* (#)Represents instructor-added questions.

Table 15 provides a visual depiction of how the themes found in a recent text published on business education aligned with the themes in student concerns for this study.

Table 15

Student Expectations (Concerns)

<b>Bartley (2019) Study</b>	<b>This Study</b>
Difficulty Level	Difficult assignments [22] Difficulty with comprehension (understanding)[36]
Time Management	Large workload/falling behind [24]
Grades	Negative impact of grade/GPA[17]
Study Habits	Poor preparation [9] Poor attention to detail [7]
Writing on board vs. PowerPoint	Technological issues [13]
Novice Learners	Lack of prior knowledge [12] Unfamiliar subject matter [25]
Math	Poor math skills/Prior negative experience in Math [19]
Preconceptions of accounting	Preconceptions [2]
Outside demands	Transportation issues [1]
Classmates	Classroom environment [1]



## Curriculum Vitae

Antonette Lorraine McCaster  
mccaster@indiana.edu

### Education:

Indiana University -South Bend IN

Bachelor of Science in Business - Concentration: Accounting May 1999

Associates of Science in Business- Concentration: Business August 1997

DePaul University -Chicago IL

MBA - Concentration: Management Information Systems August 2003

Indiana University –Bloomington IN

EdD – Concentration: Instructional Systems Technology April 2020

### Academic Appointments:

Indiana University Bloomington

Senior Lecturer August 2017- Present

- Continued research focusing on non-business majors in introductory accounting courses with emphasis in andragogy, dialogue education, and instructional technology integration.
- Instruct approximately 100-250 undergraduate students each semester enrolled in Governmental and Non-profit accounting and financial reporting courses.
- Supervised three graduate assistants and six undergraduate assistants each semester.
- Integration of TopHat platform for both in classroom and outside of class activities.
- Preparation of educational materials for courses and supportive handouts utilized as graphic organizers.
- Faculty advisor for IU Student Chapter of Association of Governmental Accountants (AGA).

## Curriculum Vitae

Lecturer August 2011- July 2017

- Instruct approximately 100-250 undergraduates and graduate students/semester enrolled in Governmental and Non-profit accounting and financial reporting courses.
- Prepared and delivered lectures and administered and corrected examinations and assignments
- Rendered advisory role for students as requested.
- Conducted research focusing on non-business majors in introductory accounting courses.
- Preparation of educational materials for Non-profit accounting and supportive handouts
- Faculty advisor for IU Student Chapter of Association of Governmental Accountants (AGA).

### **Other appointments and professional experience:**

Virginia Department of Transportation

January 2009 – August 2011

#### Assistant Controller

- Provides leadership to Finance Directorate staff and VDOT statewide to aid in the development, coordination and management of the project accounting and accounts receivable activities of the 3<sup>rd</sup> largest state transportation agency with an annual budget of \$3.3billion.
- Leads teams (internal and external to the Fiscal Division) by providing guidance to ensure programming and budgetary accounting processes are in sync.
- Ensures accurate and efficient policies and procedures are in place and followed as they relate to budgetary accounting operations, project setup and adjustments, billing to federal agencies and other customers and project closeouts in the Financial Management System and federal systems.
- Coordinate development of proprietary system to record and report \$694.5 million of Stimulus fund (ARRA) activities. Implemented and trained over 105 divisions, district offices, local governments, and contractors/consultants on the use of the new system and requirements.
- Prepare Agency Risk Management and Internal Control Standards matrix, narratives, and tests for internal controls that fell under my purview.

## Curriculum Vitae

- Prepared or coordinated preparation of compliance reports, including the Department Of Accounts A/R Quarterly report, Supplemental Schedule of Expenditures of Federal Awards, as well as ad hoc management reports.
- Ensures applicable policies and procedures are in accordance with Department of Accounts(DOA) directives, federal laws and Generally Accepted Accounting Principles and Practices (GAAP). Provides financial guidance and consultation for senior level management in the development & in interpretation of financial data.
- Serves as a the division's primary liaison with outside entities such as FHWA and Dept. of Rail and Public Transportation and key VDOT divisions such as Programming, Financial Planning and Local Assistance.

City Of Richmond, VA

January 2008 – June 2008

### Controller

- Supervises a staff of 33 professional accounting and administrative personnel with a division budget of \$1,824,831 and a City budget of \$1.7billion.
- Direct, manage, and provide policy guidance and oversight of financial management personnel, activities, and operations. Plans, organizes, implements and directs the financial and accounting activities for all City agencies, department and component entities in accordance with GAAP and GASB pronouncements, internal controls, and City policies and procedures.
- Provides leadership, mentoring and coaching to assigned staff that ensures attraction, development and retention of a highly skilled and motivated team. Engages in all aspects of staff supervision including selecting or recommending selection, training, assigning and evaluating work, counseling, disciplining, and terminating or recommending termination.
- Work with staff and internal audit group to document internal controls, procedures, and progress on outstanding audit recommendations.
- Establish policies, systems, and procedures for controlling appropriated funds, including the forfeiture fund, travel and transportation funds.
- Maintains complete financial records for the City and participates in formulation of citywide policies and regulations.
- Participates as a senior member of the fiscal management team in developing and

## Curriculum Vitae

recommending policies and procedures to enhance the operational efficiency, accuracy, and fiscal integrity of accounting and financial information. Represents the City on matters of fiscal policy and regulation.

- Directs the preparation of a wide variety of regular and special reports, including monthly, quarterly and year-end closings and the Comprehensive Annual Financial Report (CAFR).
- Meet with agency directors to discuss financial and operational functions. Meets with Department management to discuss operational and financial concerns and provides ongoing recommendations to improve operations.
- Reviews, evaluates and recommends best practices in the areas of internal controls, financial reporting, and automated financial information systems.

Village of Bolingbrook, IL

January 2004 – January 2008

### Director of Finance and Administration

- Supervised and directed the Finance Department staff of 25 with an annual budget of \$109.5 million.
- Experience analyzing financial statements and assessing the soundness of accounting and financial management practices of programs and/or organizations in accordance with generally accepted accounting principles.
- Invested and managed all Village funds as well as monthly reporting to the board and finance committee
- Documented Internal Control processes and conducted testing of those controls and other compliance reviews.
- Preparation of the Annual financial report along with Management Discussion and Analysis along with applicable footnote disclosures.
- Implementation of a new software application (MUNIS-developed by Tyler)
- Coordination of the budget process and preparation of all budget materials for Budget Workshops (where the budget is presented to the Mayor, Board of Trustees, and the Public).
- Expert knowledge of and ability to manage complex financial management and accounting programs for a large government, including the responsibility for advising senior officials on financial and accounting matters, developing policies, and managing fiscal year audit requirements.

## Curriculum Vitae

Inland Great Lakes, Oak Brook IL

April 2001 – January 2004

### CFO/Treasurer

- Responsibilities included directing financial transactions for a condominium developer that had annual receipts of over \$25 million.
- Reviewed and analyzed project performance, prepared client financial statements, reconciled bank accounts, oversaw budget preparation, and reviewed and initiated monthly reserve transfers.
- Advised associations of financial matters, standards and procedures of condominium management, maintained historical records of collection accounts, bank balances, budget variances, and all association documentation.
- Implemented and Maintained the PROMAS software program and trained staff on its use.
- Ensured compliance with federal, state, and local legal requirements (incorporation, annual reports, tax returns, 1099s).

Deloitte & Touche LLP, Indianapolis IN

June 1999- April 2001

### Experienced Audit & Advisory Staff

Supervised Staff Accountants inspecting clients' financial records, compiled and analyzed data and prepared detailed accounting reports and resolved accounting research issues.

- Reviewed client accounting and operating procedures and systems of internal control, and conducted audit tests which were sufficient in scope to support professional opinions as to the fair representation of client financial statements.
- Prepared financial statement reports, performed analytical reviews of audit documents and prepared the work paper documentation for Deloitte & Touche's audit opinions.
- Prepared necessary schedules for federal and state income tax returns on behalf of our corporate and individual clients.

### **Licensure and Certification:**

- IN Licensed Certified Public Accountant (CP112003900)-Indiana Professional Licensing Agency
- VA Licensed Certified Public Accountant (35117) – Board of Accountancy
- Certified Government Financial Manager (CGFM)-(Certificate# 15218) designation; Obtained January 2011

## Curriculum Vitae

### Guest Lectures

- SPEA/Bloomington IN; Guest Lecturer for L568 - Management of Local Government Services. Topic: Beverly Hills CA Case Study: Understanding the relationship between budgeting, accounting, reporting and cash flows. (9/25/2018 & 10/22/19)  
SPEA/Bloomington IN: Guest Lecturer for F610 Government Budgeting and Program Analysis. Topic: Beverly Hills CA Case Study: Understanding the relationship between budgeting, accounting, and reporting. (9/21/2017)
- SPEA/Bloomington IN; Guest Lecturer for F610 Government Budgeting and Program Analysis. Topic: Relationship of the budget to accounting and reporting.(12/7/2015)
- SPEA/ Bloomington IN; Guest Lecturer for SPEA V560-Budgeting Process from a Practitioners point of view. Topic: Shared my budgeting experience with the students. In particular outlined the budgeting process in the various departments I have worked. Including who initiates the budget process? Are budgets usually prepared on time? Are the requests submitted on time? Are they done correctly? How do I handle requests that are over the budget limit? What kinds of problem do I face in deciding which requests to grant and which ones to deny? How do I handle requests that have been denied by those above me? (10/13/2011)
- SPEA/ Bloomington IN; Guest Lecturer for joint class V558/V458 Fund Development. Topics: (1) the differences between permanently restricted, temporarily restricted and unrestricted assets and why nonprofits (charities) in particular need to pay attention to those differences, and (2) criteria and mechanisms for allocating line-item expenses (e.g., salaries, benefits, supplies, publications, IT) across functional expenses (e.g., fundraising, management and general, program services). (11/21/2011)

### Presentations

- McCaster, A. Incorporating Dialogue Education Practices to Foster Active Learning in Undergraduate Student Teams. Poster presented at American Accounting Association (AAA) Conference proceedings of the 103<sup>rd</sup> annual meeting on Bold Transformations Toward A Prosperous Society; 2019, Aug 10-14; San Francisco, CA.
- World Conference on Transformative Education/ Kakamega, Kenya; Paper presentation “Adult Education & Dialogue”. (July 2018)

## Curriculum Vitae

- The Public Policy and International Affairs / Bloomington IN; The Public Policy and International Affairs (PPIA) “Moving the World Forward” Conference was held in October 2015 with 78 undergraduate students interested in various topics in public affairs from all over the U.S. (10/22/15-10/24/15)
- The Public Policy and International Affairs / Bloomington IN; Hosted by SPEA for undergraduate students from across the nation to discuss the value of pursuing a Graduate degree in the field of Public Policy and International Affairs. (10/24/2014 - 10/25/2014)
- Association of Governmental Accountants/ Indianapolis IN; Central Indiana Association of Governmental Accountants - Luncheon Speaker Series “What Does Your Financial Report Say About Your City?” Presented an interactive approach to financial statements featuring the latest in clicker technology. (12/5/2013)
- Association of Governmental Accountants /SAN DIEGO CA T117: CGFM: Government Financial Management Certification for the Future (7/31/2012) - Speaker

## Publications

- McCaster, A. (2018). Elements of Accounting for Business, Governmental & Not-for-profit organizations., <https://app.tophat.com/marketplace/business/finance-&-accounting/textbooks/elements-of-accounting-for-business-not-for-profit-and-governmental-organizations-antonette-mccaster/3146/>
- McCaster, A. (2019). Adult Education and Dialogue: Utilizing Project-Based education as a method to provide transformative change in both students and teachers. *Global Journal of Transformative Education*, 1( 1), 46-51 <https://scholarworks.iu.edu/journals/index.php/gjte/issue/current>
- *Incorporating Dialogue Education Practices to Foster Active Learning in Undergraduate Student Teams* (2019). [LinkedIn page]. Last Modified 19 August. <https://www.linkedin.com/feed/update/urn:li:activity:6569358224443666432>

## Professional development

- Association of Governmental Accountants (AGA) Professional Development Conference attendee (2012, 2013, 2014, 2015, 2016 and 2019) Sectional leadership attendee (2015)
- American Accounting Association (AAA) Professional Development Conference attendee (2012, 2014, 2016 and 2019)

## **Curriculum Vitae**

- Center for Innovative Teaching & Learning
  - Design Instructional Videos for Your Face-to-Face, Online, or Flipped Course. I used this workshop to update and evaluate the effectiveness of three videos I created to provide additional material for students to use at their own pace.
  - "Using Class Time Effectively". This workshop focused on how instructors can make the best use of class time between, in class activities, group work, and lectures.
- Course Development Institute
  - Developed a revised approach to instruction of Graduate Course in Governmental Accounting and Financial Reporting (V542)

## **Service to school**

- Grant Thornton Scholar (1/1/19-6/30/20) - help support the design and execution of student-facing events such as developing a case study for a case competition, designing a data jam, etc., participate in a forum/conference or serve as a judge for a case competition or other student event, and participate in an annual faculty banquet and/or potentially visit the Grant Thornton office once a year in Washington, DC.
- Faculty advisor to the IU Student Chapter of Association of Governmental Accountants (AGA) (2015-present)
- Search Committee- Budgeting/Finance/Accounting position - Served as part of the search committee reviewing candidates' applications and supporting materials, preparing a rubric for ranking candidates, presenting those to the search committee chairman. Also participated in interview process including job talks, and provided feedback regarding final candidate selections. (1/1/15-2/13/15)
- Undergraduate Curriculum Committee Member (8/1/12 - 12/31/15)
- SPEA Career development office interviewer (6/19/13 & 7/1/13)
- IU in DC Program support - Served as a member of the interview panel for positions and reviewed student essay for Scholarship applications. (2/11/13 - 2/12/13)