

The Relationship between Gender and Cold-calling to Increase Voluntary Student
Participation in the Accounting Classroom

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KATHY C. DUNNING

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Approval Page

The Relationship between Gender and Cold-calling to Increase Voluntary Student
Participation in the Accounting Classroom

By

Kathy C. Dunning

Approved by:

Melanie Shaw

10/10/17

Chair: Melanie Shaw, Ph.D.

Date

Certified by:

Peter Bemski

10/10/2017

Dean: Peter Bemski, PhD

Date

Abstract

While previous research has shown results supporting the use of cold-calling (calling on a student whose hand is not raised) to increase voluntary student participation in the accounting classroom, it was previously unclear how this pedagogical tool may generate results across genders. Research was done in order to determine any differences in voluntary response rates between genders from the use of cold-calling, as well as to determine any differences in students' comfort level with class participation between genders as a result of cold-calling. The ability to understand any potential gender response differences when using cold-calling in an effort to increase voluntary participation has implications for students preparing for a career in accounting, the accounting firms seeking to employ them, and the faculty which instruct them. This study determined the extent to which cold-calling techniques increased voluntary student participation in accounting class discussions across genders but also determined how cold-calling affected students' comfort level with their participation across genders. The quantitative, between-subjects study design used students enrolled in eight separate upper-level accounting courses, for one semester, at a small, private university in the southeastern United States. Four courses served as the treatment or intervention courses, where cold-calling was used, and four courses served as control courses, where cold-calling was not employed. All eight courses had an initial survey of student attitudes regarding voluntary class participation and a pre-intervention class discussion at which an unbiased observer was present to record the incidences of voluntary participation by student gender. Cold-calling was then introduced to the treatment classes only. Towards the end of the semester, all students took a second survey regarding their level of

voluntary class participation and their attitudes related to voluntary class participation. There was also a second, scheduled class discussion where the observer recorded the incidences of voluntary participation by gender. The findings showed a significant relationship between the use of cold-calling and increased voluntary participation in class discussions as measured by observations of participation in class discussions of treatment groups and control groups. The findings further demonstrated a significant difference in voluntary participation response rates between males and females who had all received the cold-calling intervention. The findings further indicate females demonstrate a positive and significant response to cold-calling, which has implications for the accounting classroom and the accounting profession. The results demonstrated a statistically significant increased level of comfort with participation for females after cold-calling, but males did not respond as expected in terms of comfort level with voluntary participation following the cold-calling intervention. The results indicate no significant difference in comfort level with voluntary participation following the intervention of cold-calling when measured for cold-called males and females. Future study is recommended to determine if there is a relationship between cold-calling and increased learning as manifested in higher grades or exam scores.

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Chapter 1: Introduction

According to the American Institute of Certified Public Accountants' (AICPA) Core Competency Framework (AICPA, 2005) and Content and Skill Specification for the Uniform CPA Examination (AICPA, 2009) accounting education should simulate professional settings that students will encounter in their future careers. The accounting classroom should enhance students' oral communication competencies (Black, 2012) as well. Albrecht and Sack (2000) also established that oral communication skills are a central function of the accounting profession.

In light of this recommended competency, accounting education should support a pedagogy that encourages students across genders to consider information in order to offer a well-thought out and reasoned oral response, such as what is modeled by student participation in class discussions within the accounting classroom (Black, 2012; Camp & Schnader, 2010). Research using pedagogical methods in the undergraduate university accounting classroom to increase voluntary student participation in classroom discussions have been shown to effectively increase student voluntary participation and to increase student mastery of accounting concepts (Braun & Sellers, 2012; Dallimore, Hertenstein, & Platt, 2013; Jones, 2008). Dallimore et al. (2013) presented results indicating the technique of cold-calling, calling on a student whose hand is not raised, effectively increased voluntary student participation in class discussions along with increasing students' comfort level with their participation in class discussions. Earlier work by Dallimore et al. (2010) established the important positive relationship between a student's comfort with participating in class discussions, their level of learning, and the development of oral communication skills. However, recent research related to efforts to

increase voluntary student participation as well as increasing students' comfort levels with classroom discussion has called for the examination of student voluntary participation by gender (Bandura, et al., 2012; Dallimore et al., 2013; Weaver & Qi, 2005). There was a need for research to determine if the pedagogical tool of cold-calling has the potential to increase voluntary student participation in accounting classroom discussions equally between genders as well as equally increasing students' comfort level with participation across genders. The implications for accounting education, hiring practices for accounting firms, and new accounting hires' subsequent assignments could be affected by this gender research.

Background

After more than 25 years of teaching accounting at the collegiate level, personal observations indicated a problem with limited numbers of students voluntarily participating in accounting classroom discussions. This has been supported by Miller and Stone (2009) who have shown accounting majors have a potentially higher level of apprehension toward public speaking than other college majors. This lack of voluntary student participation in accounting discussions is supported by Dallimore et al. (2010, 2013) and is contrary to the skills cited in published reports by professional accounting organizations (AICPA, 2005; Black, 2012) that establish the necessary skills entry-level accountants should possess, such as oral communication skills and the ability to assess and respond verbally to clients in various situations. The AICPA's 2005 Core Competency Assessment (2005) cited communication skills as a necessary competency to enter the profession. To succeed in the accounting profession, students should be aware that situations would change from one client to the next as accounting standards change

from year to year (Schliefer & Dull, 2009). This arena of constant change reinforces the need for accounting students to develop their reasoning, and problem-solving skills, which can be accomplished through voluntary participation, where student response is given voluntarily, in classroom discussions (Greenhalgh, 2007).

Caspi, Chajut, and Saporta (2008) found that approximately 55% of students in business education either never or seldom participated in class discussions, and that women participated even less than men did. Research is necessary to validate pedagogical methods that will encourage and aid accounting majors to voluntarily participate more in class discussions and to ensure that increased voluntarily participation is equal between genders. This research added to the work of Dallimore et al. (2013) in three ways. First, voluntary participation results were obtained across genders. Secondly, a single faculty member led class discussions in classes where cold-calling was introduced. And lastly, control classes will be used to contrast the intervention classes. This research is relevant to students seeking to enter accounting as a profession, where those skills which are enhanced by participation in class discussion are sought after (Black, 2012) as well as being relevant to accounting firms interested in hiring entry-level accountants who exhibit those same skills (Bandura et al., 2012).

Accounting firms are also beginning to examine gender differences in communication and participation in efforts to effectively manage and train new entrants across genders (Lehman, 2012) thereby making the new entrants more effective in the workplace (S. Glick, personal communication, July 30, 2014). Gender differences in relation to the cold-calling tool could also have implications for teaching in the accounting classroom. Since research has shown evidence that females perceived they

had lower oral communication skills than males (Uyar & Gungormus, 2011) cold-calling could be a tool to increase females' comfort levels with class participation.

Statement of the Problem

There is a lack of participation in class discussions on the part of accounting students across genders (Bandura et al., 2012; Dallimore et al., 2013, 2010; Miller & Stone, 2009; Weaver & Qi, 2005). Furthermore, all accounting majors have been shown to have a potentially higher level of apprehension toward public speaking than other college majors (Miller & Stone, 2009) with female accounting majors speaking in class less than males (Uyar & Gungormus, 2011) and speaking with less confidence than males (Caspi, Chajut, & Saporta, 2008). The specific problem is the lack of, or discomfort with, voluntary participation in upper-level accounting classes by all genders and by females in particular. This lack of voluntary student participation across genders is contrary to the necessary skills all entry-level accountants should possess, like oral communication skills and the ability to assess and respond verbally to clients in various situations (Black, 2012).

Evidence of pedagogical techniques, such as cold-calling, that produce the desired results of increasing student participation in the accounting classroom, along with increasing students' personal comfort levels with participation (Dallimore et al., 2006, 2008, 2010, 2013; Kerby & Romine, 2009; Miller & Stone, 2009; Schleifer & Dull, 2009) exists. However further research has been called for in relation to gender effects on cold-calling versus voluntary participation in the classroom (Dallimore et al., 2013; Weaver & Qi, 2005). Understanding potential gender response differences when using cold-calling in an effort to increase voluntary participation has implications for both the

students preparing for an accounting career and firms seeking to employ accounting graduates possessing the abilities enhanced by voluntary participation (Bandura et al., 2012).

Purpose of the Study

The purpose of this quantitative, quasi-experimental, between-subjects design study was to determine what difference, if any, that cold-calling techniques would produce in rates of voluntary student participation in accounting class discussions between genders and how cold-calling may change students' comfort level with their participation in class discussion between genders. Students were surveyed in all four intervention classes and all four control classes to determine their self-perception of their level of class participation and their comfort level with participating in class and case discussions, by gender, at the beginning and at the end of a semester. In this study, class discussions were based on assigned case studies, which have been recognized to use real world situations to allow students to develop and practice skills (Paskvan & Maxwell, 2011) needed in the accounting profession. One assigned class discussion was held within the first three weeks of the semester in both the intervention classes and the control classes, prior to the introduction of cold-calling in the intervention classes. During this discussion, an unbiased observer was present to objectively record students' voluntary responses by gender, where a student voluntarily responds to a question without being cold-called, and non-voluntary responses by gender, where a student responds only after being cold-called. After cold-calling was introduced in the intervention classes, class discussions were conducted regularly throughout the semester in all intervention and control classes according to normal class curriculum. At the end

of the semester, one observer observed one assigned case discussion in all classes, repeating the process of objectively recording the response type by gender (Camp & Schnader, 2010; Dallimore et al., 2013). The trained, unbiased observer recorded the incidences of student participation, coding them as either voluntary or non-voluntary. Participants were enrolled in required, upper-level accounting courses in a small, private undergraduate and graduate degree-granting university in the southeast United States.

Research Questions

The following research questions were used to develop the study regarding the effect of cold-calling on voluntary student participation in the accounting classroom to determine if voluntary response rates are different between males and females who have been cold-called, and males and females who have not been cold-called. These questions were used to understand the effects of cold-calling on voluntary student participation, where a student responds without being cold-called, the students' comfort level with the process of participation, and the effect gender may have on voluntary participation and comfort level with participation in relation to cold-calling. Voluntary participation was where a student responds without being cold-called, and participation was where a student responds as a result of cold-calling, will be measured by observation whereas student comfort level with participation will be measured by survey results.

Q1. What difference, if any, is there between the voluntary participation response rates of males and females who have been cold-called and the voluntary participation response rates of males and females who have not been cold-called?

Q2. What difference, if any, is there in the comfort level with class participation between males and females who have been cold-called and males and females who have not been cold-called?

Hypotheses

H1₀. There is no difference in student voluntary participation response rates between males and females who have been cold-called and males and females who have not been cold-called.

H1_a. There is a difference in student voluntary participation response rates between males and females who have been cold-called and males and females who have not been cold-called.

H2₀. There is no difference in comfort level with class participation between males and females who have been cold-called and males and females who have not been cold-called.

H2_a. There is a difference in comfort level with class participation between males and females who have been cold-called and males and females who have not been cold-called.

Nature of the Study

A quasi-experimental, between-subjects design was used to study the differences in rates of voluntary participation between genders when cold-calling was introduced into the accounting classroom. The proposed study also examined any significant differences in comfort levels between genders after the introduction of cold-calling. The study was conducted in eight separate courses of an upper-level accounting course, using four intervention courses and four control courses. Both the intervention course participants

and the control course participants took surveys at the beginning and end of the course in order to measure both a baseline attitude regarding voluntary participation in the accounting classroom and the participants' perceived level of participation. Class discussions were also scheduled at the beginning and end of the course in all eight courses, at which an unbiased, trained observer coded student responses to questions asked by faculty in the class discussion, by gender. For intervention courses, where cold-calling is introduced, the responses were coded as either a voluntary response, or a response as a result of being cold-called; only the incidences of voluntary responses by gender were coded in the control courses, due to the absence of cold-calling in these classes.

The independent variables in this study were the introduction of the cold-calling pedagogical tool in the intervention courses and student gender. The study focused on the effect of these independent variables on rates of voluntary participation and student attitude regarding participation. The effect of the independent variables on the dependent variables of voluntary student participation and student comfort level with participation was measured by the above-mentioned surveys and observations.

The use of *t*-tests to compare survey responses between genders is supported by Guthrie and Jones (2012) and is particularly appropriate for small samples. Previous studies which assessed classroom participation and employed the use of surveys with a five- or seven-point Likert scale response system also used *t*-tests in the analysis of results (Klibi & Oussii, 2013; Stainbank, 2009; Uyar & Gungormus, 2011). A one-way analysis of variance (ANOVA) was used to determine the interaction effect of cold-

calling and gender on students' voluntary participation as measured by observation (Dimitrov & Rumrill, 2003).

Significance of the Study

Literature related to students' voluntary participation in the accounting classroom has focused either on the lack thereof (Miller & Stone, 2009) or various methods to increase accounting students' voluntary participation (Dallimore et al., 2010, 2013; Weaver & Qi, 2005) in the classroom through the use of assorted pedagogical tools and methods. This is in light of research, which presents conclusions as to the necessary oral communication skills accounting students should possess in order to transition seamlessly from the accounting classroom to the entry-level accounting position (Black, 2012). This research will be significant for those that design curriculum for accounting students, where those skills which are enhanced by participation in class discussion are sought after (Black, 2012; Greenhalgh, 2007; Schliefer & Dull, 2009).

This research is also relevant to accounting firms interested in hiring entry-level accountants who exhibit those same skills (Bandura et al., 2012). Accounting firms and industries that hire accounting majors are beginning to examine gender differences in communication and participation in efforts to effectively manage and train new entrants across genders (Lehman, 2012) thereby making the new entrants more effective in the workplace (Bandura et al., 2012; S. Glick, personal communication, July 30, 2014). Gender differences in relation to the cold-calling tool could also have implications for faculty who will be teaching in the accounting classroom.

Definition of Key Terms

The section below serves to identify and define key words used in this study. Key words listed below not cited by literature are operationalized for the purposes of this study.

American Institute of Certified Public Accountants (AICPA) Core

Competency Framework. Defines the skills-based competencies needed by all students entering the accounting profession by using the three categories of functional competencies, personal competencies, and broad business perspectives. Functional competencies relate to technical accounting skills; personal competencies address the problem-solving, decision-making, leadership, and communication skills required; and the business perspective competencies address external business awareness while maintaining a client focus (American Institute of Certified Public Accountants, 2005) (see Appendix B for a complete listing of the competencies).

Class discussion. Class discussions based on assigned cases which use real world situations to allow students to develop and practice skills (Paskvan & Maxwell, 2011).

Cold-calling. Call(ing) on a student who has not raised their hand (Bean & Peterson, 1998; Dallimore et al., 2013).

Control classes. Classes where cold-calling was not introduced.

Defensive volunteering. The tendency for students to respond in a discussion and volunteer an answer on a subject in which they feel more prepared in order to avoid being cold-called during discussion of a topic for which they feel less prepared (Dallimore, et al., 2013).

Gender. Students self – selection as either male or female on surveys.

Intervention classes. Classes where cold-calling was applied.

Participation. Indicates a student response as a result of cold-calling.

Upper-level accounting course. Undergraduate accounting courses taken by an accounting major during the junior and/or senior year of college.

Voluntary participation. Indicates a student response given voluntarily; not as a result of cold-calling.

Summary

Accounting faculty, as well as accounting professionals, agree on some of the primary skills necessary for students to successfully enter the accounting profession. Voluntary participation in accounting classroom discussions was cited as one of those primary skills (AICPA, 2009; Black, 2012). Dallimore et al. (2013) responded to this by engaging in research that indicated the technique of cold-calling, when used in the accounting classroom, increased the rate of voluntary participation on the part of the students, as well as improved their comfort with voluntary participation.

Others have noted distinct differences between genders in rates of participation in the classroom (Caspi et al., 2008; Landau & Meirovich, 2011). As a result, there is a growing body of literature that recognizes the importance of increasing student voluntary participation across all genders (Bandura et al., 2012; Behn, Ezzell, Murphy, Rayburn, Stith, & Strawser, 2012; Dallimore, et al., 2013; Weaver & Qi, 2005) especially as it relates to potential work assignments in the accounting firm (Bandura et al., 2012; Behn, et al., 2012). Additional research was needed to determine if the method of cold-calling, that had previously been shown to increase voluntary participation in the accounting

classroom, would be equally effective across all genders and would equally impact attitudes regarding voluntary behavior across genders. A quasi-experimental research plan was used in a research design which measured any differences in rates of voluntary response between males and females by using coded observations, and any differences in student comfort level with voluntary responses between males and females through the use of survey instruments.

Chapter 2: Literature Review

The purpose of this quantitative, quasi-experimental, between-subjects design study was to determine what difference, if any, that cold-calling techniques would produce in rates of voluntary student participation in accounting class discussions between genders and how cold-calling may change students' comfort level with their participation in class discussion between genders. In order to demonstrate a logical platform to support the need for this research, a literature review is presented that documented the lack of student participation in class discussions in general and in accounting courses in particular. An argument was made through the literature review as to the overall educational benefits to a student from participation in class discussion, followed by a discussion of how these educational benefits are particularly relevant to accounting majors entering the arena of professional and public accounting in terms of what specific attributes and interpersonal communicative skills the accounting profession is currently seeking in new hires. Literature was also reviewed which outlines the evolution of traits required of accounting graduates by the accounting profession, from foundational technical skills to soft skills, and how this evolution has been implemented in the classroom. Literature was also presented which criticizes the lack of the effective incorporation of proven beneficial pedagogical tools into the accounting classroom currently.

Articles are presented which outline the various classroom participation methodologies which have been employed by academicians to increase student voluntary class participation, followed by a discussion of how these methodologies could potentially generate different results between genders, and why gender differences in

participation can be relevant in the accounting profession as well as in the accounting classroom. Literature supporting the quantitative, quasi-experimental nature of the between subjects research design have also been presented along with a brief overview of previous methodologies employed in previous studies of pedagogical interventions in the university classroom.

Documentation

Literature searches for academic, peer-reviewed journal articles sourced through electronic databases were conducted primarily through the University of Mobile, in Mobile, Alabama, and secondarily through the electronic resources available through Northcentral University. Searches were conducted in the topic areas of student voluntary participation and methods to increase student participation in the classroom, accounting education, student participation by gender, case discussion and the professional accounting skills enhanced by case discussion, and the skills currently required of college graduates to successfully enter the accounting profession. Specific search terms used during the primary literature search included the following: Accounting education, accounting students, participation, critical thinking skills, participation and gender, Pathways Commission, AICPA Core Competency Framework, voluntary participation, cold-calling, oral communication, case discussion, voluntary behavior, communication apprehension, participation apprehension, technical skills, soft skills; all terms either used alone or in Boolean phrases. Databases used include ABI/INFORM Complete (ProQuest) for Business, Academic Search Premier (EBSCO), Business Source Premier (EBSCO), and Accounting and Tax (ProQuest). ProQuest's *My Research* was used to categorize, classify and save those research articles accessed electronically. Additional

sources of literature included hard copy subscriptions to professional journals, both personally owned subscriptions as well as library subscriptions maintained at the University of Mobile, along with professionally oriented accounting documents provided under the auspices of personal membership in the American Accounting Association (AAA) and the American Institute of Certified Public Accountants (AICPA), the Institute of Management Accountants (IMA) and the Association of Certified Fraud Examiners (ACFE). Several articles were accessed through inter-library loans facilitated by the Reference Library staff at the University of Mobile.

Student Participation in the Classroom

Much of the foundation for the discussion of student participation in a university classroom setting has been guided, in part, by the theoretical framework of Bean (1985) and Tinto (1993) which surmised university students' academic success is related to the level of academic involvement and participation contributed by the student. Bean (1985) and Tinto's (1993; 1997) concepts built further on Astin's (1984) view of student involvement, which was defined as the mental and physical energy which students devoted to the academic process. This framework led researchers to demonstrate that student involvement and participation in classroom discussion not only enhanced students' overall learning in the classroom, but suggested an eventual causal relationship to degree attainment at the university level (Svanum & Bigatti, 2009).

Enhancing students' voluntary participation in the classroom has implications for their future career success beyond the primary goal of increased communication and problem-solving skills. The link between accounting students' voluntary behavior in the accounting classroom and their later voluntary behavior in the workplace was studied by

Bandura et al. (2012). Since employee voluntary behavior in the workplace is seen as a beneficial trait for the employer in terms of job dedication and interpersonal skills, evidence of a relationship between student academic attributes and the tendency towards voluntary behavior could be helpful for accounting recruiters and hiring managers. Furthermore, a relationship between student GPA and a predisposition toward voluntary behavior was discovered through analysis of survey responses and individual student cooperation within an assigned team case study (Bandura et al., 2012).

It is important to make the underlying connection between student participation and participation in class discussion within the literature for the purposes of this research. Classroom discussion is the primary method of student participation (Doran, 2011; Greenhalgh, 2007; Kerby & Romine, 2009; Schmidt-Wilk, 2010). Adding to the foundational argument of this study, Greenhalgh (2007) not only reinforced the use of case studies for class discussion, as a method to open the classroom to multiple and diverse interpretations of an issue, but confirmed the use of case study methodology in class discussions as a means to improve students' managerial (and) problem-solving skills and develop their abilities as critical and creative thinkers as well. Class discussion opens up the potential solution to business problems found in case studies to students through shared and interpretive strategies (Greenhalgh, 2007). Greenhalgh's (2007) results were equally supported by the later research of Schmidt-Wilk (2010). Kerby and Romine (2009) advocated the use of case studies in class discussions as a means to improve oral communication skills in accounting students, but they did see some limitations to utilizing this tool due to the large time commitment necessary for faculty to employ this tool in the classroom. Paskvan and Maxwell (2011) refuted this by citing the

use of case studies as one of the most convenient and effective methods to incorporate communication and professional skills into the classroom. Other studies saw improvement in accounting students' oral communication skills in the accounting classroom after undertaking extensive public-speaking training for accounting majors; yet this too requires a significant dedication of class time, which faculty might be reluctant to do (Miller & Stone, 2009). Smith and Stitts (2013) found faculty interest and engagement was crucial for the success of any pedagogical attempts to effect change in business students' communication skills. Also, the lack of participation in class discussions may have cultural relevance for some international students who are more familiar with classroom environments where passive learning is the norm and two-way communication between faculty and students is restricted (Doran, Healy, McCutcheon, & O'Callaghan, 2011; Rajaram & Bordia, 2011).

Jones (2008) equated student involvement and participation in the classroom most closely with the process of class discussion, which is relevant in support of the basis of this proposed study. The relationship between participation and class discussion is also advocated by Weimer (2014), who proposed that participation and class discussion are interrelated on an exchange continuum within the collegiate classroom. Faculty should treat the classroom as an arena where student participation and discussion continually evolve in relation to each other (Weimer, 2014).

A lack of student participation in the classroom. With only a quarter of all students participating in class discussions, and approximately half of that amount doing so on a regular basis (Foster, Krohn, McCleary, Aspiranti, Nalls, Quillivan,

& Williams, 2009; Weaver & Qi, 2005) it is clear to see why research efforts in accounting education have been recently devoted to improving these numbers (Bandura et al., 2012; Dallimore et al., 2010, 2013). Even though some students argue against the necessity of their class participation with the claim they learn by listening, there remains the issue of the non-participants failing to develop the professional skill of expressing their point of view in a group situation (Dallimore et al., 2010; Foster et al., 2009). Most faculty agree there is a need to broaden the range of students who typically participate in class discussions within the classroom (Dallimore et al., 2006). Furthermore, the lack of student participation in classroom discussions may take on additional significance for some international students who may either have a background where expressing individual opinions may have been previously discouraged within their home culture (Rajaram & Bordia, 2011) or for those students who use English as a second language (Evans & Cable, 2010).

Ironically, students participate more in classroom discussion when other students participate (Souza, Dallimore, Aoki, & Piling, 2010) which may leave faculty feeling frustrated by this circuitous logic. Further exacerbating this problem is the fact that in spite of the emphasis given recently to the communication and participation requirements of the accounting profession, accounting majors are still perceived to have lower oral communication requirements within their profession by their collegiate peer group (Ameen, Jackson, & Malgwi, 2010). This persistent belief on the part of accounting majors that oral communication is not a requirement of their chosen profession (Ameen et al., 2010) could, in turn, potentially cause some self-selection of college majors, as accounting majors have higher levels of apprehension regarding oral communication than

other college majors (Ameen et al., 2010; Miller & Stone, 2009; Stanga & Ladd, 1990). Unfortunately, a commonly held misperception of the accounting profession which still remains is that the accounting profession primarily requires math skills (Meixner, Bline, Lowe, & Nouri, 2009) instead of the technical and communication skills outlined as necessary by the profession (AICPA, 2009; 2005; Black, 2012). Earlier research examined not only oral communication apprehension, but accounting majors' reticence to work in groups, which was found to be significantly higher than other business majors within the same universities (Borzi, & Mills, 2001) at a time when the ability to work in groups is shown to be a highly valued skill in the field of accounting (Rudman & Kruger, 2014).

The fact that women participate in classroom discussions less than men (Caspi, et al., 2008) can have far reaching implications within the accounting profession. For example, men comprised 56% of all professional accountants at certified public accounting firms in 2012 and comprised 81% of all partners in certified public accounting firms (Baysden, 2013). And at a time when the 150 semester hour rule is legislated in all but two states in the United States, the trend for gender mix at the graduate level of accounting education indicates female enrollment is dropping (Nelson, Vandrzyk, Quirin, & Kovar, 2008). This finding by Nelson et al., (2008) places even fewer females in the pipeline for management positions in public accounting firms. Accounting education should work to prepare all students equally to not only be well-equipped to enter the accounting profession, but also to be able to advance equally within the profession.

Benefits of Student Participation

Students that participate learn more (Braun & Sellers, 2012; Dallimore et al., 2008, 2010, 2013; Svanum & Bigatti, 2009; Ward, Yates, & Song, 2009; Young, 2010). This statement is also supported by Weaver and Qi (2005) who addressed the importance of students' active involvement in learning and how active involvement facilitates critical thinking and the retention of information by students. Students increase their level of preparation for class assignments, class attendance, and level of class participation when participating in the learning process (Braun & Sellers, 2012). Participation by students in the classroom imposes a level of accountability upon the student (Jones, 2008) which demands reading and preparation prior to attending class. This theory is also supported by Young (2010) who found the inclusion of demanding learning tasks into the curriculum resulted in students who participated more in class and exhibited higher levels of learning as indicated by increased grade averages.

From another research perspective, a student's involvement in the classroom was found to significantly correlate to their assessed level of business knowledge more so than grade point average or gender (Ward et al., 2009). Brickner and Etter (2008) defined active student participation as a "pedagogical approach in which students do not passively acquire knowledge, but instead are actively involved" (p. 87) and participate in the learning process. Greenhalgh (2007), Kerby and Romine (2009), and Schmidt-Wilk (2010) also made the necessary connection between student learning and the benefits of classroom participation to the student. They presented the argument that classroom discussion is a primary method of students participating in the learning process, allowing students exposure to and experience with formulating their own opinions and views.

Participation in classroom discussion exposes students to the possibility of multiple answers to one question (Weimer, 2014) which enables the student to assess potential solutions, which is also perfect training for the profession of accounting where ambiguity is a constant factor in decision-making. Jones (2008) saw the intent behind class participation as a means for student accountability and involvement, as well as a means to cause students to wrestle with formulating their own opinions when considering a concept. This connection between student participation in class discussion and the resultant benefits of class discussion is a necessary premise in order to create a bridge between the use of cold-calling during class discussions to increase student participation and the use of cold-calling to initiate voluntary participation in the accounting classroom in order to ultimately create better accounting professionals (Dallimore et al., 2013).

Dallimore et al. (2010) provided research results which showed a positive relationship between the frequency of participation in the accounting classroom, the level of student preparation for class, and the level of student comfort with class participation. This research made an important and positive connection between students' self-reported comfort with class discussion and an objective measure of their learning: as one increased, so did the other. Dallimore et al. (2013) further advanced their research on participation in the accounting classroom by measuring the effects of the introduction of the pedagogical tool of cold-calling on students' voluntary participation rates. Results indicated using cold-calling in the accounting classroom not only increased the desired effect of increased rates of voluntary student participation in class discussions, but that cold-calling also contributed to increased student comfort levels with the process of participation (Dallimore et al., 2013). Dallimore et al. (2013)

and others, first Weaver and Qi (2005), then Bandura et al. (2012) and Behn et al. (2012) have notably suggested further research into the area of student participation in accounting classroom discussions which would incorporate a focus on any potential gender effects of participation.

Student participation levels can be increased through specific pedagogical manipulation. The results of Foster et al. (2009) supported this argument by increasing the class participation of those students who had a low rate of responding by up to 30%. However, Weaver and Qi (2005) originally pointed out that, while the data clearly indicate the benefits of student participation in the classroom, faculty are not always incorporating the appropriate pedagogy into action within the classroom which would stimulate student participation. Cunningham (2008) supported this point by calling for a systematic evaluation of classes, followed by an immediate adjustment to courses in order to improve student participation and learning. The Pathways Commission, which was accounting academia's response to the lack of career readiness of accounting graduates, also called for major revisions in the process of accounting education; specifically with a focus on incorporating soft skills into the classroom (Behn et al., 2012; Black, 2012; Braun & Mauldin, 2012). There is a gap between what and how faculty are currently teaching and what students are currently expected to gain from the accounting classroom experience (Cunningham, 2008; Dallimore et al., 2008; Weaver & Qi, 2005).

Researchers have steadily indicated that student involvement with the academic course material results in increased learning (Dallimore et al., 2010, 2013; Ward et al., 2009; Weaver & Qi, 2005). However, this overall acknowledgement of increased

learning resulting from increased class participation fails to address areas in which student participation could specifically aid certain majors; in this case, accounting.

Benefits of student participation for professional development. Higher-level learning occurs when students focus on their participation within the classroom, recognizing the most important aspect of any learning environment may be the connection between student-involved learning strategies and the recognition that these strategies promote independent and lifelong learning (Brickner & Etter, 2008). The Accounting Education Change Commission (AECC) (1990) through the auspices of the American Accounting Association (AAA) strongly advised the use of student-involved learning strategies in accounting courses for this very reason, since accounting is a profession that mandates numerous hours of annual continuing education.

There is a link established between the use of case studies for discussions in the classroom and students' ability to become discriminant users of information and to draw lessons and inferences from complex information (Camp & Schnader, 2010; Christensen & Carlile, 2009; Maier-Lytle, McGuire, & Ehlen, 2010; Yu, Churyk, & Chang, 2013) which will benefit them in later professional endeavors. The use of case studies for class discussions effectively introduces professional business practices and the development of career skills into the classroom (Paskvan & Maxwell, 2011). Helping students approach data from a research perspective leads to the development of successful professionals who can peruse information, analyze information, form hypotheses, discuss and debate in the classroom and then revise hypotheses accordingly (Christensen & Carlile, 2009). This supports the original intent of the AICPA Core Competency Framework (2005) which addresses decision making and problem solving, along with oral communication

skills, as primary personal competencies which accounting students should master in order to be successful upon entering into the accounting profession.

Participation in class is a way to both increase knowledge and apply it contextually (Jones, 2008) in order to help develop those same skills mentioned above. Case studies are recommended for class discussion in order to allow accounting students to have exposure to practical application problems which utilizes problem-solving skills, technical accounting knowledge, and oral presentation skills (Maier-Lytle, et al., 2010). Landau and Meirovich (2011) sought to determine how classroom participation related to the development of attributes such as adaptability, interpersonal skills, and stress tolerance within the students. Opportunities for classroom participation were positively related to the development of these attributes for males, but not for females (Landau & Meirovich, 2011). Mo (2011) studied the role of student motivators to participate in class and the relationship between intrinsic motivation and classroom performance. The experimental results indicated mandatory motivators, represented in this particular study by in-class quizzes, were less valuable in enhancing learning than non-mandatory or voluntary motivators, represented by voluntary on-line quizzes (Mo, 2011).

What the accounting profession requires. As far back as 1931 there was a call for accounting educators to align their instruction of accounting students with what the profession required for entry into the practice of accounting (Stevenson, 1931). And as demand for accounting graduates reaches an all-time high (Baysden, 2013) it becomes even more imperative than ever for accounting faculty to employ techniques that facilitate the incorporation of necessary professional entry-level skills by students across all genders. This is especially true in light of literature that states the call for change in

accounting education has been largely ignored and that accounting education still focuses on technical skills despite the overwhelming professional consensus that technical skills alone is an inadequate foundation of accounting education (Gupta & Marshall, 2010; Swain & Olsen, 2012).

The foundational movement of recent research into accounting education's efforts to adapt to what the profession is requiring of student graduates entering the profession was predicated on the statements of the Core Competency Framework issued by the American Institute of Certified Public Accountants (AICPA, 2005). The three Core Competencies of that Framework are Functional Competencies, Broad Business Competencies and Personal Competencies (AICPA, 2005) (see Appendix B for a complete listing of the Competencies). It is this last element of Personal Competencies which this research sought to address. Personal competencies are connected with the ability of accounting students to solve problems and make decisions, to become leaders in the profession, as well as to orally communicate information in a manner that can be understood by those both within and outside the accounting profession (Jackling & De Lange, 2009).

Barriers arose when trying to align the profession of accounting with accounting education. One element complicating the institution of a standardized curriculum in accounting education is the number of voices entering into the debate. Universities have various and different graduation requirements for a degree in accounting; states have different requirements for student eligibility to sit for the Certified Public Accountant exam; and students ultimately pursue a myriad of accounting roles and positions upon graduation; making a single definition of accounting education almost impossible

(Bonner, 2010). In addition, textbook authors are not supplying reinforcing materials for the soft skills currently required by the profession, such as communication, critical thinking, and teamwork skills; but instead are focused on supplying texts and resource materials which primarily reinforce only the technical skills necessary for accounting (Gupta & Marshall, 2010).

However, the academic side of accounting was equally as concerned, if not more so, about the perceived lack of career readiness on the part of accounting students for the profession, and in seeking ways to remedy this, the American Accounting Association and the AICPA partnered to create The Pathways Commission (Behn, et al., 2012; Black, 2012). The Pathways Commission was composed of respected accounting academicians and high-profile accounting practitioners whose overarching recommendation was to convert thought to action when it came to sustaining efforts at future change within accounting education (Behn et al., 2012). The Pathways Commission recognized the major underlying impediments to change in accounting education can span from individual faculty who “delay in incorporating effective practices in pedagogy” (Behn et al., 2012, p. 599) because of a lack of experience, all the way to deans and departmental chairs either unwilling to implement change or who misunderstand the importance of pedagogies which can hold professional relevance (Behn et al., 2012). Those members of the Pathways Commission responsible for implementation of the recommendations will be heavily engaged in lobbying efforts to encourage accounting academicians to experiment with the recommended changes in accounting education (Braun & Mauldin, 2012). This literature supported the current research into professionally relevant pedagogical methods applied across genders.

Another way in which accounting academicians attempted to address the changes demanded by the American Institute of Certified Public Accountants Core Competency Framework is through the creation of capstone courses in accounting. The competencies gained from these capstone courses which were linked to the competencies delineated in the Framework (see Appendix B) were identified as follows: Developing research capabilities; honing problem-solving and critical thinking skills; synthesizing foundational knowledge to address new issues; enhancing teamwork skills, enhancing oral and written communication skills; and overall personal skills needed to function as a professional accountant (Johnson & Halabi, 2011). For accounting programs that lack the latitude to introduce new courses into an already overflowing curriculum, development of these skills in accounting students may derive more easily from the introduction of proven pedagogical methods into currently existing courses.

The call for a well-rounded, professionally competent accounting graduate is most prevalent in the literature related to Certified Professional Accountants (CPAs) (Black, 2012; Grant Thornton, 2010) however, industry has also made a plea for a change in accounting education in order to better equip graduates to enter the area of management accounting as well (Gupta & Marshall, 2010; Tatikonda & Savchenko, 2010; Tatikonda, 2004). Interestingly enough however, the primary area highlighted for student improvement was related to students' abilities to make informed decisions using applicable accounting information (Berger & Boritz, 2012). Employers rated decision making and problem analysis as one of their most sought after skills (Jackling & De Lange, 2009; Uyar & Gungormus, 2011). This is supported by Grant Thornton (2010) who indicated accounting managers' displeasure at entry-level accounting staff's lack of

soft skills; citing problem- solving, negotiation and oral communication, and leadership as the top three areas of deficiency. Soft skills in accounting are further defined as the interpersonal skills needed in order to be capable of the application of technical accounting skills both in the workplace and in communication with clients (de Villiers, 2010). The global opinion of necessary skills within the accounting profession is the same. The International Federation of Accountants list interpersonal and communication skills as one the top five essential skills professional accountants should acquire through accounting education (International Federation of Accountants, 2006). de Villiers (2010) further defines soft skills in accounting as the ability to both communicate with and understand others.

It has also been acknowledged that current accounting curricula are deficient in incorporating a leadership mindset in accounting students (Bloch, Brewer, & Stout, 2012). As a last resort, some accounting firms are utilizing in-house training programs to assist new entrants to learn pertinent soft skills such as oral communication skills, teamwork, and client interaction (Baysden, 2013). The highest ranked training challenge for accounting firms with their *existing* entry-level accounting hires is in the development of soft skills: Communication, problem-solving, critical thinking, and leadership (Grant Thornton, 2010). This area of new-hire training ranked far above any necessary remedial efforts related to complex accounting standards, international standards, or taxation (Grant Thornton, 2010). Even the most prestigious accrediting agency for schools of business, the Association to Advance Collegiate Schools of Business (AACSB) has solidified support for the presentation of the above-mentioned soft skills in the

accounting classroom through the most recent accreditation standards, which includes student communication and communication abilities (Gupta & Marshall, 2010).

In order to understand the length of the journey to arrive at a cadre of highly-qualified accounting undergraduates prepared to enter the accounting profession, it is important to determine the starting point for the average accounting student. Students entering college declaring accounting as a major are doing so with high-school grade point averages and standardized test scores (SAT/ACT) which are trending higher over a 15 year period (Nelson, et al., 2008). This would suggest students are capable of responding to and incorporating various pedagogical methodologies to enhance and develop the desired traits suggested by educators and professionals alike.

Researchers have responded to the overwhelming evidence supporting what specific skills the accounting profession desires by studying various methods to improve those desired skills.

Evolution of Accounting Education

By having direct ties to a recognized profession and defined certification exams, accounting education can be viewed as substantially different from other business disciplines (Black, 2012). Yet, ironically enough, most business schools actually began as schools of accounting (Revzan, 1949). The role of accounting educators today is expanding due to a call from the accounting profession to better equip students with communication, interpersonal, and critical thinking skills (Braun & Sellers, 2012).

Interestingly enough, in the 1950s, accounting education developed the prescribed curriculum of approximately 25 percent accounting coursework, 25 percent common business core courses, and 50 percent coursework which encompassed requirements for

students to exhibit their skills in areas such as writing and oral communication (Black, Claire, Johnson, Mikesell, Morrison, Van Voorhis & Wixon, 1956). From this point in time until the late 90s, the common call for changes in accounting education have incorporated programs for not only more technical accounting education, but more education in total (Bailey & Bentz, 1991; Trueblood, 1963). The Bedford Committee, appointed by the AAA in 1984 was given the task of solidifying goals for university-level accounting education by 2000 (Bedford, 1986; Bedford & Shenkir, 1987; Swain & Olsen, 2012) which primarily introduced the five-year/150 semester hour rule, but more importantly, introduced a redirection in the focus of accounting education to once again include an emphasis on communication, as well as a focus on the ability to use information to make decisions. This was followed by the Accounting Education Change Commission (AECC) also created by the AAA, who had the distinct mandate to change accounting education to specifically align with the goal of enhancing accounting students' opportunities for successful professional careers (Previts & Merino, 1998). This established the first widely-known efforts to connect professional accounting requirements with accounting education curricula, especially as it related to non-technical accounting skills (Black, 2012). Following the Bedford Report, the largest global Certified Public Accounting firms issued a white paper, *Perspectives on Education: Capabilities for Success in the Accounting Profession* (commonly known as the Big 8 White Paper) which demanded a faster process to identify the skills and characteristics required for success in the accounting profession (Swain & Olsen, 2012). The 2005 AICPA Core Competency Framework succinctly articulated both the functional and personal competencies which accounting graduates were expected to possess in order to

successfully enter the profession (AICPA, 2005). The personal competencies included the skills of decision making and communication, which have been the focus of much research since the release of the Framework, in an effort to determine how these competencies might be best developed in the accounting classroom (Bloch, et al., 2012; Camp & Schnader, 2010; Kerby & Romine, 2009; Uyar & Gungormus, 2011; Young & Warren, 2011).

The introduction of the 150-hour requirement to enter the profession was undertaken with the understanding that the additional hours of education were needed in order to better prepare students for the complex accounting profession they were about to enter. A primary objective of the legislation mandating the 150-hour requirement cited the necessity to improve the oral communication and interpersonal skills of those accounting students about to enter the profession (Black, 2012). Momentum for the evolution of accounting education is being encouraged, as professionals and educators foresee the needs of the accounting profession continuing to change (Bonner, 2010).

Unfortunately, a weakness in this evolutionary progress is the evidence of a lack of success in the fundamental change in accounting curriculum. Previous research found no significant difference in the degree of oral communication apprehension between freshman accounting majors and senior accounting majors (Ameen et al., 2010). Therefore, the recognition of the importance of enhancing accounting majors' oral communication skills is simply not enough: Specific pedagogy must be incorporated into the accounting curriculum in an attempt to mitigate this problem.

Also, the current state of accounting education has several barriers standing in the way of significant and productive change in accounting curricula. Several of these

barriers stem from the accounting faculty: Faculty that are resistant to change or believe change is not necessary; and faculty that are expert in the technical skills of accounting, but not necessarily the soft skills needed for student success in the profession (de Villiers, 2010). These faculty-based barriers to change combined with the alarming shortage of doctorally-qualified accounting faculty (Behn et al, 2012; Black, 2012) place the burden of curriculum change on a stakeholder group that is already overworked, and predisposed to be hesitant to change. This supported this research into a pedagogical method which can be easily implemented and adopted in the accounting classroom that may have potential career benefits for *all* accounting majors.

Literature further supported this research through evidence indicating accounting faculty rely heavily on end-of-chapter materials supplied through publishers' textbooks (Gupta & Marshall, 2010). This is occurring at a time when textbook authors are not closing the gap between what the profession is demanding and what accounting education is supplying by way of textbook resource materials (Gupta & Marshall, 2010). Gupta and Marshall (2010) found, through a systemic analysis of leading accounting textbooks in the areas of auditing, cost, tax, and intermediate accounting, that materials offered through the text itself failed to address the relevant skills of communication, teamwork, and critical thinking skills currently demanded by the accounting profession.

The on-going evolution of accounting education has gone from a curriculum of balanced content, which included technical and soft skills, to a sharp focus on technical skills only, back to a mandate for reincorporating more soft skills. The abundance of previous research drawing attention to the need for student preparation for the profession brought relevance to the point of this research. This study sought to determine if specific

efforts to enhance voluntary student participation in class discussion, and comfort with voluntary participation, was equally beneficial to both genders and equally embraced by both genders, as students seek to enter the accounting profession after graduation.

Methods to Increase Participation

If student participation in class discussion is shown to be beneficial for the accounting student's future career, then what is to be done to involve and engage the non-participating students? Since class discussion is recognized as a foundational pedagogical tool for class participation, Dallimore et al. conducted a series of studies (2010; 2013) on cold-calling in accounting classes as a means to engage those students not inclined to voluntarily participate in class discussions. The concern over the use of cold-calling and its resultant potential student discomfort was dispelled with their 2006 study which indicated students were fairly comfortable participating in class. Students reported that when they were expected to participate, they learned more (Dallimore et al., 2006). Dallimore et al.'s 2008 research studied class participation in class discussions as a means to increase oral communication skills. Students reported higher levels of preparation, more frequent participation levels, increased development of communication skills, and perhaps most importantly, increased student learning (Dallimore et al., 2008).

Dallimore et al. (2013) most recent work added an important layer to their previous research relating cold-calling and student participation by having not only student self-reported levels of class participation, but also objective third-party observers to record the incidences of student participation after the introduction of the cold-calling methodology. Even with additional controls added to the design, the results of the 2013

study still indicated benefits to this pedagogical technique by showing voluntary student participation increased over time as a result of the cold-calling methodology.

There are however, several proposed drawbacks to the cold-calling methodology recognized within the literature. When cold-calling is employed, many faculty envision the Socratic method at work; however, if one student is cold-called, then logically faculty are not engaged with the number of students who are *not* being cold-called (Jones, 2008). Therefore a limitation of cold-calling would be the necessity to weigh the number of students which can be cold-called against the time the student spends answering, along with the time faculty may spend asking additional leading questions (Jones, 2008). Another drawback to the cold-calling pedagogy is defensive volunteering: Where a student volunteers to answer one particular question during a class discussion on a subject with which the student is familiar, in order to avoid being called on later during the class on a topic for which the student may be unprepared (Dallimore et al., 2013). In a separate study, the implementation of mandatory requirements (in-class quizzes) as a motivator for student engagement in an upper-level accounting course was less successful than non-mandatory requirements (voluntary on-line quizzes) in enhancing student engagement and increasing student performance (Mo, 2011).

Braun and Sellers (2012) achieved positive results from their work to increase student participation in the accounting classroom by using a daily motivational quiz. The results indicated increased student attendance, preparation for class, and participation in class as well as increased mastery of course material. However, while the results achieved by this study contributed to the addition of the accounting students' technical skills; there was no contribution to the Personal Competencies required by the

Framework (AICPA, 2005). Bentley, Brewer, and Eaton (2009) used a method, called the hot seat, to motivate students to prepare for and participate in accounting class discussions without generating negative feedback from the students due to the increased personal accountability. The hot seat methodology (Bentley et al., 2009) randomly chose students from the class to answer questions based on the assigned reading materials; an overall majority of questions answered correctly garnered bonus points for the entire class, whereas a majority of incorrect answers denied the bonus points to the entire class. These results (Bentley et al., 2009; Braun & Sellers, 2012) showed increased participation levels in the accounting classroom through the application of different pedagogical techniques. The study of various course pedagogical methods in a quantitatively-based Principles of Accounting course found no conclusive results in terms of the best pedagogical tool to use to improve student learning, but did recognize value in the iterative process of the search, as do school of business accrediting agencies (AACSB; Accreditation Council for Business Schools and Programs - ACBSP) (Harvey & Eisner, 2011).

However, not all methods to encourage students to participate are equally successful. Carnaghan and Webb (2007) discovered the use of group response systems (GRS), or clickers as they are more commonly known, in the accounting classroom did result in increased student participation, but there were no reported overall benefits to learning for the students nor were there any recognizable enhancement of professionally desired attributes such as the previously mentioned soft skills. While the students self-reported feeling significantly more engaged in the classroom, there were no significant benefits to learning as a result of using this particular technological methodology

(Carnaghan & Webb, 2007). Successful use of clickers was indicated in other literature by combining the use of the response systems with student research assignments in the accounting classroom to elicit greater student participation along with increased student learning, as measured by grades (Cunningham, 2008).

Another method to try to increase class participation by those students who were shown to have had a very low rate of voluntary class response was to have the students record their comments on a note card to be submitted at the end of class for participation credit (Foster et al., 2009). This research was a multi-semester study predicated on the hypothesis that, over time, students would transfer the process of the written comments to comments offered in class discussions. The results indicate this pedagogical tool was only mildly successful in that well over a third of the students in the sample population never participated in class discussion during any semester over which the study was conducted (Foster et al., 2009).

It is important for academicians to incorporate applied, contextually important and career relevant tasks in the classroom to aid students in developing their oral communication skills (Evans & Cable, 2011). Using case discussion within the classroom not only enhances the development of oral communication skills, but notably benefits the students' abilities to discern facts and applicable theory for better problem-solving skills (Christensen & Carlile, 2009).

As researchers became aware of what skills the accounting profession was seeking in entry level candidates, studies were undertaken in an effort to search for various learning objectives, curricular modifications, and pedagogical methodology which could be used to develop and enhance those skills. Such studies were conducted,

with varying degrees of success, based on the profession's demand for oral communication skills, problem-solving skills, leadership skills, and critical thinking skills in new hires. Collectively, the conclusion from the profession, based on the AICPA Core Competency Framework, was a mandate for communication skills, and strategic and critical thinking skills (Young & Warren, 2011). Current trends see researchers and academicians in accounting focused on trying to determine which methods might result in the greatest degree of improvement of these skills in accounting students. These types of research studies are exemplified by the use of classroom debate to enhance students' evaluation and judgment (Camp & Schnader, 2010) to the use of a challenge problem in the early stages of accounting education to facilitate the on-going development of critical thinking skills (Young & Warren, 2011).

Specific skills developed from students' participation in class discussions.

Class discussion as a means to class participation also improves oral communication skills. Dallimore et al. (2008) found that when class discussion was used as a major pedagogical tool, students reported higher levels of preparation, more frequent participation levels, development of communication skills, and relatively higher levels of learning. Communication skills along with critical-thinking skills are highly valued attributes in college graduates entering the accounting profession specifically (Baysden, 2013; Grant Thornton, 2010; Johnson & Halabi, 2011) and the work-place in general. Evans and Cable (2011) supported this with evidence of improvement in communication skills as well as accounting skills when class discussion was employed as a means of student participation.

Unfortunately, accounting students have greater levels of oral communication apprehension than their counterparts in other business school disciplines (Kerby & Romine, 2009). Employers and professional accounting groups look for entrants into the field that possess strong communication skills as one of the primary soft-skills (Kerby & Romine, 2009; Stone, 2011). This serves as further evidence that pedagogical intervention is important in order to fully prepare accounting students for their professional careers (Parham, Noland, & Kelly, 2012). There is evidence which supports the use of pedagogical methods to increase student participation in the first course of accounting principles. The evidence indicates these methods will not only draw more students into declaring accounting as a major, but improve their capability and desire to become lifelong learners (Brickner & Etter, 2008), which is a necessity within the accounting profession (Schleifer & Dull, 2009) as well as to supply the increased demand for accounting professionals (Baysden, 2013).

Another method to increase classroom participation for first year accounting students, which resulted in dual benefits for the students, is participation in small groups. Students perceived this form of classroom participation positively and the historical pass rates for the class used in this study improved as a result of the introduction of small group assignments into the accounting classroom (de Jager & Bitzer, 2013). Introducing group work into the accounting classroom was shown to develop new soft skill competencies, such as effective communication, leadership, and delegation and was responded to favorably by the students (Rudman & Kruger, 2014; Stainbank, 2009).

Methods to increase class participation may be of particular importance to faculty perceptions of students and student skill level. Even though the grade point averages of

incoming accounting students are shown to be increasing (Nelson, et al., 2008) the majority of faculty believe students currently majoring in accounting are less qualified than the students majoring in accounting as recently as five years ago (Albrecht & Sack, 2000). The goal of accounting faculty is to create a career ready student, who possesses technical knowledge and the required soft skills, by using the most efficient and effective classroom methodology.

Work by Black (2012) and Behn, et al. (2012) on the Pathways Commission on Accounting Education Report also supported the connection between what student participation creates in the classroom and what the accounting profession requires of its new entrants. Black (2012) noted that students must be able to respond to new demands in business. These new demands in accounting require instant feedback and instant responses to new information. And as it turns out, this is not a one-way street. When accounting students were asked to rate the professional skills they believed would be most important for their future career success, problem-solving, oral communication, critical thinking, and teamwork were the highest rated (de Villiers, 2010; Uyar & Gungormus, 2011) with communication at the top of the list. de Villiers (2010) also noted that students in this same study indicated the accounting curriculum to which they had been exposed fell far short in enhancing these expected competencies. In contrast, Klibi & Oussii (2013) found accounting employers sought accounting graduates with a wide range of non-technical skills, such as communication and listening skills, while the accounting students perceived their abilities related to technical accounting skills would be the primary foundation for future job offers. Tatikonda and Savchenko (2010) called for greater emphasis on the development of critical thinking skills and communication

skills within the accounting classroom, instead of exercises in mechanical number crunching, in order to provide the professional community with what it is looking for in accounting graduates. This call comes after Tatikonda's 2004 survey results cited the gap between what the profession requires in accounting graduates and what accounting educators teach. Rudman and Terblanche (2012) labeled this skills gap as the expectation gap between possession of theoretical knowledge and the practical application thereof. This gap between theoretical knowledge and its application can be eliminated by changing the manner in which accounting education is delivered (PriceWaterhouseCoopers, 2009; Rudman & Kruger, 2014). Class participation in case discussions ultimately enhances these necessary skills for accounting students. Case discussion in the accounting classroom was carried even further by Camp and Schnader (2010) who employed debate as a pedagogical tool to effectively develop accounting students' critical thinking skills through exposure to the evaluation of information, as well as enhancing communication skills. Weimer (2014) advocates preparing students for classroom discussion in short bursts instead of 30 minute dialogues. This further supports the introduction of cold-calling in the accounting classroom as a valuable pedagogical tool.

Gilmore and Schall (1996) found the classroom approach of case discussion and participation "develops the students' skills in framing the core challenge, examining the relevant ... and technical context, and generating and assessing alternative courses of action" (p. 444). A major benefit of case discussion, as concluded by Gilmore and Schall (1996) is the exposure of students to uncertainty and risk in professional decision-making, which could transfer to students' future accounting careers to ultimately better

prepare them for the accounting profession. Case studies and case discussion also help prepare accounting students for a competitive job market (Maier-Lytle, et al., 2010). Equally as important was the concept of providing an atmosphere within the classroom that was supportive of student participation (Landau & Meirovich, 2011).

An alternate point of approaching the relationship between voluntary class participation and professional success is offered by Bandura et al. (2012). Their research suggested the traditional measure of potential success in the profession of accounting may be predicted by those students who were predisposed to voluntarily participate in class. While the approach may be from a different angle, the important connection between students' class participation as a precursor for success in the field of accounting remains intact. Bloch, et al., (2012) supported this but added a further element by noting that leadership development is needed in accounting curricula, which can be incorporated by the use of case readings and case discussion within the classroom. This offers yet another reason to pursue increased student participation in the accounting classroom, especially voluntary student participation.

Gender Issues Related to Student Participation Research

Dallimore et al.'s previous research (2006, 2008, 2010, 2013) on student participation in general, and participation by way of cold-calling in accounting classes in particular, served as a launching pad for this research into the use of cold-calling as a method to increase voluntary student participation in the accounting classroom across genders. However, theirs and others' research into methods to increase student participation in the classroom has primarily been conducted without regard to gender effects. There is a need for research as to whether these methods to increase student

participation, and their associated benefits to career success, will be equally applicable to both genders. The primary findings in previous research related to gender differences in classroom participation is that females speak not only less frequently than males, but also with less confidence (Caspi et al., 2008; Crombie, Pyke, Silverthorn, Jones, & Piccinin, 2003; Younger, Warrington, & Williams, 1999). Uyar and Gungormus (2011) presented statistically significant evidence that females perceived they had lower oral communication skills than males, while at the same time, the females perceived oral communication skills were significantly more important than males.

How this difference in classroom participation across genders manifests itself later in the entry-level accountants' professional life is a question for further research. Yet currently, there are more male accounting employees at CPA firms than female employees, and an overwhelming majority of partners (81%) within public accounting firms are male (Baysden, 2013; Lehman, 2012). Some research proposes that the lack of visibility for women in accounting could be a factor (Lehman, 2012) yet it remains to be seen if this lack of visibility in a professional firm could be the result of females being less willing to speak in public (Caspi et al., 2008; Crombie, et al., 2003; Younger, et al., 1999). The expectation in our current society is that gender effects in the classroom would not exist; yet literature proves otherwise. Perhaps the goal in accounting education should be to prevent any gender effects in the classroom from moving over into the professional work environment, where having a male or female supervisor could have impacts on future advancement (Maceli, Fogliasso, & Baack, 2011).

Student attributes most likely do influence instances of class participation (Weaver & Qi, 2005). Unsurprisingly the attribute of age, as one of two measured student

attributes, determined that older students are far more likely to engage in and even carry classroom discussions, yet gender still remains a suspect influencer of participation; no matter how vigorously efforts are extended to create a hospitable classroom atmosphere for females, the prevailing classroom climate still positively discriminates toward males, making them more likely than females to participate in classroom discussion (Weaver & Qi, 2005). Ward et al. (2009) found that students' involvement in the classroom resulted in a greater level of business knowledge as measured by the Major Field Achievement Test (MFAT) with no influence by gender. However, this research measured involvement in a broader sense using student responses on the National Survey of Student Engagement (NSSE) rather than participation in class discussion (Ward et al., 2009). Therefore oral communication apprehension by gender was not addressed in their work.

In separate research, the provision of opportunities for classroom participation was found to enhance the attributes of adaptability, interpersonal skills, and stress tolerance for male students, but not for female students (Landau & Meirovich, 2011). The suggestion was that this finding was due to the fact that males tend to participate more in class discussions (Landau & Meirovich, 2011). Schleifer and Dull (2009) studied the correlation between metacognition variables, using the Metacognitive Awareness Inventory designed by Schraw and Dennison in 1994, and course grades in accounting and found that gender was significantly correlated with higher metacognition variables and higher course grades.

Interestingly enough, research by Maceli, et al. (2011) indicated both male and female students were more satisfied with female instructors; however, there were

validity issues with this particular research design due to the popularity of one of the two faculty members used in the study. Due to this uncertainty surrounding the role of gender effects in the overall classroom experience, and more particularly on student participation in classroom discussion, especially as it relates to accounting education, there has been a call for additional research (Bandura et al., 2012; Dallimore, et al., 2013; Weaver & Qi, 2005) in order to determine if methods to increase overall participation in classroom discussions will be egalitarian, and thus increase participation for both genders.

Limitations were recognized for not including gender as a variable in research to determine if group work was a successful pedagogical tool to bridge the gap between accounting theory and accounting education (Rudman & Kruger, 2014). Having a deeper understanding of how cold-calling and gender interact can have an impact on faculty instruction, development of accounting curriculum, student retention, and professional recruitment (Russo & Kaynama, 2012).

Classroom Research Methodologies

There are several methods utilized within the current literature to measure student participation in classroom discussions. Caspi et al. (2008) recognized three different methods to measure participation in classroom discussion between genders in a study where participation was entirely voluntary. The first technique counted the students who participated in the class discussion and compared the incidences of male to female participation. However, the drawback to this first method is that differences in participation may arise simply due to a disproportionate number of males or females which comprised the class (Caspi et al., 2008). The second method tracked the number of times each student participated in class discussion, which effectively counts the

incidences of participation for each gender (Caspi et al., 2008). The third method uses a gender distribution baseline whereby the male/female ratio within the classroom was considered and then compared to the actual male/female participation ratio (Caspi et al., 2008). The use of the gender distribution baseline sought to eliminate any skewed results for participation by gender due to inequitable gender composition of the classroom. In order to test for significant differences among the incidences of participation in class discussion between males and females, Caspi et al. (2008) employed the Chi-square test.

There are limitations to the use of various pedagogies within the accounting classroom to increase either student participation or to increase student learning. Faculty delivery of various treatments can change based upon several factors including chapter topics, end-of-chapter materials, and the difference in class composition between different course sections (Harvey & Eisner, 2011). The use of course sections as controls and course sections as intervention sections, along with the use of only two faculty, should help maintain the validity of the proposed research.

The research design used in this study constitutes a between subjects design, comparing the effectiveness of the cold-calling intervention between the experimental groups and the control groups by analyzing pre-intervention and post-intervention data collected on student participation in accounting class discussions and survey data on student attitudes regarding participation. In a between subjects design, each student will be studied under only one condition (MacKenzie, 2013). In this proposed research, students will either be cold-called or will not be cold-called in order to test the effects of the intervention by gender. In a between subjects design, a student may be part of the experimental group or the intervention group, but a student cannot be in both groups

(Shuttleworth, 2009). The primary drawbacks of a between subjects research design are that they often require larger sample sizes and often the lack of homogeneity across groups can be difficult to maintain (Shuttleworth, 2009).

The comparison of experimental groups receiving a treatment or intervention to other control groups that did not receive the same treatment raises questions of validity. Internal validity is the degree to which the intervention causes the change between the two groups; external validity is the degree to which the change can be applied or generalized across all populations (Dimitrov & Rumrill, 2003). Relevant threats to internal validity in this proposed research are maturation effects, history, pretest effects, and a potential interaction of factors (Dimitrov & Rumrill, 2003). External threats in this type of research could primarily include the interaction of pretesting with the intervention, and a reactive effect of multiple interventions (Dimitrov & Rumrill, 2003). While many experiments employ a within subjects research design, which would expose all students to both cold-calling and non-cold-calling, that would not be possible in this study. Once students have been subjected to the cold-calling intervention, simply removing the intervention would still diminish the internal validity of the experiment due to potential carryover effects (MacKenzie, 2013).

This research required gathering information from students using pre- and post-intervention surveys related to the student's comfort level with class participation. Guidance for quantitative techniques in order to determine any significant statistical differences in the survey responses can be found in the literature. Camp and Schnader (2010) employed a student survey with a five-point Likert scale to assess student comfort level with participation and used paired t-tests to determine any statistical significance of

the resulting responses. Other literature employed the use of surveys with a five- or seven-point Likert scale response system which used t-tests in the analysis of results (Klibi & Oussii, 2013; Stainbank, 2009; Uyar & Gungormus, 2011). Student survey responses using a five-point Likert scale were also analyzed using a Pearson correlation (Svanum & Bigotti, 2009). The relationship between survey variables administered in the classroom in order to study pedagogical intervention methods was also examined using regression analysis (Young, 2010).

Pretest-posttest research designs are commonly used to determine the effects of interventions in the classroom (Warren, 2009). Proposed statistical methods for analyzing pretest-posttest data include analysis of variance (ANOVA) on gain scores, and analysis of covariance (ANCOVA) which helps to eliminate systematic bias and reduce any potential error variance due to Type I error (Dimitrov & Rumrill, 2003; Schleifer & Dull, 2009; Svanum & Bigotti, 2009; Uyar & Gungormus, 2011). Dimitrov and Rumrill (2003) suggest the use of a randomized Solomon four-group design as a potential pretest-posttest research design, which eliminates pretesting in one of the experimental groups and one of the control groups. However, note the use of pretesting serves to reduce error variance, thereby creating a more powerful research design (Dimitrov & Rumrill, 2003). Warren (2009) used a time-series analysis design, differing from commonly used pretest-posttest methods in order to assess the effects of multiple interventions in the classroom intended to improve student performance.

The analysis of primary and secondary data was undertaken by Bandura et al. (2012) to look for a link between students' academic variables and a propensity for voluntary behavior in the classroom. The primary data were captured by surveys and the

secondary data were captured through course grade, student GPA, and specific task score on a group assignment. Pearson two-tailed correlation analysis was used to explain the variance in the data measurements (Bandura et al., 2012). Yet the measure of voluntary behavior/participation was still generated through the student's opinion and not through an unbiased measurement. The concept of an unbiased third-party measure of actual student participation in the accounting classroom was introduced by Dallimore et al. (2013) and was employed in this research. Along with the observation of incidences of student participation, Dallimore et al. (2013) used pre- and post-intervention student surveys related to student attitudes regarding class participation. Observation data were analyzed using repeated measures ANOVA, as were the student survey results regarding comfort levels with participation in class discussions (Dallimore et al., 2013).

Many of the leading experimental studies regarding efforts to increase participation by accounting students failed to include control groups as part of the research design (Dallimore et al., 2013; Miller & Stone, 2009). This design deficiency was recognized in suggestions for future research by Dallimore et al. (2013). Control groups were included as a component of the research design for this study.

Much of the stigma against the use of qualitative research in business appears to be fading as more peer-reviewed journals are accepting qualitative research submissions (Bansal & Corley, 2011). However, the use of surveys employing quantitative Likert scale responses and the use of numerically coded observations of students' participation responses in an intervention/control group setting moved this research more towards a quantitative analytical methodology. Data from this study were analyzed using ANOVA and *t*-tests.

There is no straightforward answer to the proposed question of how large a sample size should be in order to be statistically significant so that results are generalizable to the entire population (Salkind, 2010). Most commonly, statistical significance is achieved as the sample size increases. However smaller sample sizes can be adequate for testing purposes if the sample is relatively homogeneous regarding the variable of interest (Salkind, 2010).

Summary

While a study of the history of higher education in accounting offers little hope for transforming the accounting education process to sufficiently meet the needs of the accounting profession (Trueblood, 1963), arguments presented in the literature review suggest otherwise. Studies focusing on what the future skills of accounting graduates should be all agree that, across the board, accounting educators should implement a curriculum that will produce graduates who possess skills and attributes, beyond the complex and technical accounting knowledge, that will be equally applicable and embraced by both males and females. At the top of the list of these other skills are in fact, oral communication skills (AICPA, 2005; Baysden, 2013; Black, 2012; Grant Thornton, 2010; Johnson & Halabi, 2011; Kerby & Romine, 2009; Stone, 2011). A review of the literature highlights the benefits of student participation in the classroom as they relate to learning (Braun & Sellers, 2012; Dallimore et al., 2008, 2010, 2013; Young, 2010; Ward et al., 2009) and especially to the development of characteristics desired in the field of accounting, such as oral communication skills (Braun & Sellers; Dallimore et al., 2008, 2010, 2013; Svanum & Bigatti, 2009; Ward et al., 2009; Young, 2010). Since class discussion is the primary method of student participation within the

classroom (Greenhalgh, 2007; Jones, 2008; Kerby & Romine, 2009; Schmidt-Wilk, 2010; Weimer, 2014) cold-calling during class discussion was the primary pedagogical tool explored.

Research results are presented on other methods which seek to encourage non-participating students to participate in classroom discussions, while some studies focused on the hesitation and discomfort that students may experience as a result of forced participation (Dallimore et al., 2008, 2010, 2013). There is agreement among researchers that pedagogies introduced into the accounting classroom should enhance students' communication skills and problem-solving skills (Dallimore et al., 2013; Parham, et al., 2012; Young & Warren, 2011). However, it is important to note that not all pedagogical methods to increase student participation in accounting are equally successful (Carnaghan & Webb, 2007; Foster et al., 2009). The literature review is also useful to show that previous research on student participation in the accounting classroom has failed to include any potential gender effects from the various pedagogies employed, and that deficiency is recognized by the call for further research (Bandura et al., 2012; Behn et al. 2012; Dallimore et al., 2013; Weaver & Qi, 2005). In addition, the literature review provides insight into research designs and methodologies used to analyze survey and observational data for statistically significant (Bandura et al., 2012; Dallimore et al., 2013) results from research attempting to increase student participation in accounting classrooms.

It is also important to note the literature supports the lack of diversity in upper-level management in public accounting firms today. Men comprise the majority of employees in public firms, but more importantly, 81% of partners are male; a fact the

AICPA is acutely aware of and seeks to change (Baysden, 2013; Lehman, 2012). Literature suggested this could be the result of foundational issues such as females speaking less often in class (Caspi et al., 2008; Landau & Meirovich, 2011) as well as females believing they have lower oral communication skills than males (Uyar & Gungormus, 2011). In fact, accounting majors have higher levels of oral communication apprehension than other college majors to begin with (Ameen et al., 2010; Miller & Stone, 2009). These results from the literature only add to findings which indicate only a quarter of all college students participate in class discussions, and only half of those do so on a regular basis (Foster et al., 2009).

The literature presents some possible solutions to the accounting education issues mentioned above. The use of case studies for discussion in the accounting classroom improves oral communication skills and develops professional skills such as problem analysis (Kerby & Romine, 2009; Paskvan & Maxwell, 2011). Case studies used in class discussions offer opportunities for students to engage in multiple interpretations and to develop problem-solving skills (Camp & Schnader, 2010; Christensen & Carlile, 2009; Gilmore & Schall, 1996; Maier-Lytle, et al., 2010; Schmidt-Wilk, 2010). These skills are shown in the literature to be some of the primary skill areas highlighted as desirable by the accounting profession (Berger & Boritz, 2012; Jackling & De Lange, 2009; Maier-Lytle et al., 2010; Uyar & Gungormus, 2011).

Given the necessity for students to possess these skills in order to successfully enter the accounting profession, it is paramount that accounting educators provide students opportunities to enhance these skills (Landau & Meirovich, 2011; Smith & Stitts, 2013). Yet faculty are not currently applying the pedagogies necessary to develop

the soft skills required by the profession (Behn et al., 2012; Bonner, 2010; Cunningham, 2008; Dallimore et al., 2008; Gupta & Marshall, 2010; Swain & Olsen, 2012). Faculty are primarily focused only on presenting technical accounting skills in the classroom (de Villiers, 2010; Rudman & Terblanche, 2012; Tatikonda & Savchenko, 2010). The literature recognizes this approach by faculty needs to change (PriceWaterhouseCoopers, 2009; Rudman & Kruger, 2014). The adoption of cold-calling in the accounting classroom is shown by the literature as an easy, time-effective pedagogical tool available to faculty which has the ability to increase students' voluntary participation in class discussions as well as enhance other important skills deemed necessary to the profession (Black, 2012; Dallimore et al., 2013; de Villiers, 2010; Grant Thornton, 2010; Gupta & Marshall, 2010).

The results of the previous research outlined in the literature review pave a logical path which led to the necessity of the current research. Accounting majors have greater apprehension regarding participation and oral communication in class than other business majors (Ameen et al., 2010; Miller & Stone, 2009). Females speak even less than males in accounting classes and females have less confidence in their oral communication skills (Landau & Meirovich, 2011; Uyar & Gungormus, 2011) which may be foundational in leading to the majority of accounting firm management being male (Baysden, 2013). There is a demand in the accounting profession for non-technical skills; primarily communication skills and problem-solving skills (AICPA, 2005; Jackling & De Lange, 2009). Accounting academia responded to the lack of career readiness of accounting graduates by demanding a change in accounting education, especially related to improving oral communication skills (Behn et al., 2012; Black, 2012; Braun & Mauldin,

2012). Yet there is faculty resistance to changing from a technical skills only curriculum to a curriculum that incorporates the development of those other skills desired in accounting (Rudman & Kruger, 2014) with some resistance coming from the excessive amount of time required for the inclusion of alternative pedagogies shown to enhance participation and communication (Rudman & Terblanche, 2012). Dallimore et al. (2013) indicated the pedagogical tool of cold-calling increased student voluntary participation in class discussion and increased student's comfort with voluntary participation. Since this is an easy tool for faculty to implement, there was a need for research to determine if this tool can develop those soft skills desired by the profession equally as well for female as for male students. It was also helpful to determine if a pedagogical tool could increase female students' comfort level with participation the same as male students (Dallimore et al., 2010, 2013) in order to increase the frequency with which females participate in class discussions in accounting.

Chapter 3: Research Method

Prior academic research offers results that indicate the pedagogical tool of class discussion helps to develop good oral communication skills (Greenhalgh, 2007) which are necessary for accounting graduates to be successful in the profession (Baysden, 2013; Grant Thornton, 2010; Johnson & Halabi, 2011). While research has indicated cold-calling increases voluntary participation among students (Dallimore et al., 2013) a problem arises with how the results of cold-calling may vary across genders. The specific problem is the lack of, or discomfort with, voluntary participation in upper-level accounting classes by all genders and by females in particular. The purpose of this quantitative, quasi-experimental, between-subjects design study was to determine what difference, if any, that cold-calling techniques would produce in rates of voluntary student participation in accounting class discussions between genders and how cold-calling may change students' comfort level with their participation in class discussion between genders. There was a need for further research as to what results this previously mentioned cold-calling technique, proven to increase student participation and student comfort with participation may have across gender in an effort to further improve accounting education, as well as better equip accounting graduates for the profession, and enable accounting firms to select the optimum new hire (Bandura et al., 2012; Dallimore et al., 2013; Weaver & Qi, 2005).

The two research questions underlying the proposed research and the respective null and alternative hypotheses are provided below:

Q1. What difference, if any, is there between the voluntary participation response rates of males and females who have been cold-called and the voluntary participation response rates of males and females who have not been cold-called?

H1₀. There is no difference in student voluntary participation response rates between males and females who have been cold-called and males and females who have not been cold-called.

H1_a. There is a difference in student voluntary participation response rates between males and females who have been cold-called and males and females who have not been cold-called.

Q2. What difference, if any, is there in the comfort level with class participation between males and females who have been cold-called and males and females who have not been cold-called?

H2₀. There is no difference in comfort level with class participation between males and females who have been cold-called and males and females who have not been cold-called.

H2_a. There is no difference in comfort level with class participation between males and females who have been cold-called and males and females who have not been cold-called.

Chapter 3 offers a description of the research methods and design for the proposed study. Discussion begins with the appropriateness of the chosen design for this study, followed by a discussion of the current study's population and the study sample. The chapter includes a discussion of survey instruments and study variables as well as discussion of assumptions, limitations, delimitations, and ethical assurances.

Research Methods and Design

A quantitative design using parametric inferential statistics has been used in this study to determine any relationship between voluntary participation and gender when cold-calling is employed in the accounting classroom. A quantitative methods design was applicable to the study and preferable over qualitative methods for several reasons. First, the study examined the relationship between the known variables (Black, 2003; Vogt, 2007) of cold-calling, voluntary participation, comfort with participation and gender in a quasi-experimental study (Gall, Gall, & Borg, 2007). Second, the quantitative method was suitable due to the collection of numerical data in relation to the variables which were used to test the stated hypotheses (Black, 2003; Cozby & Bates, 2012; Gall, et al., 2007). In fact, quantitative methods support the full range of experimentation: Data collection, testing of hypotheses, and statistical analysis (Gall, et al., 2007; Ravid, 2000). A quantitative research method appeared to be the most appropriate method for this research study due to the detailed examination of the relationship between variables (Black, 2003). Quantitative analysis has been used to determine if cold-calling generates an equal amount of voluntary participation in class discussion among females as among males; along with the effect of cold-calling on comfort levels with participation by gender. The research involved testing specific research hypotheses, and as such, collected data in the current study were both measurable and quantifiable, as opposed to interpretive (Trochim, 2006).

Data were gathered at two specific points in time in eight separate sections of an accounting course using four intervention courses and four control courses. Quantitative interval data were gathered using pre- and post-course surveys given to students enrolled

in the courses, to measure any changes in student attitude regarding participation, by gender. Numerically coded data, collected by observation of class discussions sought to measure any change in student behavior regarding participation by gender: Incidences of voluntary participation responses and responses to cold-calling were recorded by gender in the intervention courses, and only voluntary participation responses by gender will be recorded in the control courses. A quasi-experimental design was used due to the lack of randomness of chosen subjects in the accounting courses (Vogt, 2007). As such, confounding variables, such as student behavior and a potentially small sample size, cannot be completely controlled but will be addressed within the limitations section.

Specifically, a pre-survey/post-survey, control group design was used to test the effect of cold-calling on students' comfort level with voluntary participation across genders, where all upper-level accounting courses are administered the surveys, but the cold-calling technique was applied only to the four intervention classes. An unbiased, trained observer recorded the incidences of student participation, coding them as either voluntary, where a student voluntarily responds to a question without being cold-called, or non-voluntary, where a student responds only after being cold-called, by participant gender. Cold-calling was not applied in the control courses, therefore only data regarding students' voluntary participation responses were collected in these courses. A between-subjects design was used to test the differences between the control and experimental groups.

The use of *t*-tests to compare survey responses between genders is supported by Al-Ajmi (2006) and Guthrie and Jones (2012) and is particularly appropriate for small samples. Previous studies which assessed classroom participation and employed the use

of surveys with a five- or seven-point Likert scale response system also used *t*-tests in the analysis of results (Klibi & Oussii, 2013; Stainbank, 2009; Uyar & Gungormus, 2011). A one-way analysis of variance (ANOVA) was used to determine the interaction effect of cold-calling on gender and voluntary participation. A quantitative, quasi-experimental, between-subjects design, applying *t*-tests and ANOVA to the collected data, is supported.

Population

The target population consists of undergraduate accounting majors enrolled in upper-level accounting courses at small and large, public and private, undergraduate and graduate degree-granting universities (Foster et al., 2009; Weaver & Qi, 2005). Currently there are approximately 771 institutions in the United States which offer degrees in accounting (US Department of Education, 2013). Portions of this population are appropriate for study in order to determine if cold-calling will increase voluntary participation in class discussion and increase student comfort level with participation differently across gender due to the fact that students in this population are not displaying characteristics of participation in sufficient quantity within the classroom, as evidenced by academic literature (Dallimore et al., 2013; Miller & Stone, 2009; and Stanga & Ladd, 1990) and professional reports (Black, 2012; Grant Thornton, 2010). Also students in this population have been reported to have higher levels of apprehension regarding oral communication than other college majors (Ameen et al., 2010; Miller & Stone, 2009; Stanga & Ladd, 1990). Characteristics of this population also indicate that female accounting majors participate in accounting classroom discussions less than their male counterparts (Caspi et al., 2008).

Sample

The study's sample was drawn from portions of the population that were enrolled in eight upper-level accounting courses, four intervention classes and four control classes, at a single small, private university in the southeast United States. There were no recruitment or selection strategies for the sample except that the enrolled students complete the course and adequately complete both the pre-course and post-course surveys in order to be included as part of the study sample. Any data collected from students not meeting these requirements were eliminated from the analysis.

Assuming an analysis of variance (ANOVA) with two independent factors, voluntary participation and non-voluntary participation, is used with the observation counts and assuming $\alpha = .05$, and $\beta = .2$, and assuming a small effect size, the suggested sample size using G*Power 3 is a total sample size of 200 ("A priori power analyses"). This sample size was potentially obtainable by employing the population in the proposed four intervention classes and four control classes. Any reduced sample size could potentially impact the statistical significance of any obtained results and was noted as a limitation to the study.

Materials/Instruments

Two surveys were used to gather data on student opinions about participation in class discussions and to capture gender information. The pre-intervention survey was employed to create a baseline opinion of students' attitudes regarding class participation. The surveys did not mention this specific research study regarding class participation and gender or cold-calling in general in order to avoid creating bias or unintentionally affecting student attitudes about participation or how participation influences oral

communication skills in the accounting profession. The post-intervention survey served to ask students questions regarding their individual comfort level participating in class, in order to measure any change in students' attitudes about class participation over time as well as their comfort level with participation after the intervention of cold-calling.

Both the pre- and post-intervention surveys recorded the respondents' gender.

Observations of each control class and each intervention class took place during a scheduled class discussion. Observations, and the collection of data by observation, within the intervention classes took place before the introduction of cold-calling and then again well after cold-calling had been introduced in the class. Observations within the control classes took place during the same time frame as those scheduled for the intervention classes. A graduate student was thoroughly trained to categorize case discussion responses and record coded data each time the faculty member asked a question. During the discussion, the observer recorded whether the student responds, whether the student responds voluntarily, or whether the student was cold-called. The observer also recorded the gender of the student responding, as male or female, based on a seating chart. Only the number of voluntary responses by student gender were coded in the control courses due to the lack of cold-calling in these classes.

Reliability and validity of the instruments. As stated earlier, the pre-intervention survey served to create a benchmark of students' attitudes regarding class participation for those students who have declared accounting as a major. The post-intervention survey serves to measure students' behavior by focusing on the frequency of participation as well as the student's comfort level with participation. The pre-intervention and post-intervention survey (see Appendix A) as well as the observation

variables (see Appendix E) were created by Dallimore et al. (2013) and is used with their permission (see Appendix D). The pre- and post-intervention surveys and observation variables used were identical for all control classes and for all intervention classes.

The reliability of survey instruments is commonly assessed by administering the same or very similar surveys at different points in time (Litwin, 1995; Ravid, 2000) which is known as the test-retest reliability method. This measure of survey reliability is typically quantified with a correlation coefficient (r value); specifically coefficient alpha (also known as Cronbach's alpha) which is useful for instruments using Likert scale measurements (Ravid, 2000). The coefficient alpha will be measured for the completed survey instruments with the goal of $r \geq 0.70$ (Litwin, 1995). The same test-retest reliability method may also be applied to observation data, when the same observer records data in at least two separate measurements (Litwin, 1995). To a certain extent, alternate-form reliability (Litwin, 1995; Ravid, 2000) will be employed for the survey instruments. Questions in the post-intervention survey have been slightly reworded, yet still seek to measure the same aspect of behavior (Julie Hertenstein and Marjorie Platt, personal communication, February 26, 2015). In order to avoid the practice effect (Cozby & Bates, 2012; Litwin, 1995) and decrease instrument reliability, the surveys were administered several months apart. The pre-intervention survey was administered at the beginning of the semester and the post-intervention survey was administered at the end of the semester in which data were collected.

The validity of the instruments used in this proposed research has been confirmed using content validity as acknowledged by external reviewers. The surveys and observation guide have been previously used by Dallimore et al. (2013) and therefore

externally peer-reviewed. In terms of construct validity, the observational data obtained by the observation guide may provide the most meaningful information in terms of the gender effects of cold-calling, while the surveys relate any self-reported potential change in student attitude and behavior regarding participation in accounting class discussions.

Operational Definition of Variables

The purpose of the quantitative study was to examine the relationship between the use of cold-calling in the accounting classroom and voluntary student participation, between genders. In the current study, students, both male and female, who were enrolled in the intervention courses, were introduced to the pedagogical tool of cold-calling, which represented the independent variable.

Gender. Student gender was coded nominally as either zero (0) for male or as one (1) for female. The observer was trained to code gender for those students responding to a question during class discussion, while students self-identified gender on the pre- and post-intervention surveys. There was no placement or selection strategy for the students participating in the study except that the enrolled students completed the course and adequately completed both the pre-intervention and post-intervention surveys in order to be included as part of the study sample. At the university where the study was conducted, accounting majors are required to satisfactorily complete certain course prerequisites prior to enrolling in a junior or senior-level accounting course.

Cold-call environment. The primary intent of this research study was to assess gender differences in student behavior during class discussions as a result of cold-calling and to assess any differences in student attitudes about participation as a result of cold-calling. Accounting courses chosen for use in this study were junior and/or senior level

undergraduate accounting courses offered in a traditional classroom setting, taken by students declaring accounting as a major, so as to capture those students intending to enter the accounting profession. The intervention courses and control courses shared common pedagogical elements such as class discussion using case studies, and they had the same faculty member, respectively. This was particularly relevant in the intervention courses employing cold-calling in order to introduce an element of control over the cold-calling process itself and the frequency with which cold-calling was employed. Cold-calling was *not* introduced in every course in order to maintain a control group for cold-calling. The control courses did not have the same faculty member as the intervention courses, but the faculty member teaching all four of the control courses agreed to not employ the technique of cold-calling. There were a total of eight courses used in the study; four used cold-calling and four did not, in order to serve as control classes. The dependent variables for the study involved the student behaviors and attitudes resulting from the experimental intervention of the independent variable of cold-calling.

Student voluntary participation in class discussion. During each observation period, the gender and participation behavior of individual students were observed and recorded, based on the seating chart for each class. Based on the observation process, a student who answers a question voluntarily will be coded a value of 1 under “answered a voluntary question” on the observation guide (see Appendix E); otherwise the student will be coded a value of 0. Similarly, a student who answers a cold-called question will be coded a value of 1 under “Answered a cold-called question” on the observation guide; otherwise the student will be coded a value of 0 (Dallimore et al., 2013).

Student comfort level with participation. Two surveys were administered during the semester in which data were collected. A pre-intervention survey was given to students enrolled in all four intervention courses as well as the four control courses at the beginning of the semester, prior to the introduction of the cold-calling tool in the intervention courses. The survey served to measure students' attitudes and perceptions regarding participation in class discussion. The second, post-intervention survey was administered to all subjects toward the end of the semester in which data were collected, following the use of cold-calling in the intervention courses. The surveys (see Appendix A) used a 7-point Likert scale, considered by many (Clason & Dormody, 1994; Sisson & Stocker, 1989) to represent interval data available for analysis using parametric techniques.

Data Collection, Processing, and Analysis

Collection of data. Data were collected from students who had declared accounting as a major who were enrolled in eight separate junior- and senior-level accounting courses during a single semester at a small, private, faith-based university in the Southeast United States. Four of the courses were designated as control classes and did not have cold-calling introduced into the classroom during class discussions. The other four accounting courses, known as intervention classes, did have cold-calling introduced and used during class discussions. The control classes were all taught by the same faculty member, and the intervention classes were also taught by one other single faculty member, in order to minimize any threats to external validity from interaction effects. The pre-intervention survey was given to all classes within the first week of the

semester in which data was collected. The post-intervention survey was administered to all classes within two weeks of the end of the semester.

Observation periods tracked the participation behavior of each student before and after the intervention of cold-calling in order to determine if a significant change in participation behavior across gender had resulted in the intervention courses.

Participatory behavior by student was tracked by the observer, using a seating chart, where the gender of each student is recorded by seat location. The trained observer assigned students a value of “1” or “0” under two separate categories: The “answered a voluntary question” category; or the “answered cold call question” category. The trained observer assigned students a value of “1” under the “answered a voluntary question” variable for those students who answered a question voluntarily. Otherwise, the student will receive a “0” for this variable. The observer also assigned a code of “1” under the “answered cold-call question” for any student who answered at least one cold-call question. Otherwise, a student will be coded as a “0”. This data were used to determine the number of students present who answered either a question voluntarily or as a cold-call response by gender. This was used to indicate the type of student participation, by gender, in a class discussion within a particular course, as well as the frequency of participation by type. There was one trained observer who observed each class, early in the semester, prior to the introduction of cold-calling in the intervention courses, and again, late in the semester, after cold-calling had been in use in the intervention classes.

Data processing. Pre- and post-surveys were matched by using the last three numbers of a student’s identification number which was requested on the survey. The numbers were requested only as a means for matching the pre- and post-surveys; not as a

means of participant identification. Any surveys, which were unable to be matched, were excluded from data analysis. Surveys were examined for completeness both at the time of submission by the student and prior to data analysis. Any unanswered questions were omitted from subsequent analysis.

Confidentiality and privacy of the participants were maintained throughout the survey and observation process. Surveys remained in the control of the researcher and were locked in a secure file cabinet housed in a secure, locked office. At the conclusion of the study, all surveys were destroyed using the University of Mobile's procedures for disposal of student documents. The completed observation guides, that have no student identifying information, were also stored securely in the locked file cabinet, prior to disposal.

Data analysis. Univariate and multivariate analyses was conducted to test for gender differences in both student perceptions, based on the survey data, and student behavior, which was based on the observation data, between the intervention and control courses. The survey data were analyzed using student *t*-tests to compare the mean attitudes and perceptions of males and females prior to the intervention of cold-calling to the mean attitudes and perceptions of males and females after the intervention of cold-calling. This statistical analysis was used in order to compare the means of the data from the two different groups: The classes receiving the cold-calling intervention and the classes used as a control group. One benefit of using this between-subjects design is that testing effects are minimized; however equivalency issues and experimenter effects may be enhanced.

The observation data were used to measure actual student voluntary participation. The data were analyzed using a one-way analysis of variance (ANOVA) with one independent factor, used for each separate analysis: Gender, control versus intervention class, and observation period, based on pre- intervention versus post-intervention. This method allowed for only one variable to change with each analysis, which produced results on whether cold-calling could increase voluntary participation equally between genders.

Assumptions

Assumptions were inherent that the student sample population will remain unbiased for the duration of the study and not become privy to the intent of the research. In order to ensure this was a reliable assumption, no information was revealed to any potential student that may have become a participant in the study, or to the independent observer who observed the case discussion classes. Secondly, the assumption was made that the student maturation process during the course of a one-semester class was not sufficient to significantly influence the result of the independent variables beyond that of any influence generated by the dependent variable. The use of control groups should also have helped to control for the maturation effect.

Limitations

The current research has limitations, which are potential weaknesses in the study which may serve as a threat to internal validity (Trochim, 2006). Due to these limitations, over-interpretation of results will not occur. The establishment of the generalizability of the proposed research findings to all upper-level accounting classrooms where a causal relationship between cold-calling and voluntary participation

might be expected, will be a limitation (Vogt, 2007). The goal of the research was to determine the effect of the cold-calling pedagogical tool to increase voluntary participation across gender, and its effect on students' comfort with participation by gender. There was a potential concern for validity due to small sample size if the appropriate total numbers of students required by power analysis (200) were not enrolled in the courses chosen for study. Since the study was limited to only accounting majors enrolled in upper-level accounting courses, there was no attempt to include other courses in the study in order to increase sample size.

Also, students had the ability to withdraw from a course prior to the completion of the course, which would further reduce the sample size. While this could not be changed, this particular limitation was certainly acknowledged as such. Also, since the study was conducted in university courses, a true random selection of participants was not possible, which led to a quasi-experimental design (Butcher, McEwan, & Taylor, 2010; Ravid, 2000).

A second potential limitation resided in the nature of student behavior. As shown, students may engage in *defensive volunteering* in a class where cold-calling and class discussion are expected (Dallimore et al., 2013). In other words, they may readily respond in a discussion and volunteer an answer on a subject in which they feel more prepared in order to avoid being cold-called later, on a subject for which they may feel less prepared.

A third potential limitation was from students' perceived differences in difficulty between the case study selected for discussion prior to the intervention of cold-calling in the experimental classes, and the case study selected for discussion after the use of cold-

calling. This was addressed by selecting cases with the same level of difficulty, ranging from simple to complex. The level of difficulty was defined by the taxonomy of the respective textbook publisher in each accounting course.

Delimitations

A choice was made to only apply the cold-calling method in upper-level, required accounting courses for accounting majors, which were taught by the same faculty member within the scope of one semester in order to establish consistency in the application of the intervention of cold-calling. The use of a single faculty member limits the number of accounting courses that could be used as intervention courses and thereby limited the number of students within the sample. The lack of a truly random selection of participants could affect the generalizability of the results across other universities' accounting curriculum.

Ethical Assurances

Institutional Research Board (IRB) approval was obtained from both Northcentral University and the University of Mobile, from where the experimental and control classes were taught. IRB approval was obtained from both institutions prior to any data collection. In addition, Collaborative Institute Training Initiative (CITI) certification was achieved and updated prior to any collection of data, further ensuring the ethical protection of any participants involved in the proposed study.

The research was conducted in such a way that protects all participants from both physical and psychological harm (Ross, Loup, Nelson, Botkin, Kost, Smith, & Gehler, 2010). While physical risk was found to be of primary concern in the area of medical research (Ross et al., 2010) federal regulations protecting human subjects from harm have

been expanded by most research institutions to include research in areas such as accounting education (Riordan & Riordan, 2009). The preliminary risk assessment conducted in preparation for the IRB application indicated no physical risks to the student participants at all and no psychological risks to the students other than the possibility of a normal amount of stress from potentially being called on in class to respond to a discussion question or from responding to a survey (Ross et al., 2010).

Research regulations require the protection of any and all private and confidential information (American Psychological Association, 2012). Confidentiality and privacy of the participants were maintained throughout the survey and observation process. Surveys were identified only by the last three digits of each respondent's student number so that surveys from the beginning of the semester and the end of the semester could be matched for analytical purposes. Surveys have remained in the control of the researcher and locked in a secure file cabinet housed in a secure, locked office. At the conclusion of the study, all surveys were destroyed using the University of Mobile's procedures for disposal of student documents. While a trained observer was present during scheduled class discussions, audio or videotaping was not used in order to maintain student privacy (Bastedo, 2009). No other confidential or private information was gathered (See Surveys in Appendix A).

The ethical assurances for informed consent dictate researchers inform study participants of the nature, duration, possible methods of withdrawal from the study, and potential consequences of the intended study (American Psychological Association, 2012). However, there are categories of research which are exempt from the process of informed consent. One of the categories of research exempt from the process of

informed consent is research performed in a classroom setting involving instruction, delivery of curriculum, and common, normal educational activities (Riordan & Riordan, 2009). Therefore, a Waiver of Written Documentation was requested as part of the IRB process. This is common in research employing surveys in the classroom where the validity of the study is enhanced by not informing the subject of the intent of the proposed study (Dallimore et al., 2013). Research exempt from informed consent still required a letter of informed consent (Appendix C) to be submitted with the IRB application, but the letter of consent did not need a signature from the study participants after it was approved (H. Miller, personal communication, February 25, 2015). Ethical assurances also extend to the academic community. Results, materials, and references from this study will be provided as expected under the ethical category of honesty with professional colleagues in an effort to facilitate future research or applied classroom pedagogy.

Summary

The purpose of this quantitative, quasi-experimental, between-subjects design study was to determine what difference, if any, that cold-calling techniques would produce in rates of voluntary student participation in accounting class discussions between genders and how cold-calling may change students' comfort level with their participation in class discussion between genders. This was accomplished through pre- and post-course surveys to capture student opinion and perception regarding class participation, along with observances of actual class participation by students during class sessions with case discussions. A control was in place in that four accounting courses did not utilize cold-calling while the other four accounting courses did. Inferential statistics

were used to analyze the obtained data. The findings from this study add to the current research on cold-calling and the ability of this pedagogical technique to increase voluntary student participation in class discussions equally across gender, thereby enhancing all students' communication skills; and will be generalizable to other faculty engaged in accounting education. These findings could also be relevant to institutions that have yet to consider adapting accounting course curriculum to enhance competencies identified by the AICPA Core Competency Framework, as well as to accounting firms beginning to consider how gender communication differences may play a role in training techniques within professional accounting firms.

Chapter 4: Findings

The purpose of this quantitative, quasi-experimental, between-subjects design study was to determine what difference, if any, that cold-calling techniques would produce in rates of voluntary student participation in accounting class discussions between genders and how cold-calling may change students' comfort level with their participation in class discussion between genders. The effect of cold-calling on student attitude was measured through the use of student surveys, while the effect of cold-calling on student behavior was measured through observations of student participation in class discussions. Data were collected prior to the introduction of cold-calling and after the introduction of cold-calling and examined using test statistics in order to make inferences regarding the research hypotheses.

Chapter 4 includes discussion of the research findings. The first section of the results looks at participant gender distribution and the statistical analysis used for each research question. The results for each research question follow. The second section includes an evaluation of the findings and an interpretation of the findings based on current literature. The chapter concludes with a summary of the key findings.

Results

In total, data were collected from 16 possible groups. There were 123 students enrolled in the courses from which participants were selected and 118 students completed these same courses and were ultimately included as part of the sample population. Three students withdrew from a course during the semester. The surveys for these students were eliminated from the pre-intervention survey data. There were also two students enrolled in more than one intervention course and two students enrolled in more than one control

course. The results from these students were included in only one of the respective courses to avoid duplication.

The pre-intervention surveys were administered to participants during the second week of the semester of class meetings for all courses. Observations of class discussions were made during the third week of class meetings. Both the pre-intervention surveys and the initial observation of discussions were made prior to the introduction of cold-calling in the designated Intervention courses.

The post-intervention surveys were administered to participants during the last week of regular semester class meetings. Observations of class discussions were also made this same week. Administration of surveys and scheduling of class discussion for the Observer were coordinated with the accounting faculty teaching the designated Control courses. The breakdown of the number of males and females in each of the Intervention courses and Control courses are provided below in Table 1.

Table 1

Sample Population by Gender and Course

Course	Intervention Courses		Course	Control Courses	
	Gender	N		Gender	N
AC 345	M	6	AC 440	M	5
	F	6		F	4
AC 313	M	7	AC 449	M	5
	F	6		F	4
AC 346	M	5	AC 341	M	14
	F	6		F	15
AC 448	M	9	AC 342	M	12
	F	7		F	7
Total		52			66

Of the total study participants, slightly more were male (53.4%) than female (46.6%). As a result of the withdrawn and duplicate students being eliminated, the

number of participants providing post-intervention data is equal to the number of participants providing pre-intervention data.

Results by research question. Two research questions served to guide the current study, which focused on the relationship between cold-calling and voluntary participation in class discussions among genders. The treatment of cold-calling, was introduced in four separate upper-level accounting courses designated as Intervention courses. Data gathered from students enrolled in Intervention courses were compared to data gathered from students enrolled in four separate upper-level accounting courses designated as Control courses, where cold-calling was not used.

Analysis of variance (ANOVA) was used to analyze the data collected from class observations of actual student participation in scheduled class case discussions. ANOVA was helpful in analyzing the variance when three or more groups are being studied. Since different students are participating in the Intervention courses and the Control courses, a between subjects design was included, and since there was only one independent variable used in each separate analysis involving cold-calling, or gender, or pre-intervention versus post-intervention, a one-way ANOVA is appropriate. By using ANOVA with this type of data, there was an assumption of less incidence of Type II error of failure to reject a false null hypothesis, as well as a limited amount of Type I error of rejecting a true null hypothesis. Other assumptions inherent in the use of ANOVA include a normal distribution within homogeneous experimental groups, the use of independent observations, and the use of interval-ratios scale data. One way to attempt to meet these assumptions is random sampling within groups (Ravid, 2000). By calculating both the between-groups variance and the within-group variance and employing the *F*-ratio, it was

possible to address the specific Research Question 1 to determine if there was a statistically significant effect on voluntary participation between genders from the cold-calling intervention or if any differences were simply due to variances from extraneous variables.

In analyzing data gathered to address student comfort level by gender with participation in class discussions, as addressed in Research Question 2, an independent-groups *t* test was used to compare comfort level with participation by gender for students who were exposed to cold-calling and students who were not exposed to cold-calling, as measured by the survey results. Assumptions related to the use of the *t*-test statistic for independent groups was in the random assignment of subjects to each group. In a university setting, among upper-level courses taken by female and male accounting majors, there was an assumption of no major differences between groups prior to the introduction of the independent variable, creating a normal distribution.

As noted in the Research Methods and Design section of the paper, the suggested sample size as determined by G*Power 3 is a total sample size of 200 (“A priori power analyses”). The actual number of study participants was 118 after eliminating pre-intervention data for students that withdrew from courses or were enrolled in more than one course in which student comfort levels or participation were being assessed. The reduced sample size was noted as a limitation of the study.

Research Question 1. What difference, if any, is there between the voluntary participation response rates of males and females who have been cold-called and the voluntary participation response rates of males and females who have not been cold-called? The null hypothesis related to this question stated there is no difference in

student voluntary participation response rates between males and females who have been cold-called and males and females who have not been cold-called.

First the variances of voluntary participation between females in the Intervention courses that were cold-called and females in the Control courses that did not experience cold-calling are examined. See Table 2 below. The results of this ANOVA returns $F(7, 38) = 3.08, p < .05$. These results indicate a statistically significant difference in the voluntary response rates of females who have been cold-called and females who have not been cold-called. The F_{obt} of 3.08 is greater than the F_{cv} at the $\alpha = .05$ level of 2.25. The mean response rate at the end of the semester for females enrolled in the intervention courses (mean = 2.32) was more than twice the mean response rate at the end of the semester of females enrolled in the control courses (mean = 1.14).

Table 2

ANOVA Summary for Post-Intervention and Post-Control Females

Source	<i>df</i>	SS	MS	F	<i>p</i>
Between groups	7	26.50	3.79	3.08	.001
Within groups	38	46.68	1.23		
Total	45	73.18			

The ANOVA for the voluntary participation between males in the Intervention courses and males in the Control courses returned $F(7, 53) = 4.57, p < .01$. See Table 3 below. These results indicate a statistically significant difference in the voluntary response rates of males who have been cold-called and males who have not been cold-called during the semester under study. The F_{obt} of 4.57 is greater than the F_{cv} at the $\alpha = .01$ level of 2.95.

Table 3

ANOVA Summary for Post-Intervention and Post-Control Males

Source	<i>df</i>	SS	MS	F	<i>p</i>
Between groups	7	49.26	7.04	4.57	.001
Within groups	53	81.55	1.54		
Total	60	130.81			

To explore the intended gender differences resident in Research Question 1 an ANOVA was determined for differences in voluntary participation in class discussion between males and females who had participated in only the Intervention courses in order to determine if cold-calling held a greater effect on females than males. See Table 4 below. $F(7, 44) = 9.02, p < .01$. These results are statistically significant at the $\alpha = .01$ level where the F_{cv} equals 3.12 (obtained from the df_{within} level of 40). This allows the null hypothesis, H_{I0} to be rejected for males and females who have been cold-called. The H_{Ia} stating there is a difference in student voluntary participation response rates between males and females who have been cold-called should be accepted.

Table 4

ANOVA Summary for Post-Intervention Males and Females

Source	<i>df</i>	SS	MS	F	<i>p</i>
Between groups	7	27.79	3.97	9.02	.001
Within groups	44	19.36	0.44		
Total	51	47.15			

Table 5

ANOVA Summary for Post-Control Males and Females

Source	<i>df</i>	SS	MS	F	<i>p</i>
Between groups	7	27.79	1.01	0.66	.005
Within groups	47	72.54	1.54		
Total	54	100.33			

Table 5 shown above indicates $F(7, 47) = 0.66$, ns for variances between the response rates of males and females in the Control courses at the end of the semester. There is no statistical difference in the voluntary response rates of males and females enrolled in the control courses at the end of the semester. These results would tend to support the effect of cold-calling to both increase voluntary participation in class discussions and to increase participation in both males and females, and support the rejection of the null hypothesis and acceptance of the alternate hypothesis.

In order to verify that at the beginning of the research study the student participants were from the same population, the results of the ANOVA for all females, both in the Intervention and Control courses are presented here and below in Table 6. $F(7, 44) = 0.50$, ns. As might be expected, there is no statistically significant difference in the rate of voluntary participation in class discussions in the female sample population at the beginning of the semester, prior to the intervention of cold-calling.

Table 6

ANOVA Summary for Pre-Intervention and Pre-Control Females

Source	<i>df</i>	SS	MS	F	<i>p</i>
Between groups	7	7.23	1.03	0.50	.005
Within groups	44	91.60	2.08		
Total	51	98.83			

The results of the ANOVA for all males in Intervention and Control courses prior to the introduction of any cold-calling in the Intervention courses are also presented. $F(7, 54) = 1.69, p > .05$. These results indicate that while the F_{obt} of 1.69 is greater than 1.0, it does not fall within the F_{cv} even at the $\alpha = .05$ level. See Table 7 below. These results would also indicate there is no statistically significant difference in the rate of voluntary participation in class discussions in the male sample population at the beginning of the semester, prior to the intervention of cold-calling.

Table 7

ANOVA Summary for Pre-Intervention and Pre-Control Males

Source	<i>df</i>	SS	MS	F	<i>p</i>
Between groups	7	15.08	1.47	1.69	.005
Within groups	54	47.09	0.87		
Total	61	62.17			

Research Question 2. What difference, if any, is there in the comfort level with class participation between males and females who have been cold-called and males and females who have not been cold-called? The null hypothesis related to this question stated there is no difference in comfort level with class participation between males and females who have been cold-called and males and females who have not been cold-called.

First the means of the pre-intervention surveys were tested between males and females. The results for males indicated $t(61) = 1.49, p > .05$. The results of the *t*-test for the means of pre-intervention surveys for females indicated $t(53) = 0.10, ns$. These results indicate there is no statistically significant difference in comfort level with class participation prior to the introduction of the intervention of cold-calling for either males

or females. Note that the results for males, while returning a t_{obt} greater than 1.0, the value is still less than the t_{cv} of 1.67 at the $\alpha = .05$ level.

The statistical analysis of the means of the post-intervention surveys between the Intervention group females and the Control group females showed $t(53) = 1.42, p < .10$. The statistical analysis of the means of the post-intervention surveys between the Intervention group males and the Control group males showed $t(61) = 0.61, ns$. These results would indicate there is a statistically significant difference in comfort level with voluntary participation at the $\alpha = .10$ level for females, but no statistically significant difference in comfort level with voluntary participation for males following the intervention of cold-calling. The statistical analysis of the means of the post-intervention surveys between the Intervention group males and the Intervention group females resulted in $t(50) = 0.18, ns$. While there is a difference in comfort level between intervention and control females, there is no significant difference in comfort levels with voluntary participation between intervention and control males, as well as no significant difference in comfort levels with voluntary participation between males and females that have both received the cold-calling intervention. Similarly, the statistical analysis of the means of the post-control males and females indicate no statistically significant differences in comfort levels with voluntary participation between genders, $t(50) = .29, ns$. The lack of statistical significance in the difference in comfort levels with voluntary participation between males and females who have been cold-called and males and females who have not, would lead to a failure to reject the null hypothesis, $H2_0$.

Evaluation of Findings

The findings of this study are presented in relation to other relevant research in the field as well as in context with academic outcomes and current professional accounting hiring criteria, especially as it relates to females. This study adds to the literature of Bandura et al. (2012) and Dallimore et al. (2010, 2013) who engaged in research efforts in accounting education which have been devoted to improving student participation in class discussions. Specifically, Dallimore et al. (2010) explored the positive connection between accounting student participation in class and their subsequent comfort level with class participation. The work of Dallimore et al. (2013) explored the use of cold-calling to improve accounting student participation in class discussions, but did not consider the question of gender differences in participation or gender differences in comfort level with participation. The question of gender differences, as examined in this study, is also relevant from a professional accounting perspective. Maier-Lytle, et al., (2010) found participation in class discussion using case studies beneficial to accounting students to develop practical problem-solving skills and practical application of technical accounting knowledge through oral communication. Maier-Lytle et al. (2010) too did not determine if these benefits were consistent across genders. Any potential gender differences are important in a profession where 81% of CPA firm partners are male (Baysden, 2013).

Research Question 1. One pillar of the foundation of this work was created by the work of Caspi, et al. (2008) who found that females participate in classroom discussions less than males. Results of the analysis of the observations of voluntary class participation in class discussions in this study found a statistically significant increase in

participation for females that had received the cold-calling intervention over those that had not been exposed to cold-calling. This is relevant in both the academic achievement of females and their entry into the accounting profession. Bandura et al. (2012) found a positive relationship between voluntary class participation and success in the accounting profession, while research by Black (2012) supported the connection between class participation and entry-level requirements in accounting firms. From an academic perspective, Braun and Sellers (2012) as well as Dallimore et al. (2013) indicated students that participate in class learn more, which is, in fact, the ultimate goal of higher education.

To show the sample population began the semester with no inherent statistically significant differences related to participatory behavior, observations of class discussions were performed at the beginning of the semester, prior to the introduction of cold-calling in the intervention courses. The findings indicate no statistically significant differences in voluntary participation in class discussion between students enrolled in intervention courses and students enrolled in control courses. This serves to further support Dallimore et al. (2013) regarding the effect of cold-calling as a tool to increase voluntary class participation, when contrasted with the post-intervention observation data.

The rate of voluntary participation for males enrolled in the intervention courses receiving the cold-calling treatment increased significantly more than those males not receiving the cold-calling treatment. However, in direct response to the first research question, while there was statistically significant greater voluntary participation in males and females that had been cold-called versus males and females who had not been cold-called, the gender difference in voluntary participation among students who had been

cold-called was also statistically significant at the $\alpha = .01$ level. The mean of observations of voluntary participation in class discussions for cold-called females over cold-called males was approximately 44% higher for females than males. This is consistent with Dallimore et al. (2013) conclusions that cold-calling increases voluntary participation in accounting students, but brings new information into the classroom regarding any potential gender differences in relation to employing this pedagogical tool. These results on gender serve to add to the literature on participation.

Research Question 2. The second aspect of the current study relates to students' comfort level with participation. Young (2010) found as students' comfort with class participation increased, the students exhibited higher levels of learning as indicated by increasing grade averages within the courses under study. Ward et al. (2009) found that increased student comfort with participation lead to greater levels of participation which increased overall business knowledge, which is of course beneficial to student learning, but also beneficial to addressing the current professional demands of problem solving in the accounting profession (Weimer, 2014). Comfort with participation in class discussions was linked to the introduction of professional business practices and the ability to draw inferences from complex information by Camp and Schnader (2010) and Christensen and Carlile (2009). Professionally, this supports the AICPA Core Competency Framework (2005) which directly addressed decision-making and problem solving as a desired competency to be mastered by accounting students entering the profession.

In testing the comfort levels with participation, the current study first examined attitudes prior to any cold-calling in the intervention courses among all participants in the

study. There were no statistically significant differences in attitudes regarding comfort level with participation based on survey results. There was, however, a statistically significant difference in comfort levels with participation between females that had been cold-called and females that had not been cold-called. This is consistent with Dallimore et al. (2013) regarding increased participation, regardless of gender. The results on increased female comfort level with voluntary participation goes beyond any current research and adds to the current accounting literature.

There were contrasting findings among the male participants in the study for this question. There was no statistically significant difference in comfort levels with participation between males who had been cold-called and males who had not been cold-called. This is inconsistent with Dallimore et al., (2013) who found increasing comfort levels with participation after cold-calling across all students, although the Dallimore study was not gender specific. Yet the results on voluntary participation behavior indicated significant differences in actual participation rates between Intervention males and Control males, with Intervention males responding significantly more in class discussion. The lack of any gender differences in comfort levels after both male and female groups had been cold-called, even though females who had been cold-called actually had more observations of voluntary participation than males who had been cold-called, may also be attributed to Curphy's (1991) findings, or at least present an opportunity for future research.

Summary

The purpose of this quantitative, quasi-experimental, between-subjects design study was to determine what difference, if any, that cold-calling techniques would

produce in rates of voluntary student participation in accounting class discussions between genders and how cold-calling may change students' comfort level with their participation in class discussion between genders. ANOVA and t tests were used to test the null hypotheses and answer the two research questions. The first research question was whether there was a difference between the voluntary participation rates of males and females who have been cold-called and males and females who have not been cold-called. The findings showed a significant relationship between the use of cold-calling and increased voluntary participation in class discussions as measured by observations of participation in class discussions of Intervention courses and Control courses. The findings further demonstrated a significant difference in voluntary participation response rates between males and females who had all received the cold-calling intervention. The findings further indicate females demonstrate a positive and significant response to cold-calling, which has implications for the accounting classroom and the accounting profession.

The second research question was whether there was a difference between student comfort level with class participation between males and females who have been cold-called and males and females who have not been cold-called. Again, the results demonstrated a statistically significant increased level of comfort with participation for females after cold-calling, but males did not respond as expected in terms of comfort level with voluntary participation following the cold-calling intervention. The results indicate no significant difference in comfort level with voluntary participation following the intervention of cold-calling when measured for Intervention males and females.

The results of this study are consistent with Dallimore et al. (2010, 2013) in relation to increased voluntary participation after the introduction of cold-calling. The current study added to the literature on student participation (Bandura et al., 2012; Kerby & Romine, 2009; Schmidt-Wilk, 2010) by examining the relationship between gender and the pedagogical tool of cold-calling. Results related to student comfort level with participation were consistent with the literature in terms of the differences between Intervention females and Control females, but inconsistent with the literature regarding comfort level between Intervention males and Control males (Dallimore et al., 2006, 2010).

Chapter 5: Implications, Recommendations, and Conclusions

The problem of the lack of student voluntary participation in the accounting classroom has implications for both the students preparing for a career in accounting and the firms seeking to employ accounting graduates who have both good oral communication skills (Black, 2012) and problem-solving skills (Paskvan & Maxwell, 2011). Furthermore, all accounting majors have been shown to have a potentially higher level of apprehension about public speaking than other college majors (Miller & Stone, 2009) with female accounting majors speaking in class less than males (Uyar & Gungormus, 2011) and speaking with less confidence than males (Caspi, et al., 2008). The purpose of this quantitative, quasi-experimental, between-subjects design study was to determine what difference, if any, that cold-calling techniques would produce in rates of voluntary student participation in accounting class discussions between genders and how cold-calling may change students' comfort level with their participation in class discussion between genders.

The methodology employed for this study was to designate four upper-level accounting courses as Intervention or treatment courses and four upper-level accounting courses as Control courses. Observations of a class discussion based on an assigned case would take place for each course at the beginning of the semester and the end of the semester. The observations would allow for assessment of actual behavior regarding voluntary student participation in class discussions. Surveys were administered at the beginning of the semester and the end of the semester to determine student attitude regarding class participation and individual comfort levels with class participation. All four of the Intervention courses had the same faculty member. Cold-calling was

introduced into the Intervention courses only after the pre-intervention observation of case discussions and the pre-intervention surveys were administered.

A quantitative research method was used to determine any gender differences in voluntary class participation and in comfort level with participation as a result of cold-calling. The sample population consisted of 118 students for both pre- and post-intervention data collection, after five participants were excluded for either withdrawing from a course during the semester or enrollment in more than one course from which the sample population was drawn. Limitations are inherent in the number of students in the sample. Also, due to the process of student self-enrollment in a course, the lack of a truly random selection of participants may affect the generalizability of results across other universities' accounting curriculum. Another limitation could result from defensive volunteering (Dallimore et al., 2013) where a student volunteers a response on a subject in which they feel more prepared in order to avoid being cold-called during discussion of a topic for which they feel less prepared. Also, in situations of self-reporting, there may be a limitation due to student participants reporting inflated attitudes regarding their comfort with class participation.

The ethical issues associated with the current research were minimal. The participants' rights to privacy and confidentiality were maintained and any potential harm to participants was mitigated. No personal information was collected from the participants other than gender. Research did not begin until approval was obtained from the Institutional Research Boards of both Northcentral University as well as the university where the research was conducted. Ethical considerations also extended to the academic community to maintain honesty in collaboration with professional colleagues

both during the research and in the future, in an effort to support future research or applied classroom pedagogy.

Chapter 5 began with a review of the problem statement, purpose, methodology, potential limitations, and ethical dimensions of the study. The next section of Chapter 5 will focus on the implications of the study, drawing conclusions from the results that will be aligned with academic and professional opportunities for improvement, as well as the AICPA Framework. The opportunities for improvement in accounting education and the accounting profession will be further developed in the section on Recommendations along with suggestions for future research in this area. The chapter concludes with a summary of key points.

Implications

The study built on previous research involving student participation in class discussions and cold-calling, where cold-calling was shown to increase voluntary student participation in class discussions. Data was collected and analyzed to answer the research questions and determine whether cold-calling produced any differences between genders in the rate of voluntary class participation or any differences between genders in comfort levels with class participation. The first research question explored student behavior in response to cold-calling, while the second research question looked at student attitude in response to cold-calling.

Research question 1. The data in Table 2 indicate females that were cold-called during the semester were observed to have a significantly higher level of voluntary class participation than females who had not experienced cold-calling during the semester, $p < .05$. The data as shown in Table 3 also indicate a significant difference in the rate of

voluntary participation in class discussions at the end of the semester between males that had and had not received the cold-calling intervention, $p < .01$. While this data support the benefits of cold-calling to increase voluntary class participation, as originally indicated by Dallimore et al. (2013), the true question lies in the existence of gender differences in voluntary participation as a result of cold-calling. The results in Tables 4 and 5 directly address the first research question. Table 4 results indicate a significant difference in voluntary response rates between males and females who have been cold-called, $p < .01$. The results shown in Table 5 displayed no significant difference in voluntary response rates at the end of the semester between male and female students who have not been cold-called. The data indicate the null hypothesis should be rejected and the alternate hypothesis should be accepted, indicating there is a difference in voluntary participation rates between males and females who have been cold-called and males and females who have not been cold-called.

The academic implications arising from the research results support the introduction of cold-calling into the accounting classroom as a method to increase student voluntary participation, specifically for female students who have been shown to participate less than males (Caspi, et al., 2008; Tatum, Schwartz, Schimmoeller & Perry, 2013). The correlation between increased participation by students and increased learning (Braun & Sellers, 2012; Dallimore et al., 2008, 2010, 2013; Svanum & Bigatti, 2009; Ward et al., 2009; Young, 2010) supports the implications of this research to suggest the opportunity for increased learning by females, where cold-calling is introduced into the classroom.

While other methodologies have proven to increase class participation (Foster, et al., 2009) the implications of cold-calling to both improve student participation, especially for females, as well as to develop student characteristics desirable in the accounting profession is unique. The AICPA Core Competency Framework (2005), still in use today, along with Black (2012), address decision making and problem solving as a primary personal competency which accounting students should master in order to be successful when entering the accounting profession. Several studies have linked the use of class discussion using assigned cases, to students' ability to discriminately use information and draw conclusions and inferences from complex information (Camp & Schnader, 2010; Christensen & Carlile, 2009; Maier-Lytle, et al., 2010). Therefore, if participating in class discussions of cases helps to develop professional attributes, and cold-calling increases voluntary participation in the discussions for both males and females, then the results of this research has implications to prepare more females for entry and promotion in the accounting profession. Oral communication skills are also cited as a necessary attribute to enter and be successful in the accounting profession (Baysden, 2013). The results of this study imply cold-calling in the accounting classroom is a valid means to increase the rate of both male and female oral communication in the classroom, thereby focusing on the development of needed professional skills. The gap in the literature pertaining to actual classroom studies of the gender effects of cold-calling was addressed with this study.

Research question 2. The results of the surveys administered pre- and post-intervention were used to assess any changes in students' comfort level with voluntary class participation. There were no significant difference in attitudes among all the sample

groups between males and females prior to the introduction of cold-calling. The females that received cold-calling were significantly more comfortable with voluntary class participation by the end of the semester than the control group females, $p < .10$. However, there was no significant difference in comfort level between males that had been cold-called and males that had not been cold-called during the semester. This result, while surprising, indicates a somewhat inflated self-measure of comfort with voluntary class discussions on the part of the post-Control males which may be explained by Caspi et al. (2008) who indicated males spoke with more confidence in the classroom. This unexpected result for comfort level with participation among males may also be explained by the number of junior-year males versus senior-year males that were in the intervention courses. The male students in the Intervention courses were 28% seniors whereas the male students in the Control courses were 67% seniors. The seniors in the Control courses could have been more mature and therefore more inherently comfortable with voluntary participation, and therefore indicated that on the post-intervention survey. Yet the results on voluntary participation behavior indicated significant differences in actual participation rates between Intervention males and Control males, with Intervention males responding significantly more in class discussion. Another potential explanation for this unexpected result may be found in the fact that surveys are a means of self-assessment and males have a tendency towards higher self-rating than females (Curphy, 1991) so males in the post-control survey could have recorded higher scores on the survey.

The survey results also indicate that there were no statistically significant differences in the attitudes of females regarding voluntary participation after being cold-

called than male attitudes regarding voluntary participation after being cold-called. While these results determine that the null hypothesis should not be rejected, a further implication may be supported that female attitudes changed, or increased, equally with that of male attitudes, ultimately causing no significant differences in post-survey results. In fact, in the Intervention courses, the mean for the male pre-intervention survey was 57.48 and the mean for the female pre-intervention survey was 56.92; the mean for the male post-intervention survey was 125.33 and the mean for the female post-intervention survey was 126.12. The implication is that both males and females did change their attitude regarding voluntary participation in the classroom after the introduction of cold-calling, just not significantly more than their gender counterparts.

The state of the profession currently shows males comprise the majority of all professional accountants at certified public accounting firms and over 80% of partner positions in public firms (Baysden, 2013). Furthermore, Nelson, et al., (2008) indicate female enrollment in graduate level accounting education is down at a time when the 150-hour rule is still the normal requirement for the majority of states. Therefore, it is important to focus on the increased comfort level with voluntary participation for females, for both academic and professional reasons. The accounting classroom should be free from gender bias. To aid in this goal, all curricula and pedagogical tools should serve to enhance the academic achievement of all students, as well as to prepare all students to enter the profession.

Recommendations

The current study examined the relationship between the introduction of cold-calling in upper-level accounting courses and student voluntary participation in class

discussions, as well as students' comfort level with class participation. This study has practical applications for accounting faculty who seek to develop all accounting majors into entry-level candidates prepared to enter the accounting profession.

Practical applications. The study produced robust effects on student voluntary participation rates from cold-calling. As a result, cold-calling should be used in the accounting classroom to increase student voluntary participation across genders ($p < .05$ for females; $p < .01$ for males). Increasing student voluntary participation in class discussions has been shown to increase both student learning and enhance needed professional skills (AICPA Framework, 2005; Black, 2012). Cold-calling should also be employed in the accounting classroom to increase student comfort level with participation across genders, since the more comfortable a student is with participation, the more the student will increase their participation. Since students participate more in classroom discussion when other students participate (Souza et al., 2010) accounting faculty should use cold-calling to initiate the discussion process.

Accounting faculty could use cold-calling to increase female accounting majors' comfort level with voluntary participation ($p < .10$ for intervention and control females) and oral communication, thereby enhancing the traits necessary for entry-level employment in a profession where females are not yet equivalent to males in terms of employment or management positions (Baysden, 2013). It should be encouraging to accounting faculty and the accounting profession to see that this can be reversed with the appropriate pedagogical tools.

Another recommendation is to begin the process of cold-calling earlier. The current results used a sample population from junior and senior-level accounting majors.

The described benefits from cold-calling would enhance students' academic and professional readiness much earlier if cold-calling were started at least at the sophomore level, which is the level that most accounting students will enter their first prescribed major coursework. Earlier introduction of cold-calling is also appropriate since earlier research dispelled ideas that faculty would potentially embarrass students if cold-calling were used in the classroom (Dallimore et al., 2006).

As research recognizes that faculty can be a major impediment to incorporating effective pedagogical practices in the accounting classroom (Behn et al., 2012) it is time to recognize and use those methods that have been shown to consistently generate the desired results, and now have been shown to generate the desired results across genders. If accounting faculty were unwilling to incorporate cold-calling into the curriculum at an earlier stage, then the creation of a capstone course in accounting is recommended, where class discussions of case studies would be a primary component of the curriculum.

Recommendations for future research. Several opportunities for future research present themselves following this study. First, the question of how males and females who had been cold-called in major-level accounting courses later developed in their professional careers would be relevant in order to determine if any perceived benefits from cold-calling were translated into higher levels of career success, as measured by promotions, against accounting majors who had not experienced cold-calling. A second opportunity for future quantitative research would be to examine the role of the accounting instructor's gender and cold-calling to determine if significant differences existed between male and female instructors and increased level of student participation from cold-calling by gender. Directly related to the results of this study,

further research could be conducted to explore the resultant differences between significantly increased voluntary participation behavior of Intervention males over Control males, but no significant difference in attitudes regarding voluntary participation between the two groups. Another potential area of quantitative research would be to determine the transferability of the results of this study in accounting education to other academic majors, both within and outside a College of Business. Future study is also recommended to determine if there is a relationship between cold-calling and increased learning as manifested in higher grades or exam scores across genders.

Conclusions

The results of this study provided evidence that cold-calling in upper-level accounting courses generated increased voluntary participation in class discussions for both males and females, with a significant increase in female participation. The results also indicated that female attitude with voluntary participation increased positively over time as a result of cold-calling, but the same was not indicated for males.

The implications for the use of cold-calling as part of curriculum delivery in the accounting classroom are significant, both in terms of the increased rate of voluntary participation, as evidenced by the results of this study, along with the positive effect on female accounting students in behavior and attitude relating to participation. Previous literature ties increased voluntary participation in the accounting classroom to desired outcomes in the accounting profession such as improved oral communication and problem-solving skills. This may provide a more equitable situation for females entering the profession.

As a result of the data, recommendations to introduce cold-calling earlier in a students' academic career are made, along with recommendations to accounting faculty to apply cold-calling as frequently as possible in order to take advantage of the documented benefits to learning and professional skills development (Behn et al., 2012; Black, 2012; Dallimore et al., 2013). Several suggestions for future research are offered, including the exploration of the effect of cold-calling on an accounting student's career path and the investigation of the role of gender of the accounting faculty and how that might affect the rate of voluntary participation, by gender, as a result of cold-calling. Accounting faculty should not be hesitant to employ cold-calling in the accounting classroom, just as students preparing to enter the profession of accounting should not be hesitant to embrace cold-calling as a tool proven to enhance their professional skills.

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Appendixes

Appendix A: Surveys

Pre-survey

Gender: Male _____ Female _____ Last Three Digits of Your Student Number _____
 In which course are you enrolled? _____

Faculty are conducting a study on class discussion and participation to help faculty understand approaches that lead to student learning so they may become more effective teachers. We would like you to fill out this short survey with your opinions about class discussions. At the end of the course, we will ask you to fill out another short survey. Participation in this study is voluntary. Your identity will not be known to researchers. No responses attributed to you will be reported back to your professors. Any published results will be statistical data aggregated across many students and courses; no names of individual students will be used. Thus, we see no risk to you for participating in this study.

1. How familiar are you with the class discussion process?
 Not familiar 1 2 3 4 5 6 7 Very familiar
2. How much do you like class discussions?
 Not at all 1 2 3 4 5 6 7 Very much
3. When you are expected to participate in class discussions in a course, how does this affect your learning in the course?
 Learn less 1 2 3 4 5 6 7 Learn more
4. How valuable is your participation in class discussions for your own learning?
 Not at all 1 2 3 4 5 6 7 Very valuable
5. How valuable are other students' comments for your own learning?
 Not at all 1 2 3 4 5 6 7 Very valuable
6. In most courses, I participate:
 Not at all 1 2 3 4 5 6 7 Very frequently
7. In other accounting courses, I participate:
 Not at all 1 2 3 4 5 6 7 Very frequently
8. In general, the evaluation of my class participation has been:
 Low 1 2 3 4 5 6 7 High
9. In general, when I participate in class discussions, I feel:
 Uncomfortable 1 2 3 4 5 6 7 Comfortable
10. In general, my satisfaction with my class participation is:
 Not satisfied 1 2 3 4 5 6 7 Very satisfied
11. In this course, I expect to participate:
 Not at all 1 2 3 4 5 6 7 Very frequently

Post-survey

Gender: Male _____ Female _____ Last Three Digits of Your Student Number _____
 In which course are you enrolled? _____

Faculty are conducting a study on class discussion and participation to help faculty understand approaches that lead to student learning so they may become more effective teachers. We would like you to fill out this short survey with your opinions about class discussions. At the end of the course, we will ask you to fill out another short survey. Participation in this study is voluntary. Your identity will not be known to researchers. No responses attributed to you will be reported back to your professors. Any published results will be statistical data aggregated across many students and courses; no names of individual students will be used. Thus, we see no risk to you for participating in this study.

1. In most courses, I participate:
 Not at all 1 2 3 4 5 6 7 Very frequently
2. In general, the evaluation of my class participation has been:
 Low 1 2 3 4 5 6 7 High
3. In general, when I participate in class discussions, I feel:
 Uncomfortable 1 2 3 4 5 6 7 Comfortable
4. In general, my satisfaction with my class participation is:
 Not satisfied 1 2 3 4 5 6 7 Very satisfied
5. In other accounting courses, I participate:
 Not at all 1 2 3 4 5 6 7 Very frequently
6. In this course, I *expected* to participate:
 Not at all 1 2 3 4 5 6 7 Very frequently
7. In this course, I *actually* participated:
 Not at all 1 2 3 4 5 6 7 Very frequently
8. What was your typical level of preparation for this course?
 Low 1 2 3 4 5 6 7 High
9. Compared to all other courses, my level of preparation for this course was:
 Much lower 1 2 3 4 5 6 7 Much higher
10. Compared to all other courses, other students' level of preparation for this course was:
 Much lower 1 2 3 4 5 6 7 Much higher
11. Compared to all other courses, I participated in class discussions in this course:
 Less frequently 1 2 3 4 5 6 7 More frequently
12. Compared to other accounting courses, I participated in class discussions in this course:
 Less frequently 1 2 3 4 5 6 7 More frequently

13. Compared to all other courses, the number of students who participated in class discussions was:
 Much lower 1 2 3 4 5 6 7 Much higher
14. In this course, when I participated in class discussion, I felt:
 Less comfortable 1 2 3 4 5 6 7 More comfortable
15. Compared to all other courses, when I participated in class discussions, I felt:
 Less comfortable 1 2 3 4 5 6 7 More comfortable
16. Compared to other accounting courses, when I participated in class discussions in this course, I felt:
 Less comfortable 1 2 3 4 5 6 7 More comfortable
17. How did this course affect your *written* communication skills?
 Affected negatively 1 2 3 4 5 6 7 Affected positively
18. How did this course affect your oral communication skills?
 Affected negatively 1 2 3 4 5 6 7 Affected positively
19. My confidence about participation in future courses has:
 Decreased 1 2 3 4 5 6 7 Increased

Appendix B: AICPA Core Competency Framework Components

Personal Competencies

Communication
Interaction
Leadership
Leverage Technology
Problem Solving/Decision making
Professional Demeanor
Project Management

Functional Competencies

Decision Modeling
Leverage Technology
Measurement
Reporting
Research
Risk Analysis

Broad Business Perspective Competencies

Strategic/Critical Thinking
Resource Management
Marketing/Client Focus
Leverage Technology
Legal/Regulatory Perspective
International/Global Perspective
Industry/Sector Perspective

Appendix C: Informed Consent Form

The Relationship between Gender and Cold-calling to Increase Voluntary Student Participation

Purpose of the Study.

Your participation is requested in a research study to satisfy dissertation requirements at Northcentral University in Prescott Valley, Arizona. The purpose of the study is to determine the relationship between gender and the effects of cold-calling on voluntary participation in the accounting classroom. There is no intent to deceive present in the study, but only a desire to measure any potential change in attitude regarding voluntary participation and level of voluntary participation.

Participation Requirements.

You will be asked to complete two surveys during the semester-long course. The class as a whole will also be observed by an unbiased third party during scheduled discussion of case studies. The approximate time to complete each survey is 10 minutes.

Research Personnel.

The researcher conducting the study is Kathy Dunning who may be contacted at kdunning@ncu.edu or in Weaver Hall, 290E. The Dissertation Chair for the research study is Dr. Jennifer Duffy. She may be contacted at jduffy@ncu.edu.

Potential Risk/Discomfort.

No potential harm or risks are associated with the study. You are permitted to withdraw at any time and you may choose not to answer any survey questions you do not feel comfortable answering.

Potential Benefit.

There are no incentives offered for participating in this study. The results of the study will be used for the completion of the researcher's dissertation. The intent of the study is to add to the body of knowledge with regards to gender issues related to voluntary participation in class discussions in accounting education.

Anonymity/Confidentiality.

The data collected in the study is confidential and strictly anonymous. The researcher will have and maintain strict control of the survey responses and observational data. All survey and observational data is coded such that your name is not associated with the data. In addition, the data will be destroyed at the conclusion of the dissertation process. To guarantee survey responses are anonymous, the survey instrument does not include questions that could be used to identify individual students; nor will the observational data contain any identifying information.

Right to Withdraw.

You have the right to withdraw from the study at any time without penalty. You may omit survey questions that you do not feel comfortable answering. If you have any questions, you may contact the researcher or dissertation committee chairperson.

Agreement.

I have read and understand the above description and understand the conditions of my participation. My signature below indicates that I am giving my informed consent to participate in this study and agree to complete the surveys. I understand I may omit any survey question I do not wish to answer.

Signature line

I do not wish to participate.

Sign below to indicate your wish to not participate in this study.

Signature line

Appendix D: Permission to Use Surveys



Accounting Group
404 Hayden Hall
Northeastern University
360 Huntington Avenue
Boston, Massachusetts 02115-5000

Phone: 617.373.3240
Fax: 617.373.8814

March 3, 2015

Kathy Dunning
Chair, Accounting Department
Assistant Professor of Accounting
School of Business
University of Mobile
5735 College Parkway
Mobile, AL 36613-2842

Dear Kathy,

You have our permission to use the quantitative questions from the surveys we developed, selected portions of which were published in our article, *Impact of Cold-calling on Student Voluntary Participation* by Elise Dallimore, Julie Hertenstein, and Marjorie Platt in the *Journal of Management Education* in 2013. We understand that the research you are conducting is for purposes of your dissertation only.

We wish you the best on the completion of your dissertation. If we can be of further assistance, please don't hesitate to contact us.

Kind regards,

Julie H. Hertenstein
Associate Professor
Accounting Group, 404 Hayden Hall
D'Amore-McKim School of Business
Northeastern University
360 Huntington Avenue
Boston, MA 02115-5000

Appendix E: Observation Guide

Course _____

Observation period: Pre-intervention _____ Post-intervention _____

Total Number of Males Present _____

Total Number of Females Present _____

Total Number of Volunteer Questions Asked _____

Number of Volunteer Questions Answered by Males _____

Number of Volunteer Questions Answered by Females _____

Number of Cold-called Questions Asked to Males _____

Number of Cold-called Questions Asked to Females _____

Number of Cold-called Questions Answered by Males _____

Number of Cold-called Questions Answered by Females _____

A seating chart, based on the designated classroom for each course used in the study will be provided to the observer for use in tabulating questions asked to/answered by gender. The observer will record the gender of each student using the seating chart. Note that room assignments are typically made approximately two weeks prior to the beginning of each semester at this university.