



*About
the
Authors*

Dr. Larissa Kyj, *Associate Professor of Accounting*, earned her undergraduate degree at Fordham and her M.A. and Ph.D. at Columbia University.

She has published in several business journals and presented papers at regional and national meetings of the American Accounting Association. Her research interests include participative budgeting and international business education.

Dr. Carol Welsh, *Assistant Professor in the Accounting and Finance Department*, did her undergraduate and graduate work at Drexel. She is a Certified Public Accountant and a Certified Internal Auditor.

She has published in several business journals and has presented papers recently at the international meeting of the International Trade and Finance Association. Research interests include international accounting harmonization and accounting for the environment.

Apprehensions of Accounting Majors: Communications and Math



Larissa S. Kyj and Carol Welsh

Abstract

In response to the Big-8 Accounting Firms' Perspectives on Education (White Papers, 1989), the Accounting Education Change Commission Position Paper Number One (1990), and the requirement of 150 credit hours to sit for the CPA examination, many colleges and universities are redesigning their accounting curriculum and instituting changes in pedagogy. Specifically, accounting courses are being redesigned to provide the accounting student with high levels of communication, intellectual, and interpersonal skills to become successful professionals. But research in psychology has found that apprehension affects skills attainment and performance (McCroskey, 1984; Freimuth, 1976; Daly, 1978). Curriculum changes made without understanding the apprehension profile of accounting students may not result in the desired skills.

We will look at three apprehensions that should be considered when redesigning the accounting curriculum: speech, writing, and math apprehensions. Students at the sophomore, junior, and senior levels were included in the study sample to evaluate differences in the apprehension levels of these three groups.

Introduction

In preparing for the 21st century, the accounting profession and academia have undertaken an intensive reexamination of the requirements for accounting professionals. In January 1988, the American Institute of Certified Public Accountants (AICPA) voted to change its requirements for membership.

Starting with candidates for membership in 2000, the AICPA will require a minimum of 150 semester hours of study. (Currently, the standards for licensing and membership vary from state to state.) After the vote, the AICPA reexamined and reevaluated educational preparation requirements needed to begin a career as a CPA. The result of their study was a document entitled *Academic Preparation to Become a Certified Public Accountant* (1992). This document was intended to provide guidance and focus in the development of 150-hour programs; it cites specifically communications and mathematical (quantitative methods) analysis as areas which need improvement and reinforcement in accounting programs.

The Big-8 Accounting Firms' *Perspectives on Education* (White Papers, 1989), and the Accounting Education Change Commission (AECC) Position Paper Number One (1990) have also identified communication, intellectual, and interpersonal skills as necessary for the successful accounting professional.

In developing the new 150-hour programs and responding to the specifically cited skills identified by the AICPA, the White Papers, and the AECC, colleges and universities are developing programs and courses specifically targeted to provide students with increased opportunities for oral presentations, writing assignments, and critical/unstructured problem solving. However, research in communication, English, psychology, and education demonstrates that apprehension affects skills attainment and performance (Daly & Miller, 1975; Freimuth, 1976; Daly, 1978; McCroskey, 1984). Therefore, before making curriculum changes and developing new programs, educators should understand the apprehension profile of accounting students. Otherwise, new programs or curriculum changes may not result in helping students attain the desired competencies.

This paper has three parts. First, it reviews the general education areas of communication and mathematical skills identified by the accounting profession as important components of accountants' general education; it also considers student apprehensions in these areas. Next, it describes gen-

eral education skills required of accountants and defines student apprehensions in these areas. Third, it identifies instruments developed to test these apprehensions.

Accounting Profession Perspective

Members of the accounting profession revisited the educational requirements for entry into the profession for a number of reasons. First and foremost, the profession needed to respond to the many challenges of an increasingly complex world and to society's demand for greater information. The new models for accountants were defined as broadly educated professionals, technically knowledgeable, with advanced analytical and communication skills and a greater awareness of our global society.

Members of the profession then formulated the 150-hour educational requirement to balance the need for both technical and general education to provide a strong background in communication skills, mathematics, computer science, ethics, history, and literature.

Communication and Mathematical Skills

Communication skills, both oral and written, are invaluable life skills essential for professional success. Accountants rely on these skills to perform their jobs effectively. While accounting consists of the identification, classification, accumulation, and analysis of financial information, the resulting product is of no use unless it is effectively communicated to interested users. Accountants are business professionals who are required on an everyday basis to present the results of their compilations and analyses to business associates. This requires written reports, memos, and oral presentations—both formal and informal. Therefore, communication activities play a very important role in the work of the accounting professional.

A student studying to become an accountant should acquire effective written and oral communication skills. The AICPA, in its *Academic Preparation to Become a Certified Public Accountant*, June 1992, states that "schools should ensure that stu-

dents acquire these skills and are required to demonstrate written and oral communications." The report also speaks to the need to integrate and reinforce the communication skills learned in general education courses within the business and accounting curriculum.

Mathematics and statistics are also vital to the understanding and analysis of a wide spectrum of business and accounting issues. Accounting students need to study mathematics and statistics to develop analytical techniques to solve business and accounting problems, including those involving risk and uncertainty. In *Academic Preparation to Become a Certified Public Accountant* (1992), the AICPA addresses this component of an accountant's education in the following manner: "students should learn to work with symbolic notation, to reduce complex problems to their essential elements, and to express the relationships between those elements in quantitative terms. The object should be conceptual understanding rather than manipulative skill." Additionally, the report speaks to the appropriateness of incorporating the quantitative skills learned within the general business and accounting curriculum.

Apprehensions

Apprehension describes an individual's feelings about engaging in situations requiring a particular skill (McCroskey, 1984). An individual's level of apprehension has been found to be a trait that is unlikely to change without intervention (McCroskey, 1984; Richardson & Suinn, 1972; Daly & Miller, 1975). Research has found that highly apprehensive individuals tend to be less motivated to achieve (Giffin & Giffin, 1971). Studies emphasizing the identification of specific types of anxieties have found that different kinds of anxieties lead to different effects on intellectual performance (Sarason, 1957; Suinn, 1965).

Studies of apprehension have produced independent measures of three apprehensions applicable to the accounting curriculum: oral communication apprehension (OCA), writing apprehension (WA), and math apprehension (MA).

Oral Communication Apprehension

Oral communication apprehension is "an individual's level of fear or anxiety associated with either real or anticipated communication with another person or persons" (McCroskey, 1977, 1978). In early studies, the construct OCA was viewed from a trait orientation. Later work by McCroskey views the sources of the construct OCA as four points on a continuum: traitlike CA, generalized-context CA, person-group CA, and situational CA. Traitlike CA is a personality-type orientation toward a given mode of communication across context, receiver, and time. Generalized-context CA is a relatively enduring personality-type orientation towards communication in a single context. There are four contexts identified in the generalized-content CA: public speaking, speaking at meetings or in classes, speaking in small group discussions, and speaking in dyadic interactions. The other two types of apprehensions are concerned with a single receiver (or listener), and are not relevant to developing programs or changing curricula.

Researchers in OCA report that individuals with high OCA tend to avoid situations requiring oral communication skills (McCroskey, 1984), avoid small group interaction (Daly & Miller, 1975), and tend to be poor contributors in discussion groups (Richmond, 1984). Their apprehension influences their selection of occupations and majors (Daly & McCroskey, 1975). McCroskey and Anderson (1976) found that students with high OCA did not do well in interaction-oriented classes. They tended to have low self-esteem, and as a result were evaluated by group members as having low credibility and low interpersonal attraction (Quiggins, 1972).

Several preliminary studies have been conducted on OCA in accounting students (Stanga & Ladd, 1990; Simons et al., 1993). These studies report above-average levels of OCA in sophomore accounting students. Of all business majors, studies found the highest levels of OCA in accounting majors. Stanga and Ladd (1990) found that almost 20 percent of the accounting students in their study had OCA scores that signified debilitating oral communication apprehension.

Writing Apprehension

Writing apprehension (WA) relates to a person's general tendencies to avoid situations perceived to demand writing which may be evaluated by peers and/or supervisors (Daly, 1978). The construct WA has been found to be separate from a variety of other somewhat similar variables, such as trait anxiety, oral communication apprehension, and receiver anxiety (Daly & Shamo, 1978). WA has been found to be only slightly correlated with CA (McCroskey, 1984).

Daly (1978) believes that individuals with WA find writing unrewarding and therefore will avoid situations where writing is perceived as required. When they find themselves in such situations, they experience anxiety. Previous research has found that individuals with high WA select majors and occupations which they perceive as having significantly lower writing requirements. A slight inverse correlation has been noted between WA and the individual's tolerance for ambiguity (Daly & Miller, 1975). WA has also been found to be inversely but significantly related to various measures of self-concept as well as to ratings of self-competence or self-esteem (Daly, 1977; McCroskey et al., 1977).

The construct WA is related to the attainment of writing skills and competence. A negative relationship seems to exist between WA and writing competence. Daly (1978) found that the level of WA was inversely related to an individual's grammar, mechanics, and skills test scores. The level of WA affects both writing competency test scores and the quality of essays (Faigley et al., 1981). The level of WA affects the content of writing assignments, even to the number of words, the amount of qualification, and the intensity of the language (Daly, 1977). Essays written by individuals with high WA tend to be evaluated significantly lower than those written by low apprehension subjects (Daly, 1977).

The only study that involved accounting students was a study of college sophomores, which found that accounting majors had the highest level of WA of all business majors in the sample. They were, however, less apprehensive about writing

than students reported in the national norms for all majors established by Daly (1978). Fox (1980) found that this level of WA can be reduced, depending on the teaching methods used in compulsory writing courses.

Mathematics Apprehension

Mathematics anxiety involves feelings of tension that interfere with the manipulation of numbers and the solving of mathematical problems in both ordinary life and academic situations (Richardson & Suinn, 1972). The discomfort varies in intensity depending on the person. It may arise from feelings of helplessness in problem-solving, lack of out-of-class opportunity to practice mathematics, role conflict, or unfortunate experiences with a math teacher (Tobias, 1978). Math anxiety or "mathophobia" has been recognized in professional circles as contributing to underachievement in mathematics. From the second half of the seventies, the focus on math apprehension has included a look at the individual's psychological state rather than solely focusing on skill deficiencies.

Some studies of math anxiety have found that MA is related to levels of general anxiety (Llabre & Syarez, 1985), while other studies have found that mathematics anxiety exists among many individuals who do not ordinarily suffer from any other anxieties (Suinn, 1970; Frary & Ling, 1983). As to performance, there is again no clear consensus. Some studies have found an inverse relationship between math anxiety and performance, while others found that the level of math anxiety could not be used to predict math performance (Resnick et al., 1982; Llabre & Syarez, 1985).

No studies of MA in accounting students have been reported in the academic literature.

Measures of Apprehension

As a result of forty years of research, several instruments have been developed and adapted to measure these three student apprehensions. OCA is measured most often using McCroskey's (1984) Personal Report of Communication Apprehension

(PRCA-24). The instrument measures a subject's feelings about communicating in four settings: conversations, public speeches, meetings, and group discussions. PRCA-24 takes into consideration both traitlike and general situational orientation. Daly and Miller (1975) developed the Writing Apprehension Test (WAT), which has been used in several studies (Daly, 1977; Daly & Shamo, 1978; Bennett & Rhodes, 1988). Richardson and Suinn (1972) constructed the Mathematics Anxiety Rating Scale (MARS) to provide a measure of the anxiety associated with manipulation of numbers and the use of mathematical concepts. Plake and Parker (1982) developed an instrument to measure math anxiety in class-related situations.

Based on the above instruments, Lowe et al. (1994) developed a reduced-measure instrument that accounting educators can use to measure all three apprehensions simultaneously. They found that the psychometric properties of their measure compare favorably to the original measures with regard to internal consistency and discriminant validity. The instrument tests four dimensions of OCA: conversation apprehension, public speaking apprehension, speaking at meetings apprehension, and participating in group discussions apprehension. To measure WA, the instrument tests two dimensions: students' perceptions regarding rewards associated with writing and students' perceptions about how easy it is for them to write. To measure MA, the instrument tests two dimensions: apprehension towards learning mathematics and apprehension regarding preparation for and taking math examinations.

Conclusion

Studies targeting accounting students' apprehensions in oral and written communication skills are limited; in mathematics, studies do not exist. Certainly, all three areas require further exploration. Understanding the basis of apprehension is necessary to remediate apprehension. The above studies identify accounting students with above-average levels of OCA (Stanga

& Ladd, 1990), and high levels of WA (Daly, 1978). As the curriculum for accounting students changes to meet professional requirements, it will not be enough merely to incorporate and enhance communication skills in the learning environment. Apprehensions associated with these skills must be addressed.

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With a portrait of William G. Robrer, on the occasion of the first Robrer Lecture Series, are (from left) Rowan College President Herman James; Dean of the School of Business Steven McNeil; Linda Robrer, Trustee of the Robrer Foundation; and featured speaker Terrence Larsen, Chairman and CEO of CoreStates Financial Group.