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FROM CLASSROOM TO WORKPLACE: AN EXPLORATION OF HOW  
TEACHERS AND EMPLOYERS OF ACCOUNTING GRADUATES  
DEFINE AND ASSESS CRITICAL THINKING IN ACTION

A Dissertation Submitted in Partial Fulfillment of the  
Requirements for the Degree  
Doctor of Education  
in  
Organizational Leadership

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## ABSTRACT

### From Classroom to Workplace: An Exploration of How Teachers and Employers of Accounting Graduates Define and Assess Critical Thinking in Action

By Christine Jagannathan, EdD

**Purpose.** The purpose of this study was to explore how 2 important stakeholder groups of Southern California business education, regional faculty and employers of accounting graduates, defined and assessed critical thinking skills.

**Methods.** A literature review identified 2 key variables—conceptualization and operational assessment of critical thinking. To identify how 2 stakeholder groups of management education see critical thinking in action, participants were sampled from regionally and nationally accredited institutions of higher education and from employers within the private and public accounting sector across Southern California.

**Findings.** Little to no consensus was found within respondent groups or between them with regard to how critical thinking is conceptualized. Consensus was found both within respondent groups and between them in regard to a lack of specific mechanisms by which critical thinking might be assessed. Some consensus was found between respondent groups regarding cross application of skills as evidence of critical thinking. Overall, neither group could provide specific examples of critical thinking in action.

**Conclusions.** The study's findings highlight a need for more targeted research to offset the current experimental approach to teaching critical thinking in management education. While different perspectives of critical thinking were anticipated between educators and employers, little evidence emerged from this study to support this speculation. Suggested areas for future management education research include (a) the creation of more effective instruments, designed around professional competencies, to determine how a larger pool of employers rank skills they would like to see in new hires; (b) a focus on distinguishing between a learner's innate skills and what can be learned in a classroom environment; (c) additional research to determine how "soft skills," such as critical thinking, are best assessed in the classroom and in the workplace; (d) the role of computer-based instruction in relation to respondents' claims that there is an increased need for critical thinking partly due to advances in technology; and (e) gaining a better understanding of the transfer of critical thinking to help students become aware of their role in effectively transferring skills across different contexts.

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## CHAPTER I

### INTRODUCTION

A key issue facing present-day U.S. higher education is its continued relevance in producing workplace-ready graduates for a complex, continually evolving business environment. Universities, specifically business schools, have long been viewed as the essential suppliers of a strong, innovative workforce required to create and maintain a high quality of life—a view that has recently come under considerable fire. A primary driver for this criticism is advances in information technology and globalization. In the words of Konosuke Matsushita, founder of Matsushita Electric, “Business is now so complex and difficult, the survival of firms so hazardous in an environment increasingly unpredictable, competitive and fraught with danger . . . that their continued existence depends on the day-to-day mobilization of every ounce of intelligence” (as cited in Davenport & Prusak, 2005, para. 55).

Managing organizations effectively in such an environment requires new ways of thinking and acting, or what Drucker (1959) referred to as knowledge work, since employers increasingly seek workers with innovative problem-solving and decision-making skills. These problem-solving skills are considered nonroutine and therefore require what Reinhardt, Schmidt, Sloep, and Drachsler (2011) described as a combination of convergent, divergent, and creative thinking—encapsulated under the umbrella term

*critical thinking skills* in higher education. However, there appears to be a skills gap in how effectively graduates use critical thinking in the workplace and how effectively educational programs teach them or help them to develop critical thinking skills.

Hart Research Associates (2013) found that employers valued demonstrable critical thinking above students' college major and asked that colleges place more emphasis on the acquisition of higher order thinking skills such as critical thinking, innovation, and problem solving. Similarly, Piper (2004) believed that interviewers must focus almost exclusively on determining a candidate's ability to think critically to avoid making bad hiring decisions. Finally, Chartrand, Ishikawa, and Flander (2013) indicated that critical thinking ranked as the number one skill graduates would be expected to demonstrate in the workplace. Minton-Eversole (2013) showed more than 66% of organizations that hired full-time staff complained of a skills gap including problem solving and critical thinking. Similarly, in a joint effort, *The Chronicle of Higher Education* and *American Public Media's Marketplace* (2012) found that while employers were not altogether unfavorable toward the role a 4-year degree plays in readying graduates for the job market, results across industry sectors indicated a skills gap in the areas of oral and written communications, problem solving, and critical thinking skills.

In management education, acknowledgment of this skills gap can be found as well. Datar, Garvin, and Cullen (2010) defined eight unmet needs across business programs, including a high level of critical thinking. More specifically, even highly technical disciplines like accounting find themselves facing a demand to produce graduates with both technical and critical thinking skills (Reinstein & Lander, 2008).



The American Institute of Certified Public Accountants (AICPA), for example, developed what it termed as its Core Competency Framework in 1999. Based on the framework, the AICPA (2000) called for a major overhaul of the CPA (Chartered Public Accountant) exam so as to include testing for critical thinking. This is in keeping with the Accounting Education Change Commission (AECC, 1990), Albrecht and Sack (2000), the American Accounting Association (Bedford et al., 1986), and Arthur Andersen & Co. et al. (1989) calling for accounting education to place increased emphasis on critical thinking in accounting curriculum.

### **A Call for Accountability**

The abovementioned skills gap has caused a significant paradigm shift for university education, whereby the once pervasive conscience-of-society paradigm has morphed into a more economically oriented purpose for universities (Gibbons, 1998). As a result of this paradigm shift, there is an increased demand for accountability from all educational stakeholders with regard to creating measurable links between what is taught, desired learning outcomes, their relevance to future employment, and the cost of higher education. For example, Husnain and Parekh (2013) reported how the recent global recession demonstrated a singular lack of critical thinking, problem solving, and decision making on the part of finance industry insiders, prompting University of Manchester students to demand a complete overhaul of the curriculum so as to bring it in line with today's economic reality. Similarly, President Obama recommended Pell Grant bonuses

for public colleges with high graduation rates, and penalties for colleges with high dropout rates (Kelderman, 2013).

While major educational stakeholders call for accountability, there is much debate about how this is to be provided (Bartlett, 2002; Rippen, Booth, Bowie, & Jordan, 2002; Tempelaar, 2006). For example, Niu, Behar-Horenstein, and Garvan (2013) conducted a meta-analysis of empirical studies regarding the efficacy of educational interventions on the development of critical thinking in college students. The authors discovered many hurdles in measuring teaching efficacy, such as operationalizing a general definition of critical thinking so that its application can be detected within the context of each discipline-specific course (Niu et al., 2013). An overview of accounting education literature demonstrated a similar lack of consensus as to which pedagogical interventions were most effective, the exact nature of the skills gap, the most desired learning outcomes, and which assessment instruments were to be used, as each revealed its own limitations (Paisey, & Paisey, 2010; Pan & Perera, 2012; Reinstein & Lander, 2008; Watson, Apostolou, Hassell, & Webber, 2003; Wolcott, Baril, Cunningham, Fordham, & St. Pierre, 2002).

As can be seen from the discussion so far, there remains a decided lack of consensus about how educational effectiveness is to be defined and assessed even when looking at a specific skill set within a specific business context—be it in the classroom or in the workplace. In fact, Coleman, Mason, and Steagall (2012) pointed to an overall lack of literature on critical thinking in business. Additionally, there is an apparent gap in the literature looking at how employers define demonstrable critical thinking skills in the

workplace (The National Leadership Council for Liberal Education & America's Promise [LEAP], 2007; Piper, 2004) and how these definitions compare with definitions used in management education within and across domains such as accounting (Lai, 2011; Petress, 2004). Therefore, by identifying differences in how accounting faculty and professionals conceptualize and measure critical thinking, it was hoped that this research would contribute to engagement and alignment between management education outcomes and the expectations within the accounting profession.

### **How Is Educational Effectiveness to Be Determined?**

While it is now understood that business education is in need of an overhaul in response to the abovementioned unmet needs, there is still a lot of uncertainty with regard to changing the curriculum to meet those needs. As Daniel (2015) pointed out, compiling relevant data in education is compounded by the diversity of missions, outputs, inputs, and other variables between and within institutions of higher education. The business education industry alone comprises 12,600 institutions awarding bachelor's degrees or higher (Association to Advance Collegiate Schools of Business [AACSB] International Globalization of Management Education Task Force, 2011).

To put the overall complexities involved with defining and assessing educational effectiveness in perspective, it is helpful to look at how this plays out in the literature about accounting education. Kavanagh and Drennan (2008), in their meta-analysis of accounting literature, concurred with the ongoing discussion about the call for a revision in existing accounting curricula to produce graduates with a broad set of skills beyond

technical expertise. The authors further highlighted gaps in the literature between what the accounting profession knows is required by its professional bodies (e.g., CPA) and what attributes employers and practitioners wish to see in entry-level employees versus how prepared accounting graduates actually feel about entering this profession.

Additionally, they found next to no literature on specific, measurable skill sets required by employers of accounting graduates (Kavanagh & Drennan, 2008).

### **Achieving Desired Learning Outcomes: The Case of Critical Thinking**

While Datar et al. (2010) concluded their study by admonishing business schools to improve their teaching of critical thinking skills, Petress (2004) pointed to the lack of a comprehensive definition as to what this term really means, thereby making measuring or assessing critical thinking next to impossible. For example, Petress cited a psychology text defining critical thinking as examining assumptions, discerning hidden values, evaluating evidence, and assessing conclusions, while a survey of communications literature by Petress yielded the following definition: “involving the ability to explore a problem, question, or situation; integrate all the available information about it; arrive at a solution or hypothesis; and justify one’s position” (p. 461). In fact, critical thinking may be defined as a set of characteristics (Ferrett, 2015), a process (Halpern, 1996; Scriven, & Paul, 2003), or a taxonomy of relevant terms related to the act of critical thinking (Anderson & Krathwohl, 2001). This variance in definitions stems from the respective academic disciplines from which the concept of critical thinking originated: philosophy,

psychology, and education (Bloom, Engelhart, Furst, Hill, & Krathwohl, 1956; Kennedy, Fisher, & Ennis, 1991; Lewis & Smith, 1993; Sternberg, 1986).

Given this lack of consensus regarding a definition of critical thinking, Paul (1992) argued that no one definition should be given precedence over another as definitions, at best, serve as a foundation on which to develop a deeper understanding of what critical thinking implies. The literature did, however, provide evidence that there are “several aspects of the term common to many sources and there are some characteristics unique to various disciplines” (Petress, 2004, p. 465). Lai’s (2011) meta-analysis of literature on critical thinking definitions synthesized scholarly agreement and disagreement as to what constitutes critical thinking. Lai found agreement on critical thinking as a set of abilities and a disposition to think critically, and on the importance of domain-specific background knowledge about which to think critically. She found scholarly disagreement over how important disposition is, whether critical thinking could be taught across domains, and whether critical thinking skills are transferrable across domains and contexts (Lai, 2011).

As acknowledged by Schoenberg (2007), this scholarly confusion reaches into aspects of business education and workplace literature as well. For example, Sampson, Moore, and Jackson (2007) argued that business education relies primarily on self-reporting by students to determine whether critical thinking skills have been successfully acquired, but the authors found that students were only able to identify some aspects of critical thinking. Similarly, in a survey of medical educators, Krupat et al. (2011) found discrepancies between how critical thinking is defined and how it is assessed.

## Can Business Education Produce a Workplace-Ready Thinker?

### Impediments and Implications for Instruction

Education literature clearly highlights an ongoing debate about the need for curricular changes in response to workplace needs with more questions than answers about what should be taught and how it should be assessed. For example, Flores, Matkin, Burbach, Quinn, and Harding (2012) made the distinction between a person who has a high level of education (background knowledge) and a person who is educated well (attributes and disposition). Flores et al. found students deficient in applying their background knowledge in context-specific real-life situations, a deficiency mirrored in the general public due to humans being programmed to seek intuitive cause-and-effect relationships whether they exist or not. Therefore, the researchers cautioned against unrealistic expectations regarding the efficacy of critical thinking instruction in the classroom.

Other factors at play in whether students acquire critical thinking skills relate to their prior educational experiences—that is, how much exposure to critical thinking they received during high school (Paul, 1992). Similarly, there is a question of how long it takes for critical thinking skills to develop. Kuhn (1999) linked longitudinal development of critical thinking skills to the level of sophistication in students' metacognition. According to the researcher, the first stage of metacognition involves categorizing domain-specific knowledge, while the last stage involves understanding that there are a variety of ways in which a given reality can be represented (Kuhn, 1999).

However, whether students' critical thinking skills evolve to this last stage depends on their overall educational experience while in college. For example, a student who actively engages with professors, peers, or people in the community may develop critical thinking skills more effectively than a student who limits interactions to classwork and familiar social environments alone (Gellin, 2003).

These concerns are again echoed in accounting literature. Watson et al.'s (2003) meta-analysis of 117 descriptive and 89 empirical articles published in the four major accounting education journals between 2000 and 2002 synthesized the "contributions of new ideas and reinvestigations in the traditional areas of assessment, curriculum and instruction, educational technology, faculty issues, and students" (p. 311). The authors concluded that present research did not yield empirical evidence indicating how accounting education could be improved or what specific skills should be taught, nor did it identify which assessment measures would yield valid feedback to be utilized in improving the curriculum. Not surprisingly, the article ended with a call for well-designed research to provide faculty with the means to prepare accounting students for the working world (Watson et al., 2003).

Snyder and Snyder (2008) defined four distinct barriers to both teaching and acquisition of critical thinking in business education: a lack of teacher training, limited pedagogical resources, biased preconceptions in both faculty and students, and time constraints for faculty. As Rippen et al. (2002), Landsman and Gorski (2007), and Lundquist (1999) pointed out, critical thinking cannot be considered an innate ability but rather should be viewed as a skill requiring careful nurturing and practice over time.

Therefore, any impediments to such practice must be overcome if students are to become successful critical thinkers.

Unfortunately, teachers still continue to be trained in content rather than critical thinking methodology (Broadbear, 2003). When this lack of training is coupled with a lack of pedagogical resources geared toward engaging students in critically thinking about content, along with the typical time constraints of covering a lot of content in a short amount of time, it is no surprise that most business faculty fall back on tried and tested methods of instruction and assessment—namely, lectures and objective rather than subjective assessment methods (Scriven & Paul, 2003). In agreement with Snyder and Snyder's (2008) list of impediments, Kang and Howren (2004) pointed to personal bias as a potent obstacle to thinking objectively about content. They found these biases in both faculty and students deeply influencing how and what content was being taught and how it was interpreted. In other words, personal bias acted as a filter preventing open, objective inquiry and analysis (Kang & Howren, 2004).

### **The Problem of Transference**

While Reid and Anderson (2012) claimed evidence of successful transference in their sample population, there was disagreement in the literature over whether critical thinking skills do indeed transfer across domains and contexts. For example, Nickerson (1988) found mixed results in empirical studies on transfer depending on how and what was being taught. He cited the example of metacognitive skills transferring quite well with more basic cognitive processes (e.g., observing or classifying) seemingly not



transferring. An important outcome of Nickerson's research was that successful transfer depended on whether critical thinking instruction took place within a discipline-specific course or in a standalone course as is common in many undergraduate curricula. A final issue with transference was the concept of distance (Bailin, 2002; Ennis, 1989), whereby transfer might be successful if skills learned in an academic setting were applied to a new but similar task while transfer might be unsuccessful if skills had to be applied in a new domain or outside the academic setting altogether.

In fact, even corporate training programs have reported dissatisfaction with transference. By the early 1990s, corporations were spending upwards of \$45 billion on training employees (Foxon, 1993). However, Baldwin and Ford (1988) and Gist, Bavetta, and Stevens (1990a, 1990b) pointed to the lack of evidence that training programs resulted in desired workplace application of critical thinking. Whereas Gradous (1991) indicated that training programs had an acceptable track record with transferring motor skills, both business and corporate education reported failure in transferring more cognitively demanding skills such as critical thinking, communication, and leadership. In fact, Foxon's (1993) content analysis of 30 articles about transfer failure identified 128 inhibiting factors she then grouped into four categories including organizational climate unfavorable to transfer, training designs that were too theoretical or in conflict with organizational values, incompatible training delivery methods, and unmotivated learners or learners who could not master skills.

Overall, Foxon's (1993) research demonstrated a lack of synergy between the training environment and the workplace, not unlike the lack of synergy between

accounting education and what is expected of graduates in the workplace. More recent literature indicates that skills transfer remains a problem. According to Miller (2012), the American Society for Training and Development (ASTD) reported a total training expenditure of \$156.2 billion by U.S. organizations in 2011 alone. Nevertheless, fully 70% of training efforts failed after program completion for many of the reasons stated in the earlier literature (Kasperik & Herlevi, 2009). It is therefore necessary to understand the precise nature of the critical thinking skills that business graduates should be taking with them into the field and the impediments for their successful transfer in the workplace. Otherwise, as Evans, Thornton, and Usinger (2012) argued, educational institutions will fall prey to “initiativitis” (p. 155), or the blind, continual implementation of change efforts without regard to how such efforts impact each other or the organization’s systems and stakeholders.

### **Purpose and Research Question**

The literature indicates that much is left to be explored with regard to teaching, acquiring, assessing, and transferring critical thinking skills from the classroom to the workplace. One such unexplored area is whether business faculty and employers see eye to eye with regard to defining and assessing critical thinking skills. Therefore, the purpose of this study was to explore how two important stakeholder groups of Southern California business education, accounting faculty and regional employers of accounting graduates, report definitions of critical thinking and how they expect graduates to demonstrate critical thinking.

The objective of the study was represented in the following research question:  
 What differences exist in the conceptualization and operational assessment of critical thinking between those who teach accounting and those who seek to employ accounting majors?

### **Delimitations of the Study**

The study explored a gap in the literature regarding how two key stakeholders of business education, faculty and employers, define critical thinking in action. The focus of this study was intentionally limited to educators and employers because they were viewed as the primary actors in the preparation and employment of graduates. It was limited to institutions of higher learning within Southern California based on the assumption that students seeking both education and employment in the region would require consistency between what is taught and what is expected by employers. Additionally, this delimitation ensured the study was feasible in terms of limiting time and resources needed for travel.

### **Significance of the Study**

A survey of employers by Hart Research Associates (2013) showed that fully 93% sought graduates with critical thinking, problem-solving, and communication skills as evidenced via e-portfolios showcasing student work while in college. However, Datar et al. (2010), while admonishing business schools to adapt, cautioned them to make wise choices in keeping with institutional missions, goals, and capabilities. Therefore, this study sought to provide accounting programs in Southern California with valuable

insights to help them tailor curriculum design and learning outcomes to the needs of regional employers.

The literature also indicated great confusion with regard to how critical thinking skills were to be measured and defined both in education and in the workplace. As such, one aim of this study was to shed light on how critical thinking is defined and assessed by regional employers so that steps could be taken to incorporate relevant pedagogies and techniques that would result in measurable and relevant learning outcomes.

Gardiner (2011) highlighted a continuing supply-and-demand problem with qualified business faculty. With more business schools springing up and more students enrolling worldwide, there is an increasing demand for qualified faculty. However, a wave of retirements and a shrinking number of those earning business doctorates has created a significant shortage of business faculty. This means that smaller schools find themselves relying on visiting professors, adjunct faculty, or faculty without doctorates. Therefore, this study hoped to provide some direction in hiring decisions and possible avenues for training non-tenure-track faculty in keeping with attaining desired learning outcomes.

Finally, the study sought to provide valuable insights into what higher education can be held accountable for, how young adults learn, and the nature of workplace inhibitors that might prevent the transfer of skills from classroom to workplace.

## Definitions of Terms

**Accounting.** As defined in *A Dictionary of Accounting*,

The process of identifying, measuring, recording, and communicating economic transactions. Measurement is normally made in monetary terms and the accountant will prepare records in the form of, such as a profit and loss account and balance sheet. Accounting can be subdivided into financial accounting, which is mainly concerned with the legal aspects of the subject and reporting to parties external to an organization, and management accounting, which is mainly concerned with providing information helpful to managers running a business. Accounting includes various activities, such as conducting audits, book-keeping, and taxation. (“Accounting,” 2010, para. 1)

**Business or management education.** Business or management education is housed under the umbrella of career and technical education. In its inception, business education focused on basic office skills such as typing, dictation, or filing (Broer, Raduege, & Muth, 2006). Current curricular focus, in response to industry and consumer demands, has shifted to helping students understand technology, finance, and communication. Classes include marketing, accounting, finance, business law, entrepreneurship, management, and information technology. In addition, business schools must have advisory boards with 51% of membership drawn from community business members in order to facilitate the creation of student internships, job shadowing, and off-campus visits. Student participation in business-related extracurricular organizations such as Future Business Leaders of America (FBLA) is also heavily encouraged (Broer et al., 2006).

**Critical thinking attributes.** Critical thinking attributes are those cognitive skills associated with an individual’s ability to think critically (e.g., the ability to analyze or synthesize information) and willingness to put those cognitive skills to use when needed.

**Critical thinking dispositions.** Critical thinking dispositions are attitudes or habits of mind required for thinking critically—for example, being open-minded or willing to take into consideration another point of view.

**Critical thinking skills.** “Critical thinking can be seen as having two components: 1) a set of information and belief generating and processing skills, and 2) the habit, based on intellectual commitment, of using those skills to guide behavior” (Scriven & Paul, 1987, as cited in Foundation for Critical Thinking, n.d., para. 5).

**Domain-specific critical thinking.** Domain-specific critical thinking involves the background knowledge or context informing the act of thinking critically—for example, analyzing a mathematical problem versus evaluating whether someone’s actions were ethical.

**Finance.** Finance is defined as follows:

The science that describes the management, creation and study of money, banking, credit, investments, assets and liabilities. Finance consists of financial systems, which include the public, private and government spaces, and the study of finance and financial instruments, which can relate to countless assets and liabilities. Some prefer to divide finance into three distinct categories: public finance, corporate finance and personal finance. All three of which would contain many sub-categories. (*Introduction to Finance*, n.d., p. 2)

**Higher order thinking skills.** “Higher order thinking skills include critical, logical, reflective, metacognitive, and creative thinking” (F. J. King, Goodson, & Rohani, n.d., p. 1).

**Pedagogy.** “The art, science, or profession of teaching” (“Pedagogy,” n.d., para. 1).

## Chapter Summary and Organization of the Study

Chapter I introduced the problem statement including the complexities involved with defining, teaching, assessing, and transferring soft skills, specifically critical thinking skills. The chapter concluded with the purpose of the study, research questions, and significance of the study. Chapter II continues the discussion with an in-depth review of literature relevant to a deeper understanding of critical thinking development in academia and its role in accounting and finance education, as well as the forces driving the need for critical thinking skills in the workplace. Chapter III describes aspects of the methodology of the study, including research methods, the nature of the population, sampling and data collection procedures, and data analysis. Chapter IV presents the analysis and discussion of the findings, while Chapter V reviews the findings in relation to their implications and directions for future research.

## CHAPTER II

### A REVIEW OF THE LITERATURE

Chapter I identified the following issues: (a) the need for higher order thinking skills in the workplace due to the impacts brought on by globalization and technology (Chartrand et al., 2013; Davenport & Prusak, 2005; Drucker, 1959); (b) the complexity that management education faces in determining what to teach, how best to teach it, and how to ensure the successful transfer of learning to new and varied contexts (Paisey & Paisey, 2010; Pan & Perera, 2012; Reinstein & Lander, 2008; Watson et al., 2003; Wolcott et al., 2002; Young & Warren, 2011); (c) the inability of both industry and education to adequately define and operationalize specific skill sets like critical thinking so that they could be incorporated into learning outcomes and effectively assessed both in the classroom and in the workplace (Bloom et al., 1956; Kennedy et al., 1991; Lewis & Smith, 1993; Petress, 2004; Sternberg, 1986); (d) the experimental nature of how critical thinking is taught due to issues of teacher training, limited pedagogical resources, biased preconceptions in both faculty and students, and faculty time constraints (Kang & Howren, 2004; Scriven & Paul, 2003; Snyder & Snyder, 2008); and (e) the lack of synergy between the classroom, the training environment, and the workplace, thereby creating problems with the successful transfer of cognitive skills (Bailin, 2002; Ennis, 1989; Foxon, 1993; Nickerson, 1988; Reid & Anderson, 2012).



In order to avoid what Evans et al. (2012) argued is a typical phenomenon, a tendency by most schools to be caught in an endless cycle of change, it is necessary to fully understand all the variables at play in making meaningful changes in management, specifically accounting, education. Therefore, Chapter II further explores the issues mentioned above. The chapter begins with an initial look at exactly how globalization and technology have impacted the workplace and the causal relationship between these impacts and the apparent need for business graduates to be armed with critical thinking skills, over and above the technical skills that management education traditionally provides.

### **Globalization and Technology as Change Agents**

The world is your oyster. Do you have the right fork? (Stewart, 1999, para. 1)

As mentioned in Chapter I, business education is facing a new normal with regard to its effectiveness in meeting educational needs as they pertain to the workplace readiness of graduates. On the one hand, some scholars see business education at a crossroads precisely because it is too reactive to the market (Bennis & O'Toole, 2005; Pfeffer & Fong, 2002). Concerns revolve around the relevance of what business schools teach, with scholars like Ghoshal (2005) arguing that good management practices are being usurped by what he called bad management theory, while others pointed to a proliferation of bad theories in fields like financial economics, which they partially blamed for spearheading the recent financial crisis (Currie, Knights, & Starkey, 2010; Locke & Spender, 2011). Similarly, scholars like Mintzberg (2004) and Schoemaker

(2008) critiqued the overspecialized nature of the analytical models used in business classes as inadequate for teaching the managerial skills required to effectively lead companies in an increasingly complex, ambiguous, and constantly changing economic environment.

On the other hand, school administrators like Andrew Policano (2011), dean of the School of Business at University of California (UC) Irvine, while acknowledging the curricular shortfall of business education, pointed to market forces as instigators for the need to change course:

Today, business schools are expected to be much more customer-focused, entrepreneurial, and self-reliant . . . business schools need to be more global. They depend on “selling their products” to an increasingly global market that demands students who are prepared to implement global strategy and who possess international experience, cultural awareness, and the ability to work in cross-cultural environments . . . business schools must create an educational experience that develops global leaders who can react swiftly and effectively to far-reaching shifts in international economic dynamics. (Foreword)

What all the criticism has in common is recognition of the impact globalization and advances in technology are having on the world economy and in turn on management education. In its report, the Association to Advance Collegiate Schools of Business (AACSB) International Globalization of Management Education Task Force (2011) pointed to globalization as the single most significant force impacting business today. In fact, the impetus for the AACSB report was a sense that globalization was transforming management education on par with prior paradigm shifts in the 1950s (shift from application to research), in 1988 (shift toward humanism), in the 1990s (rise of business school rankings and leadership development), and in the 2000s (debates about the

management profession). As such, the report underscored the urgency of understanding globalization's impacts on business education so as to ensure that business schools remain competitive in attracting and retaining students (AACSB International Globalization of Management Education Task Force, 2011).

As it was this study's stated intention to provide management educators, specifically accounting educators, with insight into how employers define and measure critical thinking skills in action, so as to both guide changes to curriculum or classroom practices and highlight what can and cannot be done in the classroom, it is equally important to first understand how the workplace is being affected by global and technological forces.

### **Impacts of Globalization**

Because the relationship between the business world and management education is largely symbiotic, consultants, advisors, and of course researchers have come forward to render aid to beleaguered managers worldwide. A search for terms like *globalization* and *management* revealed the oceans of written material dealing with all aspects of globalization including whether it is a positive or negative phenomenon. However, Altman (2006) argued that engaging in futile debates about the pros and cons of globalization does not contribute meaningfully to dealing with its impacts, so the debate should shift to fruitful discussions about how to deal with globalization. In the words of Phillip Overmyer, executive director of the Singapore International Chamber of Commerce,

As the global economy becomes more integrated, you discover that your potential customers, partners, suppliers and competitors can emerge from literally any country in the world. The challenge is to be able to clearly and thoroughly understand the needs, drivers and characteristics of these many different players, so you can develop your own strategy. (as cited in Altman, 2006, para. 13)

One often touted impact of globalization is a supposed integration of the global economy. However, Solari (2012) pointed out how globalization's pressure to evolve toward a commonly shared model caused sharp counterreactions from those seeking to protect national identities and traditions. This was particularly marked in the wake of the global financial crisis, which served to delegitimize finance and business. Therefore, managers are now faced with rethinking existing management strategies in order to balance managing globally while finding local acceptance and legitimacy (Solari, 2012). Kale and De (2013) referred to this tendency to protect national identities and traditions as "de-territorialization—the severance of social, political, and cultural practices from their native places" (p. 286). Kale and De (2013) therefore concurred with Solari (2012) that the "power of homogenization accorded to globalization may be grossly overestimated or even misattributed" (p. 287).

In fact, Appadurai (1996) and Hannerz (1989) indicated that globalization has created a cultural void in the lives of those impacted by it due to an unending flow of products, media, and capital through previously sovereign nations or, in some cases, geographically isolated communities. This has resulted in what many deem as a threat to national and personal identity, thereby causing them to *reterritorialize* (Kale & De, 2013). Appadurai (2000) argued that such a response creates cultures that are dichotomous in that they are both cosmopolitan and highly tribal at the same time. So,

while a market of 32 developed countries (1 billion potential customers) and 162 developing nations (6 billion heading into the middle class), with a forecasted growth potential of \$27.3 trillion in the next 3 years, provides a wealth of business opportunities, Brush (2013) cautioned that without an understanding of how different countries, regions, or cultures operate, managers will not be able to capitalize on these opportunities.

Globalization has also brought about generational and cultural differences in the workplace with multiple generations working together, resulting in friction as value systems clash (Twenge, 2010). This is creating challenges to existing leadership styles and issues with effective management of a diverse workforce in the face of an increased need for working collaboratively with people from diverse backgrounds. As such, effective teamwork and effective communication are skills increasingly in demand. This has manifested in both professional and educational contexts through the use of collaborative technologies such as Google Docs, Skype, and file-sharing sites like Dropbox and in how students are now evaluated on both learning outcomes and how well they collaborate in group work (L. Johnson, Adams, & Cummins, 2012).

Related to generational differences is how aspects of organizational design are increasingly impacted by a variety of forces. Gibbs, Heywood, Weiss, and Jost (2012) argued for altering the very structures of global companies to support efficiency in communication and continued growth in emerging markets. Another contributing factor is how aggressively a firm taps differences in global talent to garner innovation and creativity in its problem solving and decision making (Cox & Blake, 1991; Hofstede, 1980). For example, employers are increasingly sending members of their workforces to

different countries to build new subsidiaries or lend support to those already established (Beaverstock, 2012), without regard to how prepared these individuals are linguistically, culturally, or socially (Herrmann, 2012). This in turn has had a major impact on the job markets, with people traveling to find jobs and employers requiring new skills for positions that did not previously require such skills (Herrmann, 2012).

The U.S. manufacturing sector is a case in point. Barlas, Verschoor, Williams, and Randall (2003) explained how in just over 5 years, U.S. manufacturers sent thousands of jobs overseas to save on labor costs, leaving behind a labor pool in need of retooling. Along with manufacturing jobs, U.S. companies also found affordable, skilled labor particularly in countries like India, which became a favored destination for “white collar positions such as customer care, IT development and support, payroll, engineering, and loan/claim processing” (Barlas et al., 2003, p. 19). Thus, globalization has created opportunities, but only for highly skilled knowledge workers willing to avail themselves of jobs in other countries or for companies skilled enough to successfully outsource or relocate (Lam, 2010).

An additional challenge is the effective utilization, in specific problem-solving contexts, of the increasingly large amounts of knowledge being continually produced from many different sources. For example, Gibbons (1998) pointed to a growing confluence between the research practices in both universities and industry. However, universities, while quite capable of producing knowledge, tended to lag when it came to accessing relevant information from disparate sources (Gibbons, 1998). Similarly, Rip (2001) pointed to the distance between where knowledge is produced (e.g., laboratories,

universities, institutes) and how and where this knowledge is actually utilized.

Additionally, L. Johnson, Smith, Willis, Levine, and Haywood (2011) and L. Johnson et al. (2012) listed several key technological trends that will further influence how information is disseminated, gathered, and processed in both industry and higher education.

As economies continue to become more global and power shifts continue in the economic and political spheres, workers will be required to show higher levels of creativity and innovation while also being willing to take risks. For example, Tai Ming and Bates (2013) looked at how China's exclusion from access to U.S. military and civilian technologies was no longer an option in an era of convergence of these two sources of technology. As a result, companies operating in these industries are walking a tightrope between profitability and restrictions on certain kinds of technology. However, creativity and risk taking seemingly vary in the workforce. As a case in point, Lester (2011) indicated that while millennials ranked high on creativity in terms of the acceptance of new ideas, they ranked equally low on risk taking.

One challenge for educators is to enhance the educational experience by emphasizing risk-taking behaviors in the context of real-life projects that require creativity in problem solving and critical thinking. While experiments are underway to create more active, hands-on, student-centered learning environments, such as challenge-based learning, it is unclear whether these experiments are yielding desired results because, given the complexity of the global economic environment, it is impossible to create a one-size-fits-all management education experience suited to all possible business

contexts (L. Johnson et al., 2012). This underscores the need for studies such as this one to shed some light on how a single skill, critical thinking, is defined and assessed by *regional employers* within a single domain of management education, accounting, so that steps might then be taken to incorporate relevant pedagogies and techniques that would result in measurable and relevant learning outcomes in relation to one required workplace skill. For example, do regional employers of accounting graduates require them to be creative risk takers, or do they seek a different kind of higher order thinking for regional clientele?

### **Impacts of Technology**

Part of what is driving globalization is advances in information and other types of technology. Like globalization, evolving technology requires an adaptive workforce with continually evolving skills. Atasoy (2013) analyzed the expansion of broadband Internet on the U.S. labor market from 1999-2007 in order to determine whether the Obama administration's allocation of \$18 billion toward the spread of this technology was warranted. Atasoy found a 1.8% increase in the employment rate, more noticeable in rural areas, biased in favor of skilled, college-educated workers. Specifically, he found correlations between college degree holders and increased payrolls as well as growing labor demands in industries employing college-educated workers and skilled labor, which led to the conclusion that broadband expansion would widen the gap between skilled and unskilled labor (Atasoy, 2013).



Green (2012) found a similar correlation between college education, level of skill, and technology. Brynjolfsson and Hitt (2000) and Bresnahan, Brynjolfsson, and Hitt (2002) found that computerization substitutes labor for routine tasks but complements higher education for nonroutine tasks. This in turn explained a correlation between technology and a higher payroll since routine tasks traditionally favor midlevel salaries (Green, 2012). Another variable associated with technology is much higher employee involvement, which “promotes the use of problem-solving, self-planning, and communication skills, including literacy (both reading and writing). [This trend] can thus also be expected to alter the pattern of skills required to perform a job” (Green, 2012, pp. 64-65). Green (2012) concluded that with higher employee involvement comes a prevalence of tasks requiring higher level skills, which in turn will increase the demand for higher educational qualifications even for entry-level jobs.

However, while there is evidence that employers are looking for more than just technical skills, Grusky and Liu (2013) pointed to what can best be referred to as the *balkanization* of the literature regarding the confluence between what skills are in demand and how they are remunerated. Researchers have variously favored computer skills, scientific and other technological skills, creative skills, or managerial skills as being primarily in demand. To determine whether workplace remuneration favored any specific conclusions found in the literature, Grusky and Liu created a model to measure wage increases against specific skill sets. While the results showed a confluence between increased remuneration and higher skills across the spectrum of selected skills, using

wage data from 1979-2010, Grusky and Liu concluded that there was a notable spike for critical thinking and related analytical skills.

A case in point is the link between high remuneration and requisite skills in the global information technology (IT) sector. While technical skills such as software application development or network administration are in high demand, increasingly, employers are also looking for IT workers skilled in transforming raw data, such as would be stored in cloud-based systems, into useful business information for decision makers (O'Brien, 2013). As discussed later in the chapter, the ability to make sense of data and other types of information is one definition of critical thinking derived from the education perspective (Bloom et al., 1956).

### **Impacts of Globalization and Technology on the Accounting Profession**

Pounder (2006) looked at globalization's impact on the U.S. accounting profession from three aspects including how the profession will continue to become more globalized over time and why U.S. accounting principles are losing global dominance and even merging with international standards of financial accounting. In fact, Pounder found that globally, accounting bodies charged with setting accounting standards in different countries are rapidly coming to the joint conclusion that the profession needs a universal set of standards for both accounting and recording. For example, Wright (2014) stated that prompted by the recent global financial crisis, the Group of Twenty Finance Ministers and Central Bank Governors (G-20), in conjunction with the Financial Stability Board (FSB) and global standard setters such as the International Organization

of Securities Commissions (IOSCO), are looking to “reform global financial regulation and ensure a safer and more sustainable financial system” (para. 1). Similarly, in keeping with these proposed reforms, Tysiac (2014) predicted several key trends including global economic growth led by emerging economies; disruption of existing business processes, and simultaneously emerging new revenue and cost-saving streams; and a resulting rise in compliance and enforcement costs, as emergent within the profession.

Finally, Mervyn King (2014), chairman of the International Integrated Reporting Council, pointed out that the G-20 has been grappling with “designing an economic model capable of identifying, and then responding to, systemic and interconnected risks” (para. 4) on a global scale. This model would also integrate the notion of the “connectivity” of business information as a means of recognizing the interrelatedness of different aspects of a business and the interplay of environmental factors on its functioning (M. King, 2014, para. 4). This in turn would create a new corporate model of financial reporting requiring “integrated thinking” (M. King, 2014, para. 4). M. King indicated that such a model is currently under review in 25 countries and by several corporations such as Hyundai, PepsiCo, and the National Australia Bank.

As can be seen from the above discussion, globalization and technology seem to have created the need for a workforce with what the literature continually refers to as a higher level of skill or what F. J. King et al. (n.d.) referred to as “higher order thinking skills” (p. 1). This set of skills includes thinking critically, logically, reflectively, metacognitively, and creatively in the presence of unfamiliar problems or conditions of uncertainty. Building on this understanding of the need for critical thinking, the next

section looks at current trends in management education's response to the forces of globalization and technology.

### **General Overview of Management Education Response**

As can be seen from the discussion so far, globalization and technology are driving forces behind significant workplace changes. This in turn is driving a need for change in management education. However, as this section illustrates, these changes are occurring haphazardly while not yielding desired outcomes. As it was this study's stated intention to provide valuable insights into what education can be held accountable for, how young adults learn, and the nature of workplace inhibitors that might prevent the transfer of skills from classroom to workplace, it is important to understand how management education presently understands the forces of globalization and technology and is in turn responding to them.

The interconnectedness brought on by globalization has fueled innovation in fields from archeology and medicine through to the hard sciences. This is because the laws underlying physics, mathematics, and biological systems are standard across countries and cultures. Business leaders, on the other hand, "are called on to create the organizational processes and settings that enable innovations in the hard sciences to be developed and implemented in a contextually complex society" (AACSB International Globalization of Management Education Task Force, 2011, p. 5). As mentioned earlier, these contextual factors can include culture, social norms, and national and regional regulations and policies. However, due to the speed and fragmented nature of the

changes wrought by globalization, management education has been forced to react without the luxury of a learning curve. Additionally, Doh (2010) argued that there are many forces limiting the internationalization of U.S. business education, including a large, isolated market for goods and services and the only very recent arrival of information technologies that could be utilized to globalize these goods and services.

One finding of the AACSB International Globalization of Management Education Task Force (2011) report was that insufficient journal space has been given to recording the experiences and reflections of the symbiosis between business and business education. According to the AACSB International Globalization of Management Education Task Force, (2011), less than 4% of content in the top 20 business journals dealt with cross-border content. As a result, management schools lacked international pedagogical tools with which to achieve desired educational outcomes. This has resulted in a haphazard response to the impacts of globalization and technology, such as the variety of reasons driving the globalization of business schools, the lack of coherence in how the various schools globalize (e.g., focus on cross-border partnerships for student exchange or diversification of faculty and student population), and the lack of consistent quality across programs (AACSB International Globalization of Management Education Task Force, 2011).

Like the AACSB International Globalization of Management Education Task Force (2011), Doh (2010) found that while businesses have rapidly adapted to the changing economic environment brought on by globalization and technology, business schools have maintained a national or even local organizational outlook as delivery

services from education to cleaning have always been seen as local and bound by geography. Pankaj Ghemawat, a professor of global strategy at the IESE, a leading international business school in Spain, argued that most of the cross-border collaborations touted by business schools offered little genuine interaction beyond what might be found in a niche market segment of the hospitality industry (as cited in Mangan, 2009). To this end, Mintzberg and Gosling (2002) recommended a collaborative model for business schools so that students would have the opportunity to live and work in different countries while in their respective programs.

At the local level, industry and education partnerships are becoming increasingly common. For example, the American Association of Community Colleges (2017) lists such partnerships between a diverse range of industries (from aerospace to energy to biotechnology) and community colleges across the United States. Each program focuses on recruiting, training, and retention of students based on the local needs of the industry (American Association of Community Colleges, 2017).

As is clear from the literature, there appears to be a lack of consensus within all fields of management education as to what constitutes a relevant response to the impacts brought about by globalization and technology or how the efficacy of any response is to be assessed. Bruner and Iannarelli (2011), in a study sponsored by the AACSB, found an alarming gap between what the business world needs (e.g., critical thinking skills) and what management educators provide. Given the prevalence of management education providers across the globe, with 13,000 known institutions (see Table 1), the authors were concerned that only 10% of these organizations were accredited by agencies that apply

standards across international borders. Bruner and Iannarelli concluded that areas requiring further investigation included developing mechanisms to ensure both quality improvement and assurance across institutions, increasing international partnerships, significantly internationalizing business curricula, and connecting global activities to one another.

Table 1

*Number of Business-Degree-Granting Institutions as of June 2010 by Region*

Geographical region	Institutions (estimated)
Africa	767
Americas	3,695
Asia	6,087
Europe	1,975
Oceania	1,290

*Note.* Adapted from “Globalization of Management Education,” by R. F. Bruner and J. Iannarelli, 2011, *Journal of Teaching in International Business*, 22(4), p. 234.

There is even some doubt regarding the efficacy of the gold standard of business accreditation, the AACSB, to determine the value of one business school over another in producing workplace-ready graduates. Bastin and Kalist (2013) found that there was no wage premium associated with graduating from an AACSB-accredited business program.

There are ongoing debates about whether AACSB accreditation hinders the adaptability of business in response to the impacts of globalization and technology (Julian & Ofori-Dankwa, 2006; Pfeffer & Fong, 2002; Trank & Rynes, 2003) or whether it should be viewed as a significant value contributor in promoting relevant advances in

business education (Romero, 2008). For example, Black and Smith (2004) called into question literature claiming a link between having attended a “better” college, regardless of what criteria were used to determine the level of “betterness,” and higher wages upon graduation on the grounds that students were not randomly selected. That is, studies making these claims did not account for the self-selection of better motivated and able students into the better colleges under review (Black & Smith, 2004).

Finally, as mentioned in Chapter I, Datar et al. (2010) sought to identify whether Master of Business Administration (MBA) programs were providing students with the necessary skills required by today’s workplace. To this end, they conducted in-depth interviews with 30 European and American business school deans and a similar number of current and former executives, analyzed detailed business education industry data, and created composite curricula portraits of 11 leading MBA programs. The research yielded a list of eight unmet student needs across MBA programs, including the need to help students develop effective communication and critical thinking skills. Datar et al. acknowledged the link between communication skills and critical thinking in that the former is the vehicle through which the latter may be assessed. They found that business recruiters seek graduates with the ability to think logically about problems and articulate their solutions in unique and creative ways, but they felt that management education was not effectively fostering these skills in business graduates (Datar et al., 2010).

Within the confusion regarding the most effective evolutionary trajectory for management education in meeting the demands of a globalized economy rests the issue at the heart of this study: the definition, teaching, and assessment of workplace skills,



specifically critical thinking skills. What makes this debate particularly ineffective is the lack of consensus, both in education and the workplace, on what constitutes *recognizable* critical thinking. Without a clear, operationalized definition of what critical thinking is, it is impossible to derive well-defined learning outcomes around which to design relevant instructional approaches. It is equally impossible to design effective assessment instruments to measure the efficacy of instruction.

### **Why Is It So Hard to Define Critical Thinking?**

To gain some insights into why critical thinking is difficult to define satisfactorily, it helps to look at the academic disciplines from which what Schoenberg (2007) estimated to be a possible 100 definitions, none specific to business, are derived: philosophy, psychology, and education (Bloom et al., 1956; Kennedy et al., 1991; Lewis & Smith, 1993; Sternberg, 1986).

Many ancient cultures have illustrious traditions of critical thinking. Matilal (1990) demonstrated the sophistication with which ancient Indian scholars and philosophers debated topics such as the theory of inferences, the nature of perception, or causality, among others. Similarly, China developed two distinct groups of logical thinkers, the Mohists and the Logicians, who went far in developing the thinking that lies behind modern science and showed a keen grasp of the concepts of deduction and induction (Ronan, 1978). However, the focus of this study was critical thinking within the Western educational tradition—specifically, within a branch of management

education. As such, the historical overview below focuses entirely on how critical thinking, as it is presently known, is derived in Western education and the workplace.

### **The Philosophical Perspective**

As an introduction to the philosophical perspective on critical thinking, one may consider Paul and Elder's (2006) definition below:

[A critical thinker is someone who] raises vital questions and problems, formulating them clearly and precisely; gathers and assesses relevant information, using abstract ideas to interpret it effectively; comes to well-reasoned conclusions and solutions, testing them against relevant criteria and standards; thinks openmindedly within alternative systems of thought, recognizing and assessing, as need be, their assumptions, implications, and practical consequences; and communicates effectively with others in figuring out solutions to complex problems. Critical thinking is, in short, self-directed, self-disciplined, self-monitored, and self-corrective thinking. It requires rigorous standards of excellence and mindful command of their use. It entails effective communication and problem solving abilities and a commitment to overcome our native egocentrism and sociocentrism. (p. 4)

To understand how someone might arrive at this definition, it is helpful to understand philosophy, which has been variously defined over the ages. However, for the purpose of understanding its relationship to critical thinking, Bertrand Russell's (1972) definition seems most apt. He defined it as a means of conceptualizing life and the world via a religious and ethical conception and a more scientific observation of the physical world. Thus, Russell saw philosophy as a mediator between theology and science or "speculations on matters as to which definite knowledge has, so far, been unascertainable; but like science, . . . appeals to human reason rather than to authority, whether that of tradition or that of revelation" (p. xiii). The knowledge existent in each he labeled as *dogma* for religion and *definite knowledge* for science. According to

Russell, there lay a “No Man’s Land” (p. xiii) between dogma and definite knowledge, which he deemed the domain of philosophy—a questioning of both dogma and definite knowledge by means of speculation, reasoning, or what is now referred to as critical thinking.

Socrates is widely acknowledged as the originator of one aspect underlying what is now commonly referred to as critical thinking in Western education. Some 2,500 years ago, he utilized “a method of probing question[s]” to elicit doubt about what those in authority claimed as “knowledge” (Paul, Elder, & Bartell, 1997, para. 1). In essence, he established the need for skepticism in the face of existing belief systems by means of seeking evidence for those beliefs and closely examining their underlying assumptions and the reasoning process behind them (Paul et al., 1997).

Socrates saw philosophy as a training regimen for the mind in order to investigate the relationship between the physical world and people’s perceptions of it (Richter, 1989). To provide a better understanding of this view, Richter (1989) categorized concepts such as ideas, mathematical forms, or images as modes of being (existence) and distinguished them from modes of mental activity (becoming via thought patterns) such as knowing, understanding, or conjecture. The understanding of Socrates and his method of questioning comes through the writings of Plato on the subject, which he termed “dialectic” (O’Connor, 2003, para. 1). Dialectic may be defined as “a mode of thought, or a philosophic medium, through which contradiction becomes a starting point . . . for contemplation” (O’Connor, 2003, para. 1). As such, dialectic was a strategy of using thought and language to comprehend the world. Plato applied the words *knowing* to

ideas, *opining* to the physical world, and *guessing* to images (Tarnas, 1991).

Nevertheless, for all his dedication to preserving intellectual rigor in dialectic reasoning, Plato's philosophy hinted at a romanticism that can only be described as religious in tone whereby the questioner or philosopher was depicted as someone seeking the Holy Grail of knowledge as an end in itself and one that had universal significance for all humankind (Tarnas, 1991).

A second important aspect related to reasoning or critical thinking was Aristotle's intellectual divergence from his teacher, Plato. While Plato valued dialectic as the ultimate means of getting to the truth, Aristotle relegated it to "an inferior form of reasoning" due to its dependence on "a priori knowledge," or knowledge not derived from empirical observation (O'Connor, 2003, para. 2). Aristotle provided Western thinking with

a language and logic, a foundation and structure, and, not least, a formidably authoritative opponent—first against Platonism and later against the early modern mind—without which the philosophy, theology, and the science of the West could not have developed as they did. (Tarnas, 1991, p. 55)

Therefore, while Plato saw intellectual endeavor as a means of unearthing knowledge of the divine "implicit in very soul, but forgotten" (Tarnas, 1991, p. 41), Aristotle only valued empirical evidence derived from the natural world and the analysis of formal logic (Bizzell & Herzberg, 1990; Clark, 1994).

In fact, Aristotle's greatest influence in relation to critical thinking was his systematic study of logic in the form of syllogistic reasoning (Clark, 1994). In essence, a syllogism is a three-pronged argument consisting of two premises, major and minor, and

a conclusion (Russell, 1972). In a way, this might be considered the beginning of formal logic in Western thought in that it allowed for both inductive and deductive reasoning. Aristotle saw dialectic as a means of arriving at probable knowledge, while scientific inquiry arrived at Russell's (1972) definite knowledge.

Aristotle recorded his ideas regarding logic and argumentation in a book entitled simply *Rhetoric* (Crowley & Hawhee, 1999). Aristotle felt that existing handbooks were unacceptable as a coherent set of rules by which one could learn to become an effective orator. He therefore set out to create the first comprehensive theory of argumentative strategies and their application in well-designed speeches. In this, he took the unstructured approach of dialectic and gave it a comprehensive methodology by which people could learn to become accomplished at arguing a case or defending themselves against the arguments of others. The book provided an overview of the different kinds of evidence or proofs that would make any argument more persuasive. It also systematically analyzed elements of language and style to be used in different types of speeches (Crowley & Hawhee, 1999).

Aristotle was not the only great rhetorical theorist of his time. In fact, his theory was eclipsed by Isocrates even during his lifetime (Crowley & Hawhee, 1999). However, he was also not the greatest practitioner of rhetoric, the credit for which goes to Demosthenes. Nevertheless, after the deaths of theorists and practitioners alike, Hellenistic scholars of the day codified existing theory and practice into a coherent system so that it could be systematically taught to future generations in college composition classes (Crowley & Hawhee, 1999).

The philosophical approach to critical thinking, therefore, is exemplified in the ideas of Socrates, Plato, Aristotle, and, more recently, the likes of Richard Paul. Their approach revolved around an ideal critical thinker and the qualities and characteristics such a thinker should embody (Lewis & Smith, 1993; Sternberg, 1986). The philosophical approach judges the quality of thought via specific criteria (e.g., inquisitiveness, open-mindedness, flexibility, willingness to weigh opposing perspectives), including the formal application of rules of logic.

### **The Cognitive Psychological Perspective**

Gardner (1987) traced the term *cognitive science* back to the mid-1970s. Like the ancient Greeks, cognitive scientists questioned the meaning of knowledge, how a person comes to knowing, and why people want to know. They also speculated about “the various vehicles of knowledge: what is a form, an image, a concept, a word; and how do these ‘modes of representation’ relate to one another?” (Gardner, 1987, p. 5). Finally, they reflected on the role of language in shaping and influencing thoughts and beliefs. In all this, they differed very little from their forerunners in ancient Greece. The primary difference between modern cognitive scientists and their philosophical forebears was the move from simply thinking about thinking to the use of scientific tools for the purpose of empirical observation and testing of hypotheses and theories regarding how humans think (Gardner, 1987).

The cognitive psychological perspective takes a more applied approach to defining critical thinking, moving away from what the ideal thinker is and should do.

Instead, it focuses on how thinkers actually think and their actions and behaviors as they relate to thinking. As such, this perspective provides insights that may be carried over as a list of steps and procedures performed by critical thinkers (Lewis & Smith, 1993; Sternberg, 1986). However, cognitive science eschews a tight focus on critical thinking in favor of seeking an understanding of the very nature of human intelligence. That is, cognitive scientists have developed insights about human thinking and learning and have studied aspects of the critical thinking process without providing a definition of critical thinking itself (van Gelder, 2005).

Cognitive science studies both the nature of intelligence and the design and construction of intelligent systems within the context of “intelligent behavior as computation” (Simon & Kaplan, 1998, p. 1). As a field, it is derived from experimental and cognitive psychology, artificial intelligence within computer science, linguistics, neuroscience, anthropology, economics, social psychology, and, not surprisingly, the branch of philosophy dealing with logic and epistemology. As such, cognitive science recognizes that

intelligence is closely related with adaptivity—with problem solving, learning and evolution. A science of intelligent systems has to be a science of adaptive systems with all this entails for the difficulty of finding genuine invariants. Some of the invariance in intelligence is imposed by the structure of the inner environment. . . . Some . . . [is] imposed by the outer environment. . . . Some . . . [is] found in the structure of learning systems rather than in the highly adapted performance systems they produce. But . . . invariants in an adaptive system are likely to be limited to specific times and places and . . . in the long run almost any aspect of them can change adaptively. (Simon & Kaplan, 1998, p. 43)

Due to this inherent complexity, cognitive scientists have concluded that the process of acquiring knowledge requires the building of relevant cognitive structures (Simon &

Kaplan, 1998) while performing the necessary computations to turn the known into the as yet unknown (Pylyshyn, 1998). However, “despite the presence of preliminary theories of scientific induction, no one knows how to teach this over any substantial domain” (Posner, 1998, p. x; see also Johnson-Laird, 1998; E. E. Smith, 1998).

The significance of the cognitive sciences to better understanding critical thinking may therefore be summed up as follows: “Acquiring critical thinking is hard; practice in critical-thinking skills themselves enhances critical thinking; the transfer for skills must be practiced; some theoretical knowledge is required; diagramming arguments (‘argument mapping’) promotes skill; and students are prone to belief preservation” (van Gelder, 2005, p. 41).

### **The Educational Perspective**

Bloom et al. (1956) developed a taxonomy of educational objectives, in a work by the same name, to help teachers define desired learning outcomes in their classes. They defined critical thinking in relation to a series of abilities students should develop beginning with the most basic type of thinking (i.e., knowledge) and building toward the most complex (i.e., evaluating). The development of this taxonomy was inspired by a recognition that education placed too much emphasis on what it describes as the lowest level of learning, knowledge, which no longer met the cognitive requirements for dealing with the vast amount of information that was being generated every year (Bloom, 1994).

The taxonomy of learning objectives came into being at an informal meeting of college-level examiners at the American Psychological Association’s 1948 convention in



Boston (Bloom, 1994). The examiners believed that a framework such as the taxonomy would allow for a useful exchange of ideas for effective testing and would stimulate research on testing—with the emphasis on the relationship between testing and education. As such, the original framework was divided into three parts: cognitive, affective, and psychomotor domains (Bloom, 1994). However, while learning objectives in the physical and biological sciences were easily observed or manipulated, this was not the case for learning objectives in the cognitive domain. Thus, the examiners decided to state these objectives in behavioral form as counterparts to student behavior (Bloom, 1994).

To avoid fragmentation of educational processes, the established categories were generalized so that they could be adapted across educational disciplines (Bloom, 1994). In this way, it was hoped to avoid rote learning so that students might be taught to apply acquired knowledge in a variety of problem-solving scenarios, both familiar and unfamiliar (Bloom, 1994). Application of acquired knowledge in solving problems relates to the skills of synthesizing, analyzing, and evaluating, or what Kennedy et al. (1991) considered to represent critical thinking skills.

The taxonomy created an overall shift in education from a focus on what teachers actually did to a focus on what students learned from what teachers did (Bloom, 1994). For example, unlike in the philosophical perspective, which touted the application of formal rules of logic (Lewis & Smith, 1993; Sternberg, 1986), the taxonomy allowed teachers wide latitude in eliciting desired learning outcomes in students. This in turn created a need to define desired learning outcomes for students (Bloom, 1994). As such, the educational perspective on critical thinking had the advantage of being based on

actual observations of student behavior and assessment of learning outcomes, unlike the philosophical perspective, which was limited to a description of what an idealized critical thinker might be like (Lai, 2011).

This has not, however, created agreement within the educational community as to how critical thinking is to be taught or assessed or, for that matter, defined. For example, Davies's (2006) examination of the debate between proponents of critical thinking as subject-specific discourse (specificists) and proponents of critical thinking as independent of any disciplinary context (generalists) argued that the debate itself was based on a false dichotomy, causing the author in turn to propose a "combinatory-'infusion' approach to critical thinking" (p. 179). Similarly, Halx and Reybold (2005) found that while higher education acknowledges the importance of critical thinking, it fails to provide any one definition of what critical thinking is. Finally, with regard to teaching critical thinking, researchers have argued about the role of higher education in developing the critical thinker (P. M. King & Kitchener, 1994; Mentkowski et al., 2000), how socioeconomic status determines access to developing critical thinking skills (Pithers & Soden, 2000; Tsui, 2003), and how educational research about teaching and understanding critical thinking is limited by a mostly quantitative approach to research design (Reybold, 2003; Tsui, 2002).

### **Limitations of the Three Perspectives**

The limitations of each perspective are listed in Table 2.

Table 2

*Comparison of Limitations Across the Three Perspectives*

Philosophical	Cognitive, psychological	Educational
Lacks pragmatism due to its focus on what people might have the capacity to do rather than on how they think	Approach too reductionist for defining something that cannot be observed—the steps taken by a critical thinker—because it is possible to proceed through the steps of critical thinking without engaging in critical thought	Lacks clear definitions for each concept in the taxonomy  Lacks rigorous testing of concepts if these are to be effectively used in instruction and assessment
Source(s): Sternberg (1986)	Source(s): Bailin (2002)	Source(s): Ennis (1989) and Sternberg (1986)

**So What Then Is Critical Thinking?**

As is evident in the literature, scholars and practitioners cannot reach consensus on a single, unified definition of the concept of critical thinking. What does, however, emerge from the literature is that there are “several aspects of the term common to many sources and there are some characteristics unique to various disciplines” (Petress, 2004, p. 465). In fact, Paul (1992) argued that no one definition of critical thinking should be given precedence over another, as definitions, at best, serve as a foundation on which to develop a deeper understanding of what critical thinking implies. Therefore, Paul and Elder (2006) defined the term more broadly: “Critical thinking is the art of analyzing and evaluating thinking with a view to improving it” (p. 4). To provide a scaffold on which to construct a more orderly understanding of what constitutes critical thinking, Lai (2011) synthesized variations in how scholars conceptualized critical thinking (see Table 3).

Table 3

*Comparative Overview of How Scholars Conceptualize Critical Thinking*

Scholarly	Agreement	Scholarly	Disagreement
Abilities	Analyzing, evaluating, synthesizing, decision making, problem solving, clarifying, inferring, identifying assumptions, interpreting, reasoning, explaining, seeing both sides of an issue	Ability to transfer skills	Whether critical thinking skills can be transferred across domain-specific background knowledge contexts
Dispositions	Open- and fair-mindedness, flexibility, inquisitiveness, desire to be well informed, propensity to seek reason, willingness to see other points of view	Role of dispositions	The level of importance given to dispositions
Knowledge	The importance of domain-specific background knowledge to think critically about	Domain specificity	Whether critical thinking can be taught and assessed across domain-specific background knowledge contexts OR whether it must be taught and assessed within a domain-specific background knowledge context
		Role of criteria	Whether domain-specific criteria are necessary tools with which to evaluate arguments, positions, or one's own thinking

*Note.* Data from Lai (2011).

While scholars have found some areas of agreement as to what critical thinking might involve, what is missing in this multitude of definitions, each derived from a different discipline, was indicated by R. L. Williams (1999) as follows:

The . . . literature is replete with references to higher-order cognitive constructs, such as critical thinking and creativity. . . . For these constructs to be maximally useful, they must be transformed into specific operational definitions that lead to reliable and valid assessment strategies. . . . The ideal would be for each construct to have a definition that is distinct from the definitions of other cognitive constructs. Although higher-order cognitive constructs have much surface appeal, their utility is tied to the clarity and fidelity of their definitions and assessment procedures. (p. 411)

Aviles (2000) concurred by stating that “critical thinking has no operational definition” (p. 2). This lack of an operational definition in any discipline underscores the need for exploring how individuals tasked with teaching or assessing these skills understand them in their relevant contexts and domains.

### **How Is Critical Thinking Viewed in Accounting?**

According to the American Institute of Certified Public Accountants (AICPA, n.d.-b),

The Uniform CPA Examination protects the public interest by helping to ensure that only qualified individuals become licensed as U.S. Certified Public Accountants (CPAs). Individuals seeking to qualify as CPAs—the only licensed qualification in accounting—are required to pass the CPA Examination. (para. 1)

As such, the CPA exam is designed to test the skills required for anyone wishing to attain a state license to practice accounting. These required skills are divided into three areas: functional, personal, and broad business perspective competencies. To understand the nature of these skills, it is helpful to refer to the AICPA Core Competency Framework. According to the AICPA (n.d.-a), “The AICPA Core Competency Framework . . . defines a set of skills-based competencies needed by all students entering the accounting profession, regardless of the career path they choose (public/industry/government/

nonprofit) or the specific accounting services they will perform” (para. 1). All three competency areas test the candidates’ research, communication, analytical, problem-solving, and risk-assessment skills (AICPA, n.d.-a). To teach these skills, the AICPA website provides educators with a list of pedagogical techniques including leading discussion to elicit the evaluation of their thought process by the students, problem-based learning, writing responses to unstructured problems in class, and debates.

According to the AICPA’s (2011) *CPA Horizons 2025 Report*, the profession’s core purpose is “making sense of a changing and complex world” (p. 5). The report listed the core competencies required by the profession, including communication skills, critical thinking skills, problem-solving skills, anticipating evolving needs, and the ability to synthesize intelligence into insights. Finally, the report indicated the profession’s need to stay current on global business trends and regulations, adapt to changes in technology, and hone interpersonal and intercultural skills (AICPA, 2011).

Based on what has been emerging in professional accounting publications, Young and Warren (2011) argued for the inclusion of critical thinking in introductory accounting courses. However, researchers indicated the challenges encountered by educators wishing to include critical thinking in their courses, including the variety of definitions and the lack of consensus on what instructional strategies to utilize (Baril, Cunningham, Fordham, Gardner, & Wolcott, 1998; Young & Warren, 2011). Similarly, D. Z. Williams (1995) and Deppe, Sonderegger, Stice, Clark, and Streuling (1991) argued that changing accounting education required acknowledging the need to change, identifying the

specifics of the changes to be made, and determining the specifics of the various competencies the profession was asking for.

Braun (2004) demonstrated that accounting educators are being urged to alter curriculum with the intended outcome of producing accounting graduates with skill sets beyond the technical accounting skills usually associated with the discipline. Kavanagh and Drennan (2008) further highlighted gaps in the literature between what the accounting profession knows is required by its professional bodies (e.g., CPA) and what attributes employers and practitioners wish to see in entry-level employees versus how prepared accounting graduates actually feel about entering this profession. Additionally, there was next to no literature on specific, measurable skill sets employers of accounting graduates require.

Paisey and Paisey (2010) pointed out that the Scottish Accounting Education Change Commission (AECC) had listed 55 capabilities, encompassing skills and knowledge, required of accounting graduates as far back as 1990. The AECC saw a deficit in verbal and written communication skills, computing/IT skills, critical thinking, and problem-solving skills and in the ability to extract and analyze information from a variety of sources. The authors, therefore, studied the efficacy of a yearlong work placement program for four consecutive groups of students within a Scottish accounting program. While both students and supervisors concurred that skill levels had increased, students ranked themselves more highly on critical thinking skills, ability to interpret financial information, and ability to generate practical ideas. What was not studied was

the confluence between increased skill levels and meeting supervisors' expectations, as these were found to vary widely from supervisor to supervisor (Paisey & Paisey, 2010).

Similarly, in a meta-analysis of 117 descriptive and 89 empirical articles published in the four major accounting education journals between 2000 and 2002, Watson et al. (2003) synthesized the "contributions of new ideas and reinvestigations in the traditional areas of assessment, curriculum and instruction, educational technology, faculty issues, and students" (p. 311). The authors concluded that the present research did not yield empirical evidence indicating how accounting education could be improved. In addition, the literature failed to indicate how technology might be effectively integrated with accounting education to enhance learning outcomes. Also found missing from the literature was research into which assessment would yield valid feedback to be utilized in improving the curriculum. Other gaps in the literature included definitive answers to what constitutes best practices in the accounting classroom and how to inspire critical thought regarding ethics in the accounting curriculum. The article ended with a call for well-designed research to provide faculty with the means to prepare accounting students for the working world (Watson et al., 2003).

However, Behar-Horenstein and Niu (2011), in their empirical review of 42 studies published between 1994 and 2009 on the teaching of critical thinking, found that most of the studies suffered from limitations in their research designs, such as small sample sizes and poor representativeness. The authors concluded that future studies should include quantitative and qualitative evaluations when assessing any changes in students' critical thinking skills after instructional interventions and should address



internal validity threats by adopting quasi-experimental designs to establish causality between an intervention and any changes in critical thinking skills. The authors also cautioned instructors against using statistical significance as a sole criterion when choosing new instructional methods (Behar-Horenstein & Niu, 2011).

Clearly, the accounting profession has been impacted by globalization and is therefore requiring a higher level of skill, such as higher order or critical thinking skills, from its practitioners beyond being well versed in accounting theory. Similarly, accounting education is mired in a very similar debate to the one taking place in management education overall regarding the most effective response to meeting employer needs in relation to teaching and assessing relevant workplace skills. This once again underscores the need to explore differences in how education and industry stakeholders define critical thinking in action, so as to provide insights into the design of educational interventions with desirable outcomes. As a first step, therefore, it is necessary to understand the limitations inherent in teaching, assessing, and transferring critical thinking across domains as is discussed in the section that follows.

### **Can Critical Thinking Be Taught, Assessed, and Transferred Across Domains?**

Helsdingen, van Gog, and van Merriënboer (2011) argued that the aim of any educational effort is fostering acquisition and transfer of knowledge and skills.

Alexander, Schallert, and Reynolds (2009) pointed to Skinner's (1950) and Thorndike's (1910) definition of learning as changes in behavior or knowledge, brought about by the

learning experience, that are both enduring and directly observable. However, researchers have distinguished between apparent and actual learning (Bjork, 1994).

Abrami et al. (2008) performed a meta-analysis on 117 studies amounting to 20,698 participants to determine impacts of instruction on the development of critical thinking skills. This meta-analysis yielded 161 impacts—mostly positive with some negative. Among the positive impacts, findings included the need for teacher training both pre- and in-service. Similarly, Abrami et al. found that when critical thinking was taught within a content course, results were significantly higher than when it was considered a byproduct of instruction. However, questions arose regarding whether instructional interventions had lasting impacts on students' critical thinking and how to study the quality of instructional interventions (Abrami et al., 2008).

Halx and Reybold (2005) argued that while higher education acknowledges critical thinking skills as a laudable educational outcome, little research has been done regarding faculty perceptions about critical thinking. Browne and Freeman (2000) pointed out that faculty defer to critical thinking as a cherished outcome of education without actually offering any practical encouragement to students to practice thinking critically in the classroom since they lack the training to be able to do so (Bailin, Case, Coombs, & Daniels, 1999). As such, Halx and Reybold (2005) argued, students become unwitting participants in a pedagogical experiment. Utilizing semistructured interviews, Halx and Reybold sought faculty input regarding their approach to fostering critical thinking. Results indicated an overall lack of training, reliance on pedagogical experimentation based on personal definitions of critical thinking or their own

undergraduate experiences, divergent perspectives on the relationship of content to critical thinking skills, and concerns regarding cultural differences affecting learning styles or student resistance to challenging their own viewpoints (Halx & Reybold, 2005).

Niu et al. (2013) performed a meta-analysis on empirical studies regarding the impact of instructional effectiveness on enhancing critical thinking skills. Like Abrami et al. (2008), they found some evidence that instruction can have positive impacts on a student's ability to think critically (Niu et al., 2013). However, since the positive effects were small, unanswered questions included how and what would need improving to garner better results and how to tailor instruction to student needs based on gender, age, and preparedness differences (Niu et al., 2013).

### **Can Critical Thinking Be Successfully Transferred?**

Detterman and Sternberg (1993) defined transfer as the ability to apply relevant aspects of what was learned to new tasks or within new situations or contexts.

Nevertheless, Halpern's (1998) article on teaching critical thinking for transfer across domains began with data that would make any reader question whether critical thinking can even be taught, let alone transferred:

Here are some scary facts about the critical-thinking practices of college students and the American public in general: Approximately 78% of women and 70% of men read their horoscopes, with many believing that these horoscopes are so often correct that they were written especially for them (Lister, 1992); they phone their personal psychics, at a cost that many cannot afford, for advice on matters that range from how to invest their money to whether a loved one should be disconnected from life support systems; they spend huge sums of money on a variety of remedies for which there is no evidence that they work or are even safe to take—sometimes with disastrous results. In a survey of college students, more

than 99% expressed their belief in at least one of the following: channeling, clairvoyance, precognition, telepathy, psychic surgery, psychic healing, healing crystals, psychokinesis, astral travel, levitation, the Bermuda triangle mystery, UFOs, plant consciousness, auras, or ghosts, and more than 65% reported that they personally experienced at least one of these phenomena (Messer & Griggs, 1989). (p. 449)

While Halpern provided a pedagogical model she claimed was designed around ensuring the transfer of classroom skills to real-life contexts, there is considerable debate in the literature regarding how well skills learned in one context, such as the classroom, will transfer to another context, such as the workplace.

Dierdorff, Surface, and Brown (2010) studied skills transfer effectiveness within the context of the frame-of-reference training model designed to calibrate performance raters of personnel in the human resources field. The authors found that learner motivation was a mitigating variable in how well a trainee acquired and later transferred skills (Dierdorff et al., 2010). Knowles, Holton, and Swanson (2012) affirmed the significance of learner motivation to successful learning and transfer with the assumptions underlying their androgogical model of adult learning. There are six assumptions that make up the model, including learner motivation itself. However, Dierdorff et al. (2010) found that needs assessment pretraining rarely looked into differences in learner motivation so that training could be designed with individual learners in mind.

Another concern is instructional design. Lim, Reiser, and Olina (2009) came to a tentative conclusion that a whole-task approach yields better cognitive skills acquisition and transfer results than do part-task approaches. However, the authors cautioned the

need for refining future research to identify relevant versus irrelevant components of the whole-task approach and how learner strategies are affected by the whole-task approach (Lim et al., 2009). Similarly, van Merriënboer, Schuurman, de Croock, and Paas (2002) tested cognitive load theory guidelines with regard to their efficacy in cognitive skills transfer. Their findings indicated that more targeted research is needed to determine how each guideline plays out in specific instructional and training contexts (van Merriënboer et al., 2002).

In general, transfer literature indicated a paucity of research with regard to how and why adults learn, which variables exert the most influence on successful learning, and how and when skills effectively transfer across domains. One outcome of this lack of definitive results is that employers have long been frustrated with a widespread lack of skills. This in turn has resulted in a multi-billion-dollar corporate training industry. As far back as 1993, Foxon estimated that as many as 41 million employees received training in just 1 year, 1992-1993, at an estimated cost of \$45-\$53 billion. These figures represented a 4% increase over previous years, underlying a growing trend. This pattern was not limited to the United States alone, as countries like Australia and Singapore faced government legislation requiring those with payrolls in excess of \$200,000 to spend 1% of that figure on corporate training (Foxon, 1993). Since then, the corporate world has begun taking on the educational responsibilities of business schools that are perceived to be failing to prepare graduates for the workplace.

Of particular concern to industry stakeholders is an apparent lack of a return on the investment they are making in training their workers. Baldwin and Ford (1988) and

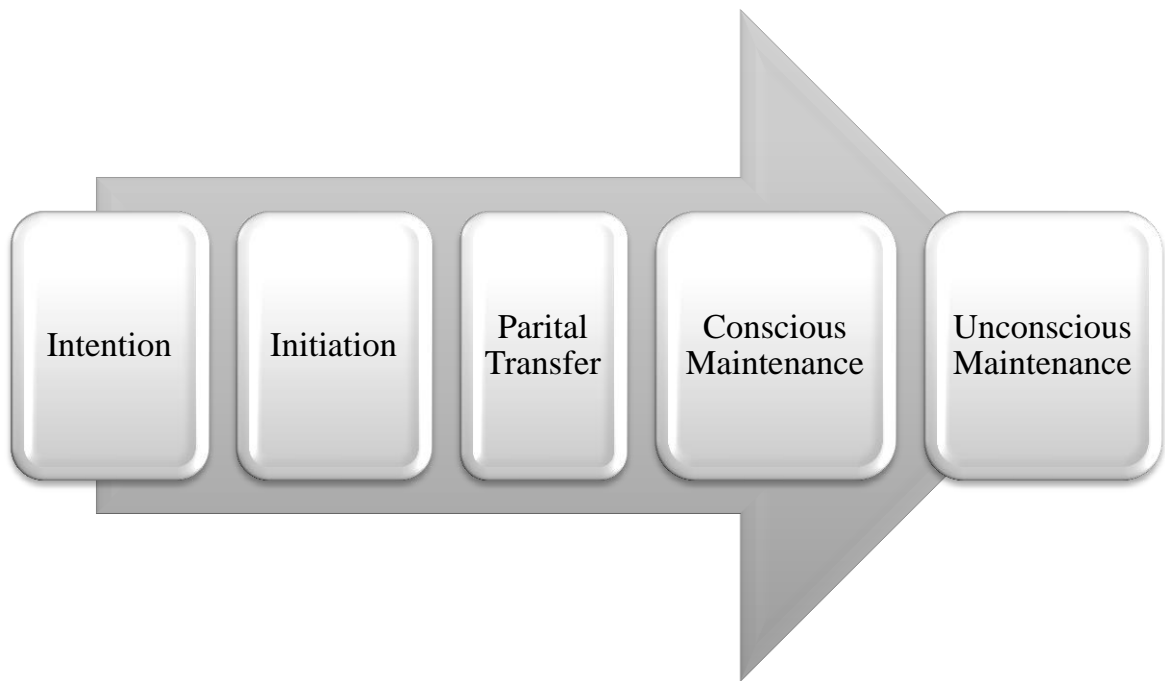
Gist et al. (1990a, 1990b) pointed to the lack of evidence that training programs resulted in desired workplace application of the *soft skills* found lacking in business graduates by the AACSB International Globalization of Management Education Task Force (2011) report and by Datar et al. (2010). Whereas Gradous (1991) indicated that training programs have an acceptable track record with transferring motor skills, both business and corporate education report failure in transferring more cognitively demanding skills such as critical thinking, communication, and leadership.

More recent studies seem to indicate that transfer does take place. Blume, Ford, Baldwin, and Huang (2010) undertook a meta-analysis of transfer literature comprising some 89 empirical studies in order to determine whether predictive factors could be found. A positive relationship was found between predictors such as cognitive abilities, motivation, conscientiousness on the part of the learner, and a supportive work environment on the part of the target domain. However, issues arising from the study included not studying multiple measures of transfer or studying measures of transfer over time to determine whether transfer was successfully maintained. Additionally, studies did not always provide enough information regarding context of training or basic descriptive statistics such as reliabilities of measures (Blume et al., 2010).

**The magic of transfer.** Swinney (1989) defined *transfer* as “that almost magical link between classroom performance and something which is supposed to happen in the real world” (p. 33). However, he cautioned against assuming that training design alone will ensure transfer because a key to successful transfer is management support in conjunction with management participation as support usually translates into little more

than a verbal nod from upper level management. In fact, without active buy-in from everyone in the hierarchy of any particular human performance, desired performance will not take place as no performer “works in a vacuum” (Swinney, 1989, p. 33).

Furthermore, Foxon (1993) argued that attempting to view and assess successful transfer as a training/learning outcome presented many problems. As a result, she created a model to depict the transfer process (see Figure 1). The model included five steps of transfer, beginning with an intention to transfer a skill/ability and ending with the unconscious maintenance of the skill/ability (Foxon, 1993).



*Figure 1.* Foxon’s transfer process. Adapted from “A Process Approach to the Transfer of Training—Part 1: The Impact of Motivation and Supervisor Support on Transfer Maintenance,” by M. Foxon, 1993, *Australian Journal of Educational Technology*, 9(2), p. 133.

Of note in Foxon's (1993) model is that each stage is a prerequisite for the next, and at each stage the learner might revert to pretraining performance for a variety of reasons including a lack of transfer intention on the part of the learner, a lack of transfer initiation on the part of the organization, partial transfer due to personal (e.g., lack of confidence) or organizational (e.g., lack of opportunities to utilize skills regularly) reasons, transfer maintenance (where learner moves from conscious use of new skill to unconscious integration of new skill into everyday performance), and transfer failure. In other words, as Swinney (1989) pointed out, a good training course design does not ensure transfer in and of itself.

**Why transfer fails.** Foxon (1993) listed multiple researchers who looked at why transfer failed or overall rates of transfer failure. For example, Marx (1986) estimated transfer failure at 90%. Similarly, Baumgartel, Reynolds, and Pathan (1984) surveyed American, Indian, and British managers about their rate of application of skills learned in training courses and found that only about 50% of those surveyed had made any attempt to transfer those skills. In fact, Foxon's (1993) content analysis of 30 articles about transfer failure identified 128 inhibiting factors she then grouped into four categories including organizational climate unfavorable to transfer, training designs that were too theoretical or in conflict with organizational values, incompatible training delivery methods, and unmotivated learners or learners who could not master skills.

One specific aspect of an unfavorable organizational climate, alluded to by Swinney (1989), was the learner's perception of supervisory support for skill transfer. Mosel (1957) preceded Swinney (1989) in arguing that transfer could only occur if



supervisors practiced the same behaviors and skills as those that trainees were taught in the program. In fact, Foxon's (1993) review of the literature indicated that while organizational climate is viewed through the actions and behaviors of a variety of organizational stakeholders, supervisors are by far the most influential on the success or failure of skill transfer.

### **Can Critical Thinking Be Meaningfully Assessed?**

Bloom et al. (1956) stated that educational objectives indicate what teachers want their students to learn and are “explicit formulations of the ways in which students are expected to be changed by the educative process” (p. 26). Anderson and Krathwohl (2001) argued that teaching is an “*intentional and reasoned act*” (p. 3) in that intention defines a teacher's approach to helping students reach their objectives—the reasoned aspect of teaching. However, objectives range from the explicit to the implicit to the clearly or vaguely conceived and to the degree of ease with which they might be measured (Anderson & Krathwohl, 2001). This is why Bloom's taxonomy is so widely used as a framework for understanding and assessing educational objectives with regard to the development of critical thinking skills.

While still widely in use worldwide, the taxonomy was revised from its original 1956 format, in keeping with new theories regarding how learning takes place (*Designing Effective Projects*, n.d.). The changes included a revised terminology and some revisions in structure and emphasis (Forehand, 2005; Krathwohl & Anderson, 2001). However, while the revisions were acknowledged to have brought the taxonomy more in line with

today's educational needs, critics pointed to problems with structuring (e.g., knowledge at the same level as skills and attributes) and the need to constantly refine the definitions of the terminology used in the taxonomy (Tutkun, Guzel, Koroğlu, & Ilhan, 2012).

Forehand (2005) provided a comparison of the old and new versions of the taxonomy, shown in Table 4.

Table 4

*Comparison of Old and New Versions of Bloom's Taxonomy*

Old version (noun forms)	New version (verb forms)
Evaluation	Creating
Synthesis	Evaluating
Analysis	Analyzing
Application	Applying
Comprehension	Understanding
Knowledge	Remembering

*Note.* Adapted from "Bloom's Taxonomy: Original and Revised," by M. Forehand, 2005, in M. Orey (Ed.), *Emerging Perspectives on Learning, Teaching, and Technology*, retrieved from <http://epltt.coe.uga.edu/>

According to Banning (2006), two other widely used instruments in evaluating critical thinking are the Watson–Glaser Critical Thinking Appraisal (WGCTA) and the California Critical Thinking Disposition Inventory (CCTDI). However, while both instruments are acknowledged as valid, they were developed to measure general critical thinking skills. As a result, Shao-Ping, Hung-Chang, Ya-Huei, and Ming-Jen (2014) felt the need to develop a more targeted measure for evaluating the critical thinking skills of both medical care professionals and students: the Critical Thinking Disposition

Assessment (CTDA) scale. Similarly, Tanner (2011) pointed to the lack of standardized assessment instruments relevant to desired learning outcomes in nursing students.

Therefore, Tanner called for the development of an operational definition of critical thinking in the workplace around which a relevant assessment instrument could be developed.

In fact, Paul and Nosich (1993) indicated that the commercially available instruments listed below all have their limitations, and the authors therefore called for the development of a national-level critical thinking assessment instrument usable by all institutions:

1. Cornell Class Reasoning Test, Form X (1964)
2. Cornell Conditional Reasoning Test, Form X (1964)
3. Cornell Critical Thinking Test, Level X (1985)
4. Cornell Critical Thinking Test, Level Z (1985)
5. The Ennis–Weir Critical Thinking Essay Test (1985)
6. Judgment: Deductive Logic and Assumption Recognition (1971)
7. Logical Reasoning (1955)
8. New Jersey Test of Reasoning Skills (1983)
9. Ross Test of Higher Cognitive Processes (1976)
10. Test on Appraising Observations (1983)
11. Test of Enquiry Skills (1979)
12. Watson–Glaser Critical Thinking Appraisal (1980) (“Section Four,” para. 3)

As mentioned earlier, Datar et al. (2010) acknowledged communication skills, particularly written communication skills, as a means by which critical thinking should be assessed. Beam (2011) argued that writing is both the process of critical thinking and the end product of critical thought. However, the efficacy of writing as a critical thinking assessment instrument depends on individual instructors’ readiness to incorporate relevant writing assignments in their classes. As a case in point, Forsythe, Jones, and

Kemp (2013) found that business schools with multiple introductory business law classes tended to rely on practicing attorneys as part-time instructors. These practicing attorneys had neither time nor incentive to teach themselves how to effectively design class assignments to elicit critical thinking in their students (Forsythe et al., 2013). Given how heavily universities rely on adjuncts (e.g., 60% of the 32,000 faculty employed in Massachusetts in 2006 and 57% of Harvard faculty in 2005), it is not surprising that writing may not be as effective an assessment instrument as it should be (Parker, 2011).

In addition, business programs display ambivalence with regard to the role writing plays in a student's overall performance. For example, Hill, Hynes, Joyce, and Green (2011) were surprised to discover how little emphasis MBA programs placed on writing competency when admitting students, even though the researchers were able to demonstrate a correlation between a student's score on the Analytical Writing Assessment (AWA) section of the Graduate Management Admission Test (GMAT) and performance on a similarly designed writing assignment in a managerial communications class as well as the final grade in the class.

Similarly, Beam (2011) found that students failed to improve either their critical thinking skills or their writing skills when writing was taught in a content vacuum, noting, "It may well be, in fact, that competence in editing and correctness is a late-developing skill that blossoms only after students begin taking pride in their writing and seeing themselves as having ideas important enough to communicate" (p. 68). And yet business communications courses, like their liberal arts composition equivalents, are

taught as skills classes distinct from the content classes in which students are expected to display said skills.

When seeking research about assessing critical thinking, one will come across studies critiquing existing instruments as seen above, studies claiming to prove the validity of existing instruments in specific contexts (Butler, 2012), and case studies purporting to have approached the assessment of critical thinking in unique ways (Carrithers & Bean, 2008; Cavalire & Mayer, 2012). Other studies have called for further research. For example, Sormunen and Chalupa (1994), having reviewed commercially available tests, called for research about how critical thinking should be developed and assessed in business courses. The researchers indicated that this required first defining the skill before developing appropriate assessment instruments (Sormunen & Chalupa, 1994).

Common to the abovementioned assessment studies is a recognition that critical thinking skills are not easily generalizable across domains and that, therefore, a one-size-fits-all approach to assessment does not yield results. Additionally, the instrument must fit the desired outcome, which must first be clearly defined within the desired domain. Therefore, this study's intention to explore how business education stakeholders operationalize definitions of critical thinking within the accounting domain was in keeping with the above-identified gap in the assessment literature.

### **A Note on Outcomes Assessment**

Kimmell, Marquette, and Olsen (1998) traced the development of outcomes assessment in business and accounting education. Pre-World War II (WWII), college populations were small. However, post-WWII, the GI Bill brought a flood of returning GIs into American colleges so that assessing the quality of individual programs became a necessity. The 1980s brought the first set of complaints from employers about underprepared college graduates including accounting majors, resulting in a call for a focus on educational outputs versus inputs to determine the quality of programs and schools. By the mid-1980s, the “Big 8” accounting firms (included companies like Arthur Andersen, Deloitte Haskins, and Sells and Touche Ross, but are now referred to as the “Big 4” due to mergers [Big 4, 2017, para. 1]) were demanding a broader focus for accounting students, including communication and critical thinking skills (Kimmell et al., 1998).

The AACSB responded with a three-pronged approach to assessment: institutional reputation, available resources or inputs, and educational outcomes such as skills and knowledge (Kimmell et al., 1998). Nevertheless, up until the early 1990s, the AACSB maintained its focus on the adequacy of resources or inputs. However, beginning in the early 1990s, the focus shifted to what individual processes an institution develops for planning, evaluating, revising, and analyzing its educational outcomes (Kimmell et al., 1998).

One instrument used by institutions to measure outcomes is an exit survey of levels of student satisfaction with their educational experiences. For example, EBI MAP-

Works (n.d.), a company formed in 1994, developed a survey instrument to provide comparable student satisfaction data across MBA programs. As such, EBI surveys ask students to rate their satisfaction levels in all institutional areas including teaching quality, skills development, and overall satisfaction with the programs they attended (EBI MAP-Works, n.d.).

Shaftel and Shaftel (2007) compared the pros and cons of different measures of outcomes assessment in business education. They pointed out that while the AACSB provides broad guidelines for assessment, it is up to each institution to interpret those guidelines within the present framework of what is known as outcomes-based education reform. Shaftel and Shaftel found several problems with outcomes-based testing. For one thing, tests that are designated as *high-stakes tests* may determine whether an institution will continue to receive accreditation but may not provide valid information regarding individual students (Shaftel & Shaftel, 2007).

On the other hand, a major issue bedeviling all forms of assessment is differences in how stakeholders define and interpret the criteria to be used in a given assessment instrument (Shaftel & Shaftel, 2007). Paul and Elder (2002) indicated that humans decode everything they see or experience by creating concepts to explain them. In other words, people conceptualize the “reality” of what they have experienced and make inferences on the basis of this conceptualization. Given that each individual conceptualizes differently, most concepts are wide open to interpretation, as would be the case on exit surveys such as the EBI or even instruments asking faculty to evaluate class or program outcomes. Criteria used in evaluation are concepts, and so each evaluator

brings his or her interpretation to each criterion—hence the confusion over how to define critical thinking.

Due to this variability in defining and interpreting concepts or criteria, Shaftel and Shaftel (2007) listed some of the negative impacts in relation to the accuracy of outcomes assessment. These range from “narrowing of the curriculum to unethical test preparation and administration practices . . . [to] Restating program goals to fit the achieved outcomes” (Shaftel & Shaftel, 2007, p. 228). Therefore, given the issues involved with accurately assessing how well an institution or even a single program, such as accounting, is meeting its educational goals, it is imperative to explore whether the desired outcomes themselves can be more accurately defined in order to reduce the variability in their interpretation by all business education stakeholders.

### **Conclusion**

This chapter explored the issues introduced in Chapter I in more detail. As such, it traced the demand for critical thinking skills in the workplace to the impacts of globalization and technology. Next, it explored the difficulties inherent in a coherent management education response to the aforementioned impacts. Furthermore, it explored the existing debates within education regarding how critical thinking should be defined, taught, and assessed, finding no successful resolution. Finally, it looked at issues related to the successful transfer of cognitive skills including critical thinking.

The salient point emerging from the review of the literature was the need for more targeted, refined research to come up with an operational definition of what constitutes



critical thinking, particularly in the workplace, given the symbiotic relationship between management education and industry. Only then will relevant learning objectives and assessment instruments be created within the educational context.

Finally, Hodge and Lear (2011) conducted a study comparing the perceptions of business students and faculty regarding competencies required in today's workplace. They found that there was a difference in how faculty and employers perceived the importance of communication skills and creativity, with faculty ranking them lower than employers. Similarly, they found that while faculty were in agreement with employers regarding critical thinking and problem solving, students ranked them lower, giving preference to skills such as time management and teamwork (Hodge & Lear, 2011). Similarly, Gabric and McFadden (2001) found gaps between employer and student expectations of employment skills and characteristics due apparently to a lack of understanding on the part of the students.

Most importantly, Fischer (2011) found that employers were disappointed with college graduates' ability to think critically, analyze large amounts of data, and formulate coherent arguments. This contradicts Chapter II findings about management education's attempts to address various shortfalls through different pedagogical approaches. It also contradicts exit survey results (e.g., EBI) indicating students' satisfaction with their skill levels in these same areas. Therefore, given the overall confusion demonstrated in the literature review regarding how critical thinking is viewed by different management education stakeholders, it was expected that this study would find differences in how employers and faculty define critical thinking in action.

## CHAPTER III

### METHODOLOGY

No phenomenon is a . . . phenomenon until it is an observed phenomenon.  
(Wheeler, n.d., para. 11)

This chapter provides a detailed description of methods used to identify how each stakeholder group reported definitions of critical thinking in action. It contains the purpose of the study and the research question, research design, population and sample, rationale for the sample selection, ethical considerations, data collection procedures, data analysis process, and approach to validity and reliability. The chapter concludes with a brief summary.

#### **Purpose Statement**

The purpose of this study was to explore how two important stakeholder groups of Southern California business education, accounting faculty and regional employers of accounting graduates, report definitions of critical thinking and how they expect graduates to demonstrate critical thinking.

#### **Research Question**

The objective of the study was expressed in the following research question: What differences exist in the conceptualization and operational assessment of critical thinking between those who teach accounting and those who seek to employ accounting majors?

## Research Design

This study took a phenomenological approach utilizing semistructured interviews to explore how individual members of two business education stakeholder groups, accounting faculty and employers of accounting graduates, reported definitions of critical thinking in action. Jonker and Pennink (2010) defined a research paradigm as a set of assumptions about how the world may be perceived, which in turn serves as a framework to guide the researcher's approach to the study. According to Laughlin (1995) and Saunders, Lewis, and Thornhill (2009), a researcher's choice of paradigm is influenced by the nature of the knowledge sought (*ontology*) and how this knowledge is developed or acquired (*epistemology*). In ontological terms, two primary paradigms define the nature of knowledge: the existence of an external, objective reality, independent of social actors, and a subjective reality in which interpretation by social actors is integral (Wahyuni, 2012). These two competing paradigms are called positivism and constructivism, respectively, each with its own variations. As both research question and purpose clearly defined the focus of this study as a description and interpretation of study participants' views, the researcher was not observing a phenomenon completely independent of the actors involved in the study. Hence, the study was situated within interpretivism, a constructivist paradigm, thereby requiring a qualitative approach or methodology.

There is a common recognition of qualitative research as a way of understanding the world in its natural setting, which includes the participants and their attempts at making sense of the phenomena they encounter (Creswell, Hanson, Clark Plano, &

Morales, 2007; Denzin & Lincoln, 2011). As Krathwohl (2009) explained, qualitative research is the more useful means to describe “complex personal and interpersonal phenomena that would be impossible to portray with quantitative research’s single dimensional scales” (p. 237). Specifically, Krathwohl deemed qualitative inquiry well suited for situations where “research is lacking in an area and one must emphasize discovery rather than corroboration of hypotheses . . . [or] when research progress in an area has plateaued and you are seeking a new perspective” (p. 237), as was attested to in Chapters I and II of this study.

Phenomenological studies seek common themes, “a universal essence” (Krathwohl, 2009, p. 76), in how multiple individuals experience a particular phenomenon, and may be viewed as either a research method or a philosophy, with different streams “stemming from the works of Husserl and Heidegger” (Tuohy, Cooney, Dowling, Murphy, & Sixsmith, 2013, p. 17). However, Patton (2014) differentiated between a phenomenological study and a phenomenological approach to qualitative research. Many forms of qualitative research have roots in the phenomenological tradition but do not follow all the dictates of this approach as they are impractical within some studies (e.g., in-depth interviews typically executed on multiple occasions, detailed history taking to understand how a person’s past influences his or her perceptions; Patton, 2014).

### **Lack of Consensus Around Critical Thinking**

As demonstrated in the literature, there is a decided lack of consensus as to how best to define critical thinking (Ferrett, 2015; Halpern, 1996; Lai, 2011; Petress, 2004; Scriven & Paul, 2003), whether and how it can be taught, and how it is to be measured (Anderson & Krathwohl, 2001; Sampson et al., 2007; Snyder & Snyder, 2008; Watson et al., 2003). Von Krogh, Rossi-Lamastra, and Haefliger (2012) argued that the significance of phenomenon-based research lies in its ability to investigate inexplicable phenomena as interesting in their own right rather than as mere opportunities for testing theories. Additionally, the authors argued that phenomenology represents a starting point in the scientific inquiry into complex phenomena without the limitation of launching such an analysis with “the *a priori* formulation of hypotheses” (Von Krogh et al., 2012, p. 279). This allows a researcher to make sense of preliminary results with an understanding that may give rise to new avenues of research that could ultimately yield knowledge useful to practitioners.

### **The Importance of Context**

The literature indicated that domain or context affected how critical thinking was defined or assessed. Heilbron (1990) argued that phenomena are increasing in their complexity while simultaneously decreasing in generalizability. Investigating a phenomenon within the bounds of a specific context might reduce the number of variables impacting its complexity while avoiding the need for generalizing the results outside the bounded domain. Therefore, building on Creswell’s (2013) definition of

phenomenology as “the common meaning for several individuals of their lived experiences of a concept or a phenomenon” (p. 76), this approach was deemed the most effective means by which to determine whether individuals within a single academic and professional domain could be said to have a shared experience of critical thinking in action.

### **Complex Nature of Social Phenomena**

Lincoln (1985) argued that social phenomena are idiosyncratic. On the other hand, Reed and Hughes (1992) posited that phenomena stem from multiple causes, making them chaotic by nature. As such, each phenomenon has unique characteristics, with causal variables influencing one another and the phenomenon itself, preventing researchers from approaching “them in a reductionist manner” (Von Krogh et al., 2012, p. 280).

### **Moustakas’s (1994) Approach**

Moustakas (1994) provided a series of steps by which to determine whether the phenomenological approach was the best fit for the purpose of the study, which were paraphrased into the following questions the researcher asked herself:

1. Is it important to understand a shared experience among different individuals?
2. Is the phenomenon important?
3. Can additional data be collected from other sources (e.g., EBI and literature)?

4. Can the interview questions be guided by two general questions, namely, “What have you experienced in terms of the phenomenon,” and “What contexts or situations are influenced by your experiences of the phenomenon”?

In answer to Question 1, the study sought to determine how two educational stakeholder groups define critical thinking in action. Both groups share the experience of seeking those skills in the same population—business graduates. Both groups are instrumental in assessing whether critical thinking is being demonstrated by business graduates. Both groups agree that the skills are lacking. In answer to Question 2, given the recognized importance of critical thinking in both the workplace and the classroom, the lack of consensus in the literature surrounding defining, teaching, and assessing critical thinking may be regarded as an important phenomenon. In answer to Question 3, additional data were collected about the causality underlying the phenomenon, as discussed in Chapters I and II. Finally, in answer to Question 4, as shown below, the interview questions were designed precisely with those two questions in mind.

This discussion is incomplete without recognizing the limitations inherent in utilizing a qualitative methodology for any study. Chief among these would be the inability to generalize findings to a larger population due to both smaller sample size and the need to select participants from similar backgrounds to ensure a shared experience of the phenomenon under investigation. Ironically, while this study’s sample size limited the generalizability of its findings, the method by which data were gathered generated large amounts of data. Therefore, the entire process of gathering, processing, and

analyzing the data became extremely time consuming for the researcher (Krathwohl, 2009).

### **Population and Sample**

The population for this study was accounting faculty and employers hiring accounting graduates in Southern California. Denzin and Lincoln (2008), Glesne (2010), and Krathwohl (2004) stated that the choice of population depends on its relevance to the purpose of the study. In other words, the researcher selects a portion or sample of a larger population that meets the criteria set out by the research question. Additionally, according to Creswell et al. (2007), in phenomenological studies, participants must have personal experience with the phenomenon under investigation. As qualitative research aims for richness of data and depth of understanding, sample sizes tend to be small although numbers can vary significantly between five and 25 (Baum, 2000; Patton, 1990; Polkinghorne, 1989; Rubinstein, 1994). In the present study, five faculty members and five employers were included in the sample.

In qualitative studies, samples are selected with purpose rather than at random (Ezzy, 2002; Mays & Pope, 1995). Krathwohl (2004) contended that this kind of purposive sampling is frequently used in qualitative studies as a means of isolating specific participants in keeping with the focus of a study, also referred to as “systematic, non-probabilistic sampling” (Mays & Pope, 1995, p. 110).



### **Selection Criteria**

In keeping with the research question's mandate for an experience-based comparison of the phenomenon, two distinct stakeholders of management education were selected for the sample: faculty and employers. To further ensure parity in their experiences, participants were selected from within a single discipline in management education: accounting.

**Definition of faculty participants.** For the purpose of this study, accounting faculty were initially designated as full-time or part-time faculty with a minimum of 5 years' experience in instructing both undergraduate and graduate business students in public and private Southern California business programs in regionally or nationally accredited institutions of higher learning. The choice of full-time faculty was deemed appropriate, as they are involved with curriculum design, college governance matters relating to student performance and abilities, and meeting standards set by accrediting bodies. Upon further consideration, part-time faculty were deemed inappropriate as accounting adjuncts tend to be industry practitioners. This would put them in both the faculty and employer pools simultaneously. Additionally, adjuncts are less likely to be involved with curriculum design and therefore not as familiar with how educational outcomes are determined or assessed.

**Definition of employer participants.** Employers were designated as those having occasion to hire and oversee new accounting graduates within the past 5 years in Southern California companies employing 25 or more employees in the case of the for-profit sector, and 10 or more employees in the case of the public sector. In the case of the

education sector, employers were designated as those having occasion to hire and oversee new business graduates within the past 5 years in Southern California nationally or regionally accredited institutions including 4-year colleges, community colleges, and public school districts.

The rationale for the size difference between the for-profit and public sectors had to do with the fact that in public accounting firms, accounting graduates are hired to serve a plethora of clients, and critical thinking is an extremely valued skill regardless of firm size (L. Saddlemire, personal communication, November 23, 2013). On the other hand, in the for-profit sector, companies with fewer than 25 employees may hire an accounting graduate for a variety of accounting functions ranging from bookkeeping to purchasing, none of which would require a very high level of critical thinking. Exceptions to this rule are some doctors' or lawyers' offices, which might hire an accounting graduate for a full-time accounting position due to the high volume of billing even when operating with fewer than 15 employees (L. Saddlemire, personal communication, November 23, 2013). Therefore, companies with 25 or more employees were designated as the most likely to hire an accounting graduate full time.

### **Geographical Delimitation**

The geographical delimitation was based on further narrowing the scope of the study on the assumption that students of Southern California business programs would be most likely to seek employment within the state as well as to avoid possible variations in curriculum offerings by region. As such, participants from both stakeholder groups were

selected with an eye to ensuring maximum variability within each group to ensure fair representation across a spectrum of educational, public, and private institutions to avoid skewing results in the direction of any particular type of organization. One way to ensure this was by means of the snowball technique for recruiting participants.

### **Sampling Technique**

Snowball sampling begins with an initial, albeit limited, pool of participants who then recommend other participants relevant to the study criteria (Morgan, 2008). This sampling technique draws its name from the analogy of a snowball increasing in size as it rolls down a snow-covered hill. Snowball sampling allows the researcher to sample purposively in the absence of convenient lists, as was the case with employer participants. Specifically, the researcher gains two or three leads from an initial source and, upon interviewing those leads, is put in touch with more participants in an ongoing, iterative process (Biernacki & Waldorf, 1981). In the present study, the *leads* were professional contacts of the researcher.

Snowball sampling can be problematic in that it depends on each participant understanding the nature of the research sufficiently so that he or she is able to identify suitable participants who do not have a limited or biased understanding of the research (Oliver, 2006). An additional disadvantage with this technique is the very fact that participants are potentially acquainted with one another—a possible source of bias (Oliver, 2006). The purpose and research question of this study were sufficiently

uncontroversial in nature so that snowball sampling yielded dedicated professionals within each management education stakeholder group.

### **Instrumentation**

This study relied on semistructured interviews. Englander (2012) argued that interviewing has become the data collection method of choice in qualitative research. For phenomenological researchers interested in understanding the phenomenon as it is lived by their human study participants, the interview provides an avenue through which to acknowledge the subjectivity that surrounds the lived experience (Englander, 2012). Leech (2002) argued that interviews are driven by the information gap between what the researcher already knows and what the researcher has yet to find out. In other words, what the researcher wants to know will determine what questions will be asked while what the researcher wants to find out will determine how the questions are asked. This information gap also drives the style of interview. Semistructured interviews represent a middle ground between the two extremes of structured and conversational (open-ended) interviewing as the researcher has a predetermined set of questions to ask but also the flexibility to draw the subject out in response to those questions (Currivan, 2008).

Prior to conducting the actual interviews, a field test was run with one participant from each stakeholder group—faculty and employer. The purpose of the field test was to test the viability of the question set as initially conceived, gain an understanding of the length of time required for each interview, determine how best to document responses and code results, and develop some insights into best practices with regard to drawing out

the participants without in any way leading them during the interview process. The two primary questions on Moustakas's (1994) list—participants' direct experiences of the phenomenon and the contextualization of these experiences—were further refined into three open-ended questions (see Appendix A for a complete overview of finalized follow-up questions):

- What comes to mind when you hear the phrase “critical thinking”?
- In your experience with recent hires/students (last 5 years), are you satisfied with their ability to think critically?
- Could you provide a specific example(s) of recent hires/students who demonstrated/failed to demonstrate a high level of critical thinking?

Field-test participants were debriefed after the interviews regarding the appropriateness of the length of the interview, the clarity of the open-ended and follow-up questions, how well the researcher had put them at ease, and whether any important questions had been left out.

### **Data Collection**

This section outlines the procedures used for data collection.

#### **Confidentiality of Participants and Data**

Before contacting participants, all relevant documentation (see Appendix B) was submitted to the University of La Verne's Institutional Review Board for the Protection of Human Participants in Research (IRB). In keeping with what was approved by the IRB, no identifying information was recorded about any of the participants during the interviews. Additionally, participants were promised anonymity in the initial e-mail they

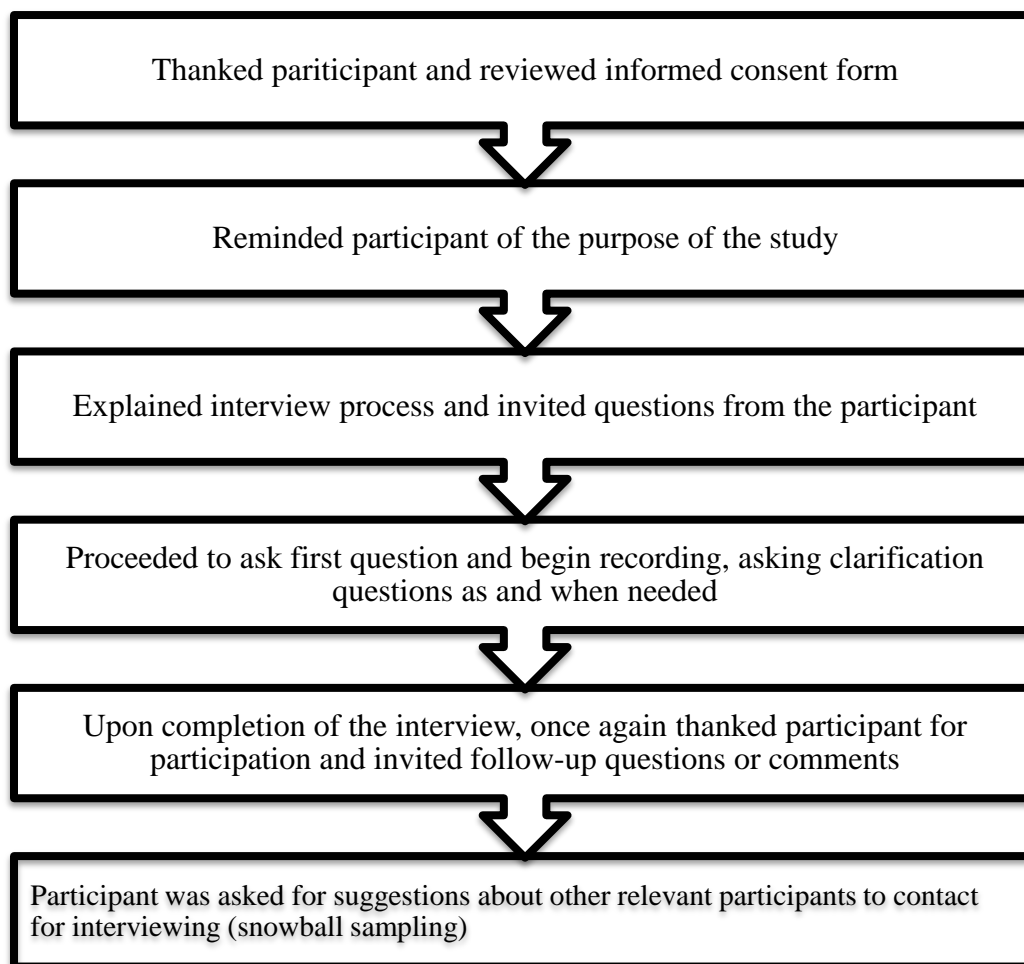
received describing the study and requesting their participation. To ensure anonymity while still maintaining clarity in data sourcing, participants were identified according to their respective stakeholder roles, either faculty (F) or employer (E). An additional distinguisher was added to each participant in the employer group indicating whether he or she worked in the for-profit (Profit), public (Public), or educational sector (Edu).

### **The Process**

After IRB approval was received, an e-mail was sent to participants explaining the purpose of the study and requesting their participation (see Appendix C). In the e-mail, choice of interview location and method (i.e., face-to-face or over the telephone) was left to each of the participants. When a positive response was received, the time and place of the interview were scheduled. Additionally, participants were sent an informed consent form (see Appendix D) detailing the nature of the interview questions and their relationship to the purpose of the study, any potential risks to the participants, benefits of the study, and how the participants' confidentiality was to be maintained. The interviews proceeded as shown in Figure 2.

### **Data Analysis**

For this study, interviews were recorded and the recordings sent to a confidential transcription service. Upon receipt of the transcripts, identifying information was removed from the transcripts, and the transcripts were reviewed for accuracy and completeness in comparison with their relevant recordings. Additionally, they were checked against the field notes maintained by the researcher as recommended by Miles



*Figure 2.* Steps in interview process.

and Huberman (1994). The researcher then read each transcript in its entirety to get a sense of it as a whole before beginning the coding of the transcript. As part of an ongoing, iterative process, the researcher moved from detailed analysis to a review of the whole, moving from description to analysis throughout the process (Creswell, 2013).

The steps in analyzing the data are shown in Figure 3.

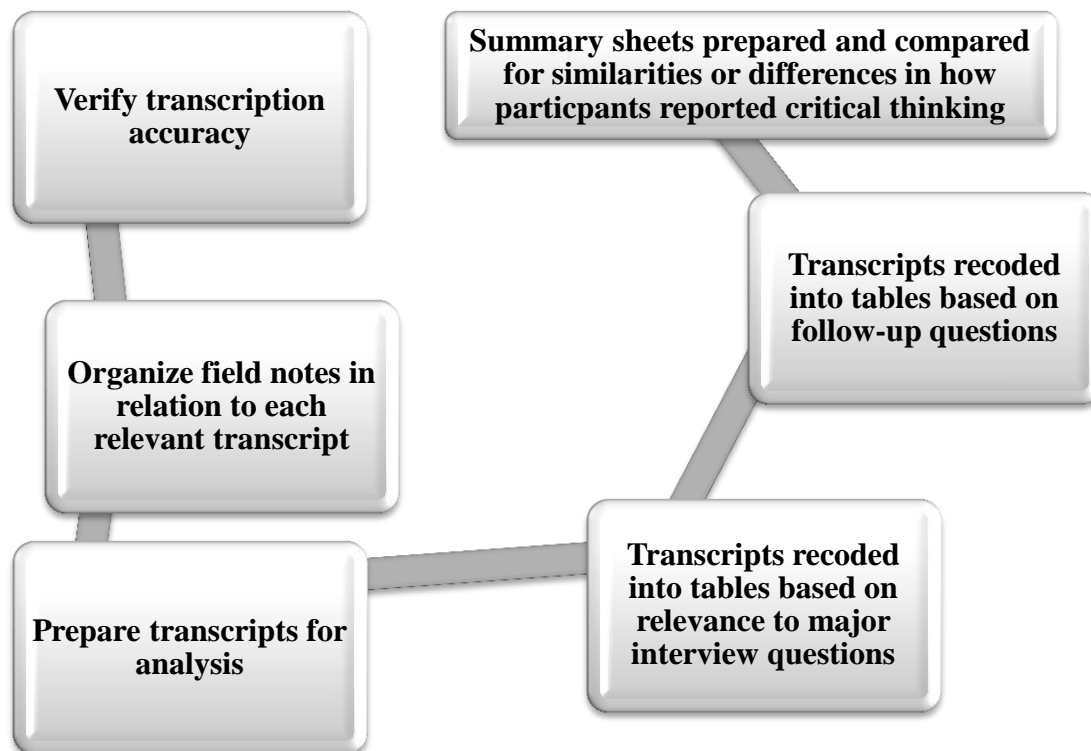


Figure 3. Data analysis process broken down into steps.

### Validity and Reliability of This Study

This study defined validity or validation in the following manner:

an attempt to assess the “accuracy” of the findings, as best described by the researcher and the participants . . . [wherein] I use the term *validation* to emphasize a process . . . rather than verification (which has quantitative overtones) or historical words such as *trustworthiness* and *authenticity* . . . to suggest that the researchers employ accepted strategies to document the “accuracy” of their studies. These I call validation strategies. (Creswell, 2013, pp. 449-450)

### Different Types of Validity

Krathwohl (2004) defined internal validity as the researcher’s ability to show a causal relationship between variables in the study. As this study compared similarities



and differences in how two management education stakeholder groups experienced critical thinking in business graduates, establishing causality was not a primary goal of this study. In contrast, external validity is significant if a researcher seeks generalizability of research findings to other populations from the one studied. Here again, however, this study was more interested “in documenting particularistic findings than universalistic findings” (B. Johnson, 1997, p. 289). A third type of validity is theoretical validity, which comes into play when a researcher seeks to either test or develop a theory or to understand how a phenomenon operates and why it behaves as it does (B. Johnson, 1997). While this might be an interesting future line of inquiry, it was also not a primary target of this study.

B. Johnson (1997) offered two more types of validity relevant to a phenomenological study: descriptive and interpretive validity. Descriptive validity refers to how factually accurate the researcher’s accounts of the observed phenomenon are while interpretive validity refers to how well the researcher understood the participants’ viewpoints, thoughts, intentions, and experiences in relation to the phenomenon. To determine whether the study was descriptively and interpretively valid, Polkinghorne (1989) and Creswell (2013) offered a framework through which the researcher might establish descriptive and interpretive validity, which was used in developing the strategy below.

Chapter I clearly established the lack of consensus between employers and management educators in their respective definitions of critical thinking skills in business graduates and how they should be assessed, thus meeting Creswell’s (2013) requirement

for a clear phenomenon to be studied. The researcher utilized bracketing as a means of maintaining a fresh perspective during data analysis, a process through which the researcher attempts to keep his or her own views aside to ensure the participants' views are not distorted by the researcher's own biases (Creswell, 2013; Moustakas, 1994). Several qualitative handbooks, such as those by Moustakas (1994), Polkinghorne (1989), Krathwohl (2009), Silverman (2005), and Creswell (2013), were consulted regarding data analysis procedures to ensure the researcher used a systematic and well-accepted approach to analysis. Notetaking during the interviews (of any specific reactions or nonverbal information essential to understanding the transcripts) and careful transcription and checking of transcripts also adds to the validity claims a researcher can make, which were attentively considered in this study (Creswell, 2013; Polkinghorne, 1989). Finally, in alignment with Polkinghorne (1989), the use of bracketing ensured that conclusions that appeared nonconfirming or in disagreement with emerging themes were not ignored.

Husserl (1999) originated the term *bracketing*, or *epoché*, in *The Idea of Phenomenology* wherein he argued that a researcher should suspend existential assumptions made in daily life or in the sciences in order to focus solely on experiencing the daily world. In other words, the researcher sets aside any assumptions or personal experiences with a given phenomenon in order to, as it were, walk a mile in the participants' shoes (Polkinghorne, 1989). To achieve this mindset, the researcher engaged in reflexive writing to check what, if any, assumptions were present prior to each iteration of data analysis. These reflexive notes were consulted prior to noting down

emerging themes or conclusions arising out of the data to ensure that the researcher was not skewing the results due to the influence of unacknowledged assumptions.

### **Reliability**

Silverman (2005) noted that reliability can be achieved in several ways such as through the utilization of reliable technology in recording interviews, the use of reliable transcription services, or the use of computer programs such as Deedose to aid in data analysis. An additional aid to ensuring reliability is known as interrater or intercoder agreement. In essence, the researcher seeks out one or more willing coders with whom an agreement is reached regarding what everyone will focus on in analyzing the data (Creswell, 2013). Once that agreement has been reached, coders will independently code several transcripts and then meet to discuss the level of agreement. Miles and Huberman (1994) suggested an 80% agreement rate among all coders. This study utilized one independent coder to establish agreement on coding practices and emergent themes on four interview transcripts.

### **Summary**

Management education is facing a new normal with regard to demands from the public and industry to produce graduates with relevant skills for a workplace that is complicated by globalization and technological advancements. According to employers, there is a considerable skills gap between workplace needs and business graduate performance in the workplace. Within this skill set, one particular skill in high demand but apparently not in evidence in business graduates is higher order or critical thinking.

However, neither employers nor faculty can come to an agreement as to how this skill set is to be defined or assessed. To highlight this perception gap, this study purposively sampled two stakeholder groups of management education, faculty and employers of business graduates within the field of accounting, and used semistructured interviews to analyze how each group reported definitions of critical thinking in action.

## CHAPTER IV

### RESULTS

#### Overview

A search of the literature highlighted an ongoing debate among business education stakeholders regarding the efficacy of what colleges are doing to prepare students for the workplace (see Chapter II). The literature highlighted a gap in how various stakeholder groups (e.g., faculty, employers, students) define skill sets that employers require and what colleges claim to teach (Bloom et al., 1956; Kennedy et al., 1991; Lewis & Smith, 1993; Petress, 2004; Sternberg, 1986). Nevertheless, all business education stakeholders are being held accountable for creating measurable links between what is taught, desired learning outcomes, their relevance to future employment, and the cost of higher education, despite a lack of consensus as to how this is to be achieved. Therefore, in order to gain a better understanding of the factors underlying this overall lack of consensus, two primary business education stakeholders, employers and instructors of accounting graduates, were interviewed to explore their definitions and assessment of one of the skill sets required by employers: critical thinking. The research question underlying the data analysis was, What differences exist in the conceptualization and operational assessment of critical thinking between those who teach accounting and those who seek to employ accounting majors?

### **Data Collection and Coding**

Denzin and Lincoln (2008), Glesne (2010), and Krathwohl (2004) argued that the purpose of a study should drive the selection of its participants. As mentioned above, a sample of accounting employers and instructors from a variety of Southern California organizations was selected using the snowball and purposeful sampling methods. Semistructured interviews, comprised of three open-ended questions (with follow-up questions), were then conducted either in person or over the phone. The interviews were recorded, and the recordings were transcribed and then coded and analyzed. The interview process is detailed in Figure 2 (in Chapter III), and the data analysis process is broken down in Figure 3 (in Chapter III).

### **Demographic Particulars of Participants**

The final sample of participants included five accounting faculty members representative of private and public universities and colleges in Southern California and five employers of accounting graduates representative of the for-profit, public, and educational sectors in Southern California. Each participant was provided with an identifier based on his or her stakeholder group—F for faculty or E for employer. Participants were then numbered in the order in which they were interviewed and described in relation to the size and type of organization they were affiliated with (see Chapter III for a more detailed description). Tables 5 and 6 provide participant demographics and matching identifiers.

Table 5

*Description of Participant Demographics and Identifiers—Faculty*

Participant designation	Description of demographics
F1	Full-time faculty member in a <i>private</i> , regionally accredited, 4-year institution with more than 5 years of teaching experience
F2	Full-time faculty member in a <i>public</i> , nationally accredited, 4-year institution with more than 5 years of teaching experience
F3	Full-time faculty member in a <i>public</i> , nationally accredited, 4-year institution with more than 5 years of teaching experience
F4	Full-time faculty member in a <i>private</i> , regionally accredited, 4-year institution with more than 5 years of teaching experience
F5	Full-time faculty member in a <i>public</i> , nationally accredited, 4-year institution with more than 5 years of teaching experience

Table 6

*Description of Participant Demographics and Identifiers—Employers*

Participant designation	Description of demographics
EProfit1	Comanaging partner in SoCal CPA firm with more than 25 employees
EProfit2	Partner at a top 100 accounting firm with more than 40 partners and principals, 150-plus team members, and office locations in SoCal and internationally
EProfit3	Managing partner in CPA firm with 50 employees and office locations in SoCal and other major cities around the United States
EProfit4	Partner in SoCal CPA firm with more than 25 employees
EPublicEdu	Financial operations officer in a county business office employing more than 50 staff members responsible for more than 40 public school districts

*Note.* SoCal = Southern California; CPA = certified public accountant.

## Coding

Creswell (2013) defined coding as a way of chunking the total data derived in a study into smaller, more manageable categories of information labeled based on what emerged from the literature used to inform the study and the research question itself. Depending on the type of study (e.g., narrative versus phenomenological), the nature of the study (e.g., exploratory versus causal research), and the data collection methods (e.g., semistructured interviews versus observations), Saldana (2009) provided an exhaustive comparison of possible coding approaches. One such approach is provisional coding, whereby the researcher develops a “start list set of codes prior to fieldwork” (Miles & Huberman, 1994, p. 58). These codes may derive from a variety of sources including the researcher’s previous knowledge or experiences, what the researcher anticipates as possible responses, or the literature review that informs the study and the research question (Saldana, 2009).

Provisional coding lent itself well to this study, as the research question arose out of easily identifiable issues highlighted by the literature review. In addition, the research question contained two distinct concepts that could be applied as coding categories: conceptualization and operational assessment of critical thinking. These concepts were integrated into the design of the interview questions so that each of the major interview questions aimed to elicit answers relating to one or the other of the concepts. Finally, the follow-up questions aimed to elicit in-depth answers relating to each of the major interview questions and to target specific issues arising out of the literature review. Below is a detailed overview of how the data were organized and coded:



**Level 1.** As indicated above, interviews were semistructured and revolved around three major questions:

1. What comes to mind when you hear the phrase “critical thinking”?
2. In your experience with recent hires/students (last 5 years), are you satisfied with their ability to think critically?
3. Could you provide a specific example(s) of a recent hire/student who demonstrated/failed to demonstrate a high level of critical thinking?

In keeping with the study’s research question, Interview Question 1 aimed to elicit how participants defined (*conceptualization*) critical thinking, while Interview Questions 2 and 3 looked at whether participants could provide specific examples of critical thinking in action (*operational assessment*) in the classroom or in the workplace. Therefore, Level 1 responses were organized by *initial* answers to each of the major questions.

**Level 2.** All three major questions had follow-up questions designed to elicit more depth of response and touch on some of the issues brought up in Chapter II, including the following:

1. changes wrought by globalization and technology and their impact on the need for critical thinking within the accounting profession;
2. inherent contradictions in the literature regarding the following:
  - a. employers who claim disappointment with college graduates’ ability to think critically and how they came to this conclusion,
  - b. management education’s claims of addressing these shortfalls with a variety of pedagogical approaches, and
  - c. exit survey results indicating students’ satisfaction with having increased their critical thinking skills during their courses of study; and

3. scholarly and professional debate over what constitutes critical thinking, including the following:

- a. abilities (e.g., analyzing),
- b. dispositions (e.g., flexibility),
- c. the role of domain or context within which critical thinking should be defined and assessed,
- d. knowledge (e.g., domain-specific background information), and
- e. behavior as an indicator of critical thinking (e.g., risk taking).

Follow-up questions related to Issue 1 served to deepen responses to Interview Question

2. Follow-up questions related to Issue 2 served to deepen responses across all three major questions by looking at what mechanisms were in place, in the classroom or the workplace, both to teach critical thinking and to assess whether it had taken place.

Follow-up questions related to Issue 3 served to deepen responses across all three major questions with a focus on how respondents conceptualized critical thinking. Therefore, transcribed data were further organized by responses to follow-up questions in relation to each of the issues above.

**Level 3.** As there were two distinct categories of participants, faculty and employers, responses were separated by participant category within Level 1 and Level 2 coding.

## Data Analysis and Findings

This section provides a summary and comparative analysis of interview responses. Accordingly, the section is organized based on the primary and follow-up questions as they relate to the research concepts and themes that emerged from the literature.

### Faculty's Conceptualization of Critical Thinking

Field notes indicated that while most faculty participants were ready to tackle Interview Question 1 immediately, some employers were a bit more hesitant in how they responded. For example, EProfit1 joked about wanting to look up the term *critical thinking* in preparation for the interview, “because I graduated a while ago, and it’s not a term we often use at work.” Similarly, EPublicEdu paused significantly before attempting to define critical thinking and responded in a tone of voice that indicated a concern with providing a “correct” definition.

Responses indicated that F1, F4, and F5 defined critical thinking as an *ability*. Specifically, F1 and F5 referred to an ability to problem solve, which includes skills such as analyzing, evaluating, and identifying. In fact, F5 referred to an evolution of critical thinking skills within a problem-solving context as a student progresses from basic accounting classes to master’s-level classes. F4 spoke about an ability to utilize relevant *knowledge* in a specific problem-solving context. F3 also alluded to the utilization of different types of knowledge: “take the theory or the concepts and solve . . . ,” and, more indirectly, conceptualizing: “thinking . . . outside the box.” F2 began by indicating that

the accounting profession is unclear about how to define critical thinking but then continued to talk about critical thinking as a form of *conceptualizing* in a problem-solving context:

Identify the issues that are involved . . . understand what are the different possibilities, alternatives, and then choose one and support their answer. . . . Then looking at a problem, seeing what are the alternatives and also seeing what are the concepts behind these alternatives, and then making a decision based on how the concepts underlie practical aspects.

F2 also spoke about critical thinking as a *disposition* toward skepticism.

### **Employers' Conceptualization of Critical Thinking**

EProfit1, EProfit2, and EPublicEdu defined critical thinking in terms of *knowledge/information* utilization and processing, but each with a different emphasis.

EProfit2 focused on the ability to spot anomalies in accounting-related information:

“When you get thrown a curve, how do you deal with that information?” EProfit1 saw

critical thinking as an *ability* tied to knowledge/information processing: “Being able to be logical in your thought processes . . . the ability to gather data, synthesize, and provide a conclusion, and articulate it.” EPublicEdu focused on *dispositions* in relation to

knowledge/information processing, such as knowing what knowledge to apply or when to ask for additional information. On the other hand, EProfit3 defined critical thinking as

the application of relevant knowledge to a specific context and the ability to problem

solve. EProfit4 saw critical thinking as a conceptual ability that involves objectivity

when looking at an issue/problem, or “looking at things from an objective standpoint that

you're seeing both sides of the coin," including the ability to distinguish between the whole and its parts and the ability to interpret a client's needs.

Before looking at how faculty and employer respondents compared in their conceptualization of critical thinking, it is helpful to revisit what emerged from the literature regarding scholarly agreement about what critical thinking is. As shown in Table 3 in Chapter II, Lai (2011) synthesized findings into three categories:

- abilities such as analysis, problem solving, or synthesizing;
- dispositions such as flexibility, inquisitiveness, or fair-mindedness; and
- knowledge, or the importance of context-specific background knowledge.

In keeping with these findings, Table 7 shows the primary and secondary themes that emerged in the course of the data analysis. It also indicates the frequency of responses first by respondent category, faculty or employer, and then as an aggregate across both categories. Consensus between both groups was defined as more than three respondents in total agreeing on a specific theme, and the themes for which consensus was achieved are highlighted for easier visibility.

As can be seen from Table 7, there was considerable variation in how respondents conceptualized critical thinking both within and between categories. There was some clustering of responses around the ability to identify or conceptualize, to analyze or evaluate, and to problem solve. To a lesser degree, there was some overlap in responses regarding the importance of being able to apply knowledge, information, or data in different contexts.

Table 7

*Comparative Summary of Findings for Conceptualization of Critical Thinking*

Primary theme	Secondary theme	Frequency		
		F	E	Total
Ability	To make decisions	2	1	3
	To implement	1	0	1
	To synthesize	0	1	1
	To be logical/objective	0	2	2
	To articulate	1	1	2
	To identify/conceptualize	2	2	<b>4</b>
	To analyze/evaluate	2	2	<b>4</b>
	To problem solve	3	2	<b>5</b>
Disposition	Skepticism	1	0	1
	Using sound judgment	0	2	2
	Gut feeling	0	1	1
	Asking relevant questions	0	1	1
	Working or thinking independently	0	2	2
	Thinking outside the box	1	0	1
Knowledge, information, or data	Organize	0	1	1
	Gathering	1	1	2
	Relevance to context	0	2	2
	Application	1	2	3

*Note.* Frequencies that indicate consensus among both groups are in boldface. F = faculty; E = employer.

### **Faculty Satisfaction With Critical Thinking Abilities**

F1 believed that fewer students today have good critical thinking skills, as evidenced by their oral and written communication skills: “A reliable indicator might be that they are not simply taking existing passages from the Internet and copying or quoting it to a great degree but rather really using their own words.” F1 further distinguished between students with and without work experience, and the participant linked higher levels of critical thinking to those with experience. F3 concurred with F1 in linking

higher levels of critical thinking to work experience: “There’s no substitute for experience.” However, F3 provided no definite answer as to overall levels of critical thinking in today’s accounting students.

F2 indirectly indicated that critical thinking skills may have decreased by alluding to anecdotal evidence gathered from conversations with other accounting faculty: “If you talk to accounting professors, most of them say, ‘Oh, you know the students we had in the past were better students, at least in critical thinking.’” However, as F2 also believed that critical thinking is evidenced via the communication competence of each student, noting that “it’s tied up with communication skills,” the participant’s responses suggested uncertainty regarding levels of critical thinking in today’s accounting students. This was in keeping with F4’s hesitant acknowledgment that students had a satisfactory level of critical thinking: “Yes, I think so.” However, F4 was only able to back up this generalization about critical thinking in today’s students with one specific example of a successful student.

F5 indicated that despite communication differences, second-language students outperform low-level first-language students: “They don’t even measure up, many of them, to the international students.” Furthermore, F5 indirectly pointed to dwindling critical thinking skills as evidenced by the ratio of competent versus less competent students: “If I have six domestic students, two of them will probably be very outstanding, but the other four . . .”

F3 and F5 also commented on the link between an individual student’s preexisting ability or aptitude for critical thinking and the student’s performance in the classroom.

For example, F5 said, “the high-level ones [students], and [they] run with it.” Similarly, F3 claimed, “The top students, they’re going to have no problem at all.” In these responses, “high level” and “top students” refer to students with preexisting abilities or aptitudes for critical thinking.

### **Employer Satisfaction With Critical Thinking Abilities**

EProfit1 indicated mild satisfaction with the level of critical thinking in new hires but tied observed variations in skill levels to the aptitude of the individuals, thereby avoiding a generalization across all new hires: “That person didn’t stay here very long. . . . There’s students that do come in to me well prepared . . . but they’re engaged, so it doesn’t stop.” Additionally, EProfit1 articulated a lesser concern with critical thinking than with the written communication skills of younger hires: “If we have problems with the graduates right now . . . it is related to being able to articulate, either through oral communication or written communication.”

EProfit2 indicated overall satisfaction with the critical thinking skills of new hires but seemed to link this solely with graduates originating from a particular college program that integrates internships with the accounting program: “Students that come through that program have not only the critical thinking skills that we’re looking for . . . but they’re also just workforce ready.” EProfit3 concurred with EProfit2 in terms of levels of critical thinking being highly individualized and that this is linked to where individuals graduated from, stating, “but I think [where you graduated] determines how well prepared for the workforce you are or how well you can think critically.”



EPublicEdu also agreed with both EProfit2 and EProfit3 with regard to the individualized nature of critical thinking skills, both across new hires and between generations: “So it’s totally been a mix.”

EProfit4 did not provide a definitive answer but seemed to be leaning toward mild satisfaction with the critical thinking skills of new hires: “I think so.” EProfit4 believed that education’s role is to provide a foundation:

I never looked at people coming straight out of school as being absolutely ready to be 100% in a profession, because . . . school is . . . building that foundation to be able to come in and take on whatever additional learning is needed.

A comparative summary of primary and secondary themes that emerged from both sets of respondents is listed in Table 8. Frequency of occurrence is listed by category of respondent, faculty or employer, and then totaled. Consensus between both groups was defined as more than three respondents in total agreeing on a specific theme, and the themes for which consensus was achieved are highlighted for easier visibility.

As can be seen in Table 8, the primary theme regarding faculty and employer satisfaction with levels of critical thinking showed some agreement between both respondent categories on two secondary themes: skill level depending on prior experiences and overall satisfaction with critical thinking abilities. However, both faculty and employers seemed to be in marked agreement that it is not possible to generalize about levels of critical thinking in students and new hires. To a lesser degree, respondents also agreed that an individual’s disposition determines his or her ability to think critically.

Table 8

*Comparative Summary of Findings for Satisfaction With Critical Thinking Abilities*

Primary theme	Secondary theme	Frequency		
		F	E	Total
Satisfaction with level of critical thinking in new hires/students	Skill level depends on prior program of study/work experience	2	2	<b>4</b>
	No generalization possible	3	3	<b>6</b>
	Satisfied/somewhat satisfied with level of critical thinking	1	3	<b>4</b>
	Critical thinking skills decreased	1	0	1
Significance of communication skills	Skill level depends on program of study	0	1	1
	As a means of evidencing critical thinking	1	0	1
	Unable to communicate well	0	1	1
Preexisting ability or disposition to think critically	Depends on program of study/work experience	1	1	2
	Depends on the individual's disposition	2	1	3

*Note.* Frequencies that indicate consensus among both groups are in boldface. F = faculty; E = employer.

### **Faculty Examples of Successful or Unsuccessful Critical Thinking**

Examples of successful critical thinking provided by F1 included the quality of either written responses or questions asked in class as indicative of a deeper level of engagement with the material: "From time to time, I'll get maybe some decent answers on papers or decent questions in class or comments to other people's questions that demonstrate a deeper understanding of the material." On the other hand, F1 cited copy-and-paste plagiarism as an example of failed critical thinking.

F2 contrasted examples of a successful and a failed attempt of two students trying to secure employment, in relation to observed class performance, as evidence of critical thinking or lack thereof. In this case, the high-GPA student with lower critical thinking skills was unsuccessful in procuring a full-time job. However, “there was another student whose GPA was about average but had good communication and critical thinking skills, and she was able to get a job, so it [critical thinking] makes a difference.” F4 also cited a work-related example of a student who performed successfully during an interview by utilizing a definition of accounting provided by the instructor, as an example of critical thinking: “She remembered what I taught in class. . . . She remembered that accounting is more than just money; accounting is just something where you get information, use information, apply the information for decision-making purposes.”

F3 did not provide an example of critical thinking because of the basic nature of classes taught—that is, entry-level courses focusing on basic accounting concepts rather than the application of these concepts. On the other hand, F5 felt that a student’s ability or inability to provide insightful answers in response to the Socratic questioning process may be deemed an example of critical thinking or lack thereof: “Now, a lot of times I don’t get to that because the student just doesn’t have the level of development of critical thinking skills that he or she should have.”

### **Employer Examples of Successful or Unsuccessful Critical Thinking**

Both EProfit1 and EPublicEdu used concepts like “curiosity,” “understanding it,” and “desire to learn and grow and be engaged” to describe new hires’ abilities and

dispositions to be responsible for the work they would be doing beyond mere task completion. EProfit2 concurred, using phrases such as “work independently,” “deliver a good work product,” and “able to cross switch it” to point to new hires demonstrating pride in their work and the ability to transfer skills across various work contexts.

EProfit3 contrasted new hires’ skills in technology with experienced employees’ skill in judging how something should be done in a specific context: “I think maybe from a technological standpoint, [new hires] might have more knowledge about certain programs or certain ways to solve problems that the older generation, people, managers, might not even be aware of.” As such, EProfit3 suggested that critical thinking in new hires was evidenced through their utilization of technological applications for tasks older employees might do manually.

With regard to displaying a marked lack of critical thinking, EProfit4 and EPublicEdu concurred in their descriptions of new hires who focused on task completion steps or processes without taking an interest in the how and why of achieving a particular outcome or work product. For example, EProfit 4 complained that a new hire “did not show initiative for trying to [figure out] what the next step was or trying to question what this was.” Both employers described new hires who lacked initiative, did not ask clarifying questions, or simply wanted to be told what needed to be done and in what order: “I had another recent hire who . . . would just blindly input the data” (EPublicEdu).

Table 9 provides a comparative summary of primary and secondary themes that emerged from both sets of respondents. As before, frequency of occurrence is listed by category of respondent, faculty or employer, and then totaled. Consensus between both

groups was defined as more than three respondents in total agreeing on a specific theme, and the theme for which consensus was achieved is highlighted for easier visibility.

Table 9

*Comparative Summary of Findings for Successful/Unsuccessful Examples of Critical Thinking*

Primary theme	Secondary theme	Frequency		
		F	E	Total
Demonstrated ability to think critically	Deeper understanding/application of class material (evidenced in writing)	1	0	1
	Ability to cross apply skills to different contexts	1	1	2
	Disposition to respond to/ask probing questions, to learn new things, to work independently	0	2	2
	Good communication skills	1	0	1
	Ability to land a job	1	0	1
	Ability to utilize technology to solve problems	0	1	1
	Knowledge/experience about how certain things should be done	0	1	1
Demonstrated inability to think critically	Cut-and-paste plagiarism of class material	1	0	1
	Lack of communication skills	1	0	1
	Inability to land a job	1	0	1
	Lacking the disposition to respond to/ask probing questions, to learn new things, to work independently	1	3	<b>4</b>

*Note.* Frequencies that indicate consensus among both groups are in boldface. F = faculty; E = employer.

Both faculty and employer responses showed very little agreement within each major or secondary theme. However, one secondary theme garnered some agreement between the two groups: a student's or a new hire's lacking the disposition to take responsibility for learning new tasks or knowledge.

### **Significance of Globalization and Technology: Faculty Responses**

All five faculty respondents felt that both globalization and technology have had an impact on the profession and therefore on the need for critical thinking. With regard to technology, F1, F2, F3, and F4 described it in terms of information literacy due to the sheer volume of available information and the speed at which accounting reports must now be processed. For example, F1 said,

Yeah in the sense that there's a whole lot of information that we now have access to and you have to be able to discern what is good information, what is not, what's relevant, what is not and go through that kind of thinking.

On the other hand, F5 described critical thinking as a need for a working knowledge of those computer applications that allow effective processing of large amounts of information:

I don't have the level of technological kind of skills that I think perhaps should have. . . . Now, globalization, I think there's an explosion there in terms of global understanding . . . because American companies . . . search for . . . countries where they can get tax deals.

In relation to globalization's impact on the profession, F1, F3, F4, and F5 referred to increased competition; an increased need for accurate, timely information; and an increased volume of information. For example, F2 said, "One reason, competition and the economy has become more complex and so on." Similarly, F4 argued that "with technology, you can do that in 2 days, because you need the information fast to make decisions . . . and the faster you can do that, you're ahead of the competitor."

All five respondents, directly or indirectly, also pointed to the possible convergence of accounting standards between generally accepted accounting principles

(GAAP) now practiced in the United States and International Financial Reporting Standards (IFRS) initially developed as a way of creating common accounting standards across the European Union (“Generally Accepted Accounting Principles,” 2010; “International Financial Reporting Standard,” 2010). For example, F3 said, “Now accounting statements are going to be done based on international standards in the next couple years as opposed to GAAP.” Similarly, F4 argued, “From a global standpoint, you see more and more companies are moving overseas. . . . Therefore . . . in the near future, everything perhaps may be out of one standard.”

### **Significance of Globalization and Technology: Employer Responses**

With regard to the influence of globalization on the need to think critically, EProfit1 spoke generally about the importance of critical thinking within the auditing field without specifically dealing with impacts from either technology or globalization: “You have to be able to think critically when they give you a document, of whether it looks reliable, whether it makes sense with what you know about the company.”

EProfit2 also spoke about the auditing field, indicating globalization would ultimately require greater familiarity with both GAAP and IFRS and their application:

Certainly in their lifetimes, students coming out today are going to have to know that [GAAP vs. IFRS] . . . you need to analyze someone’s situation, apply their fact pattern, enter the law, and come up with the best advice for them.

EProfit3 concurred with EProfit2 regarding the need for greater competency with GAAP and IFRS, pointing to the increased complexity of the international business environment both within the United States and internationally: “Fifty, 60 years ago, you

might not have had to consider the possibility of how international or just rules and regulations in other countries might affect your work or your clients here, whereas it's definitely a consideration now." However, EProfit2 distinguished between entry-level and management-level hires with regard to how much each group would be impacted by globalization: "Again, it depends on what level they are."

EProfit4 seemed unsure as to whether globalization had any impact on critical thinking requirements in accounting, other than perhaps requiring greater intercultural skills: "Globalization . . . I don't know. I guess it would [have an impact] because you're interacting with different cultures, so you need to think a little more about how those interactions, maybe you don't understand the interactions." On the other hand, EPublicEdu was quite emphatic that globalization did not impact the need for critical thinking skills: "No, I wouldn't think so."

Like EProfit1, EProfit2 did not point to any specific impacts from technology but mentioned an increased need for technological competence within the field: "There's more technology involved today . . . and [a need] to be able to use that technology." On the other hand, EProfit3, while acknowledging technology's impacts on the overall accounting process and communication requirements, did not seem entirely sure about its impact on critical thinking skills: "I don't know if it requires a higher level of critical thinking."

Table 10 provides a comparative summary of primary and secondary themes that emerged from both sets of respondents. Once again, frequency of occurrence is listed by category of respondent, faculty or employer, and then totaled. Consensus between both



groups was defined as more than three respondents in total agreeing on a specific theme, and the themes for which consensus was achieved are highlighted for easier visibility.

Table 10

*Comparative Summary of Findings for Impacts of Technology and Globalization*

Primary theme	Secondary theme	Frequency		
		F	E	Total
Globalization has impacted the need for critical thinking	Requires knowledge of new, international accounting standards/rules (IFRS)	3	2	<b>5</b>
	Increasing economic complexity and rate of change	1	2	3
	Ability to work as part of a multicultural team	0	3	3
Technology has impacted the need for critical thinking	Ability to evaluate, identify, retrieve, and analyze <i>relevant</i> information	1	3	<b>4</b>
	Increasing volume/speed of information availability/processing	3	2	<b>5</b>
	Delivering value and service to clients	0	1	1
Globalization has <i>not</i> impacted the need for critical thinking		0	1	1
Technology has <i>not</i> impacted the need for critical thinking		0	1	1

*Note.* Frequencies that indicate consensus among both groups are in boldface. F = faculty; E = employer.

Under the primary theme of globalization's impact on the need for critical thinking, there was agreement between the two sets of respondents on the secondary theme of requiring knowledge of international accounting standards. Under the primary theme of technology's impact on the need for critical thinking, the secondary theme of increased volume and processing speed of information showed the most agreement

between the two groups while the abilities related to information literacy came in second in terms of agreement between the two groups.

### **Analysis and Findings for Inherent Contradictions in the Literature**

Faculty and employer participants were both asked questions regarding methods of assessing critical thinking, past and present comparison of critical thinking skills, and instruction/training in critical thinking. Regarding methods of assessing critical thinking, employers were asked, “Does your organization tie performance evaluations/promotions to the ability to think critically? Can you provide specific examples?” On the same topic, faculty were asked, “Do you have specific assessment criteria/a reward system tied to a student’s ability to think critically? Can you provide specific examples?” Regarding past and present comparison of critical thinking skills, both employers and faculty were asked, “Do you think that present day graduates/students have a greater/lesser ability for thinking critically than previous generations/experienced accountants?” Finally, regarding instruction/training in critical thinking, employers were asked, “Does your organization engage in training or development to strengthen critical thinking in new employees? Can you provide specific examples?” On the same subject, faculty were asked, “Do you provide instruction in critical thinking? Can you provide specific examples?”

**Methods of assessing critical thinking—faculty.** All five faculty respondents indicated that while critical thinking may be mentioned or required by the nature of an assignment in some way, it was not specifically included in assessment criteria. For

example, F1 said, “Other than in the syllabus, I don’t oftentimes use it. I say it verbally . . . probably more indirectly, but sometimes by the nature of the assignment, it will be direct in that way.” Similarly, F2 said, “No, I don’t think we really do that. Even though we assign the cases which are considered to be testing critical thinking or encouraging that, but we don’t really talk about it in the syllabus.” On the other hand, F5 began with, “Yes, in my course outline,” and then went on to explain how critical thinking was mentioned as part of assignment descriptions: “In my course outline, I use testaments that we will have some problems that are structured, some that are unstructured. . . . I just want to see you think, engage in critical thinking.”

**Methods of assessing critical thinking—employers.** EProfit1 indicated two approaches to assessment. The first related to how new hires are interviewed. That is, the interviewer utilizes a questioning approach consisting of either *hypothetical* or *open-ended* questions (Hamilton, 2013). In the case of hypothetical questions, the interviewee is asked to respond to a hypothetical situation posed by the interviewer—for example, “Tell us about a problem that you encountered at school or in your group project, and how did you handle it?” In the case of the open-ended question, the interviewee provides a real-life example from personal experience. Regardless of the type of question employed, the interviewer is looking at the interviewee’s problem-solving skills when presented with an unstructured, unexpected situation or problem (Hamilton, 2013). This assessment approach, utilizing open-ended questions, was echoed by EProfit2: “It’s something I ferret out in asking questions [during interviews]. . . . What I do is I ask questions such as, ‘What was the most difficult problem you had to solve? How were

you able to resolve it?” On the other hand, EProfit1’s second assessment approach related to written evidence of the employee’s critical thinking identified by the audit trail: “There’s a lot of documentation in this profession, so there is kind of a trail of your thought process and your thinking process.”

EProfit3 indicated a more indirect assessment approach related to performance reviews: “Maybe not specifically, but maybe during an annual review . . . [the employee is told] ‘We’ve noticed that you’re good at this; we’ve noticed that you’re able to get an assignment and follow through, ask the right kinds of questions.’” This was echoed by both EProfit4, who stated, “Critical thinking is in our competency charts and in our job description,” and EPublicEdu, who noted, “We actually use a standardized form, so I don’t think it specifically says critical thinking but . . . in a performance evaluation.” However, EPublicEdu was more hesitant than the others to point to any specific mechanism for assessment: “I don’t know; I really can’t think of anything.”

**Generational comparison of critical thinking skills—faculty.** With regard to the level of critical thinking found in today’s graduates, results were mixed. F1 claimed no generational difference: “I’d say equal. . . . I’d say they are basically coming equipped at the same level. I don’t think it has changed a whole lot,” while F2 avoided a generational comparison by commenting on accounting students as a whole: “I would say not . . . because I think accounting students . . . they come in with this notion that accounting is mainly procedural . . . and they don’t really give much importance to critical thinking.” F3 began with a qualifying statement—“It’s the amount of material they have to know today versus when I was there is probably significantly more”—

indicating that today's graduates would need higher levels of critical thinking. However, F3 then moved on to say, "I think it's all about just having a little experience . . . the bottom line is, it's experience," indicating that critical thinking cannot be acquired via academic preparation alone. F4 seemed unsure: "Yes, I think so," while F5 thought that graduates do not have high levels of critical thinking: "I am not impressed with most. . . . They don't have . . . a level of preparation."

**Generational comparison of critical thinking skills—employers.** Two themes seemed to emerge around this question. One was an inability to make a definitive comparison between generations regarding ability to think critically, and the other was a focus on the role education plays in preparing graduates for the workplace.

When it came to comparing generational differences in ability to think critically, EProfit1 indicated a dip: "To me, I see a little bit of a decline . . . the ability to articulate from the 5 years before . . . I do think we were pretty good writers," seemingly conflating ability to articulate one's thinking with the ability to think. On the other hand, EProfit2 indicated that making a generational comparison was too broad as abilities and skills are highly individualized. EProfit3 indicated that any difference in critical thinking between generations had more to do with how each group would go about finding resources with which to solve problems: "As far as trying to find a solution to a problem . . . [the incoming hires] might try to find a digital solution to a problem versus an older generation."

EProfit4 felt that any differences in thinking skills were individual rather than generational: "I've seen a mixed bag. I don't think it's generational or a dying thing,

necessarily.” EPublicEdu concurred: “I used to think age mattered; I used to think the older generation had more critical thinking skills, but that’s really not the case.”

With regard to the importance of education, all respondents, with the exception of EPublicEdu, pointed to the significant role played by education in preparing graduates to think critically. For example, EProfit1 saw higher education as addressing the need for teaching students to think critically more so than in years past: “I do think that at least the liberal arts education is trying to do a better job there.” On the other hand, EProfit2 compared personal educational experiences with educational output more recently:

When I was in school . . . it was very academic. . . . There was more of a bigger disconnect between what I learned in school . . . versus being workforce ready. So, sure. In my own experience, I’d have to say they do a better job now.

In a similar vein, EProfit3 spoke to the quality of individual institutions, classes, or curricula in readying students for the workplace:

I think a lot of that has to do with the courses [or institution] . . . as far as not focusing so much on the technical but [classes that instruct students] on being prepared for interviews . . . writing a résumé, how to conduct yourself during interviews, communications class.

In contrast, EProfit4 seemed concerned that increased specialization was creating a trend: “narrowing the broad kind of . . . life, critical thinking that applies across professions. . . . I just see us getting more and more specialized. . . . Whatever that major is, that’s what we’re going [to] do.”

**Instruction or training in critical thinking—faculty.** With regard to providing instruction or training in critical thinking, none of the faculty respondents provided any specific evidence that they engaged in such activities. F1 and F2 seemed to juxtapose

teaching graduates to think critically with assessment. F1 said, “I’ve used the phrase that you’ve taken a logical approach. Sometimes I built that into the scoring sheet.” On the other hand, F2 began by claiming that all activities in the class are designed to elicit critical thinking, stating, “No, it’s overall,” but then went on to equate teaching with assessing critical thinking indirectly: “There is a grade for that, but it’s not called critical thinking, it’s just called cases. The cases do test critical thinking.”

F3 did not mention critical thinking as a goal of instruction but spoke in general terms about job preparation:

What we’re trying to do is training these young people to be able to go out there, develop some skill, go into an entry-level area, and then slowly build and work their way up into a firm where ultimately, hey, they’re the partner.

On the other hand, F4 and F5 did claim to give instruction in critical thinking. F4 provided an example of a specific instructional strategy: “What I do is . . . a lot of problem solving, and . . . I have the student[s] themselves grade . . . while I am going over the problem.” F5 spoke more generally about teaching philosophy rather than specific instructional strategies:

I think that . . . everything I do . . . deals with critical thinking skills. . . . I take them [students] beyond the textbook to the next level, and they appreciate that. . . . I think that I raise issues that are more complex than the problem or the question . . . in a desire to strengthen and develop critical thinking skills.

**Instruction or training in critical thinking—employers.** EProfit1 described three different types of feedback or reward mechanisms to acknowledge “creative” work: “project feedback process,” “semiannual formal evaluation,” and “a perk program, which is an employee recognition coupon program.” However, there was no indication that the

feedback or the perks were specifically tied to critical thinking on the part of the employees. On the other hand, EProfit2 obliquely linked critical thinking to competency in communication and described a company workshop as an attempt to teach critical thinking as a form of information literacy:

We brought in specialists to teach us how to communicate more effectively. . . . We even submitted some of our own e-mails . . . and talked about what could be improved with it. . . . I think the same skill set applies if you're going to communicate clearly and effectively as if you are going to take pieces of information and try to make them fit together.

EProfit3 felt that experience trumped all other forms of acquiring critical thinking skills while indicating that there were some indirect means of training employees: “Yeah, [we provide] a lot of opportunities [for employees] to solve problems and kind of work through things on [their] own, and there's certainly a willingness to develop a personal road and . . . [not a] lot of micromanagement.” Similarly, EProfit4 indicated that while the company might not explicitly highlight critical thinking in its training, it was certainly a desired outcome, in the form of better “judgment”: “I think that every training that we do, whether it's an actual class or whether it's on-the-job training, one-on-one with people, is trying to develop that judgment, which I think critical thinking is a major part of that.” On the other hand, EPublicEdu was quite definite that the company did not provide any form of training to improve the critical thinking skills of its employees, stating simply, “No.”

Table 11 provides a comparative summary of primary and secondary themes that emerged from both sets of respondents. Once again, frequency of occurrence is listed by category of respondent, faculty or employer, and then totaled. Consensus between both



groups was defined as more than three respondents in total agreeing on a specific theme, and the themes for which consensus was achieved are highlighted for easier visibility.

Table 11

*Comparative Summary of Findings for Contradictions in the Literature*

Primary theme	Secondary theme	Frequency		
		F	E	Total
Method of assessing critical thinking	Examples of performance evaluations used to assess critical thinking	0	1	1
	Examples of <i>specific</i> criteria/approaches used to assess critical thinking	1	3	<b>4</b>
	No specific mechanism for evaluating critical thinking	4	1	<b>5</b>
Instruction/training in critical thinking	Examples of training for developing critical thinking skills	0	2	2
	Examples of instructional approaches to developing critical thinking skills	2	1	3
	No <i>specific</i> strategy for developing critical thinking skills	3	2	<b>5</b>
Generational comparison of critical thinking skills	Present generation of hires have <i>better</i> critical thinking skills than previous generations	0	1	1
	Present generation of hires <i>as able to think</i> critically as previous generations	2	0	2
	Present generation of hires have <i>worse</i> critical thinking skills than previous generations	2	1	3
	No generalization possible or depends on level of experience	1	3	<b>4</b>

*Note.* Frequencies that indicate consensus among both groups are in boldface. F = faculty; E = employer.

In the case of how faculty and employers assessed critical thinking skills, there was some clustering around the secondary themes of specific examples of assessment

methods, with a higher frequency of employers reporting this theme, and no specific mechanism for evaluating, with a higher frequency of faculty reporting this theme. There was some agreement in relation to the primary theme of instruction/training in critical thinking in that more respondents reported not having any specific approaches to providing such instruction or training. Finally, under the primary theme of generational comparison of critical thinking skills, there was slight agreement that a comparison was not really possible, with a higher frequency of employers reporting this secondary theme.

### **Faculty's Operational Assessment of Critical Thinking**

F1 contrasted preferred student *dispositions* “to be reflective, to be patient, to have a broad perspective” and *abilities* “to be logical . . . to think through the problem . . . to figure out what data is relevant” with their actual *behavior* in class:

[Students would rather] only answer what you tell [them] . . . A lot of times, students are much more comfortable with just coming up with an answer, and they want to know, “Is this what you are looking for?” I tell them, “What do you think makes sense?” . . . They have trouble with the concept of making assumptions.

Similarly, F2 described preferred *behaviors* and *abilities* such as the following:

They should look at things skeptically . . . also that they should be able to understand the concepts behind whatever case or situation they're dealing with and be able to identify those from the surface going to the deeper concepts. . . . Skills[:] . . . they should be able to identify . . . what are the different issues that are involved, what are the alternatives, and then what are the concepts behind the alternatives, and choose whichever one.

F3 spoke about the importance of acquiring basic *knowledge*: “The first thing I'd be doing is having these kids have a bookkeeping class to start off with” in order to be able to think critically in specific accounting classes. F3 explained, “The reason for the

bookkeeping is to give them a better understanding of debits and credits and basic journal entries. . . . That would help them understand the basics so . . . they have a good feel for what the material's all about.”

F4 made a comparison between life skills and the ability to think critically in terms of the ideal *dispositions* and *behaviors* any accountant should possess:

In accounting, it's life . . . everything you do, you have to make a decision. If you apply that, I think it will help you tremendously in your critical thinking. . . . That's how I think an accountant should think about life and just apply critical thinking for their life.

F5 seemed to concur with F4 by providing a hypothetical example of a problem students might encounter in class and then listing what types of *dispositions* and *behaviors* students should display while attempting to solve it:

I ask you to compute the amount of income taxes. . . . Critical thinking would involve students [saying], “I can compute what the rate is and apply it to the next period.” . . . I don't have to take [students] by the hand and say, “Do this and do this here so.

Overall, almost all faculty respondents, while differing on the observable specifics, did seem to agree that critical thinking was most apparent in students' abilities, dispositions, and behaviors. Only one respondent mentioned knowledge acquisition as a key requisite for thinking critically in a specific domain or context.

### **Employers' Operational Assessment of Critical Thinking**

EProfit1 spoke to *abilities*:

[It is important] to be able to take in data, other information and . . . synthesize it . . . and be able to look at the whole picture and make a decision . . . using professional judgment, [which is] just applying standards, applying the principles

that you know, and then looking at a situation and determining if it follows that standard.

EProfit1 also spoke to *dispositions*: “We’ll ask, ‘What do you typically do when you are faced with an issue or a problem? Do you gather facts? Do you try to understand? What do you do to react to [the issue]?’” However, EProfit1 highlighted a specific ability, listening, not mentioned by the other respondents. EProfit1 linked the ability to listen closely to the need for understanding the *domain* or *context* within which an accounting decision needs to be made:

You need to sit down and talk with the owner, or talk with the controller, and understand how they’re doing things. . . . You’ve got to sit and listen and really listen and understand, and then be able to comprehend or understand what they said to you and be able to articulate it and really understand it.

EProfit2 also talked about *abilities* in “someone who can take the information . . . organize it, put it into whatever format we’re looking for” and the *behavior* of transferring this ability to a different *context*: “But once they’re shown it, they’re able to assimilate what they’ve learned from one job and apply it to another.” EProfit3 concurred with a similar focus on *abilities* within a specific *domain* or *context*:

It’s up to us to figure out a solution . . . within the framework of the rules of the IRS . . . where they[clients] could reduce this number that they eventually have to pay. It’s up to us to do the research and figure out how to legally reduce their taxes.

Like the previous respondents, EProfit4 also spoke of *behaviors*: “really trying to understand why we do things a certain way, and asking, ‘Well, what if we did it this way, would we get a different result?’”; *domain* or *context*: “specifically in process-driven things”; and *abilities*: “when you hear something from somebody, not just always taking

it at face value [but] really kind of judging.” On the other hand, EPublicEdu seemed to put heavier emphasis on *dispositions* and *behaviors*:

You’re not just blindly doing a task. You’re asking why, how does it fit, where does it, how does it fit into the bigger picture? . . . And if something seemed off, I would want them to be able to think about what they’re doing, know that they can ask questions when it didn’t fit or it didn’t seem right rather than just blindly [doing something].

Table 12 provides a comparative summary of primary and secondary themes that emerged from both sets of respondents. As before, frequency of occurrence is listed by category of respondent, faculty or employer, and then totaled.

While neither group of respondents reported specific observations of critical thinking in either students or employees, they provided a list of preferred behaviors, dispositions, and abilities that would point to critical thinking. However, there was no significant overlap in how each group described these specific behaviors, dispositions, or abilities.

### **Emergent Themes and the Research Question**

To sum up what the data yielded, it is helpful to revisit the concepts in the study’s research question: What differences exist in the conceptualization and operational assessment of critical thinking between those who teach accounting and those who seek to employ accounting majors? Therefore, the primary focus was to tease out potential areas of disagreement within and between the two participant groups in how critical thinking was understood or defined and how it was assessed.

Table 12

*Comparative Summary of Findings for Operational Assessment of Critical Thinking*

Primary theme	Secondary theme	Frequency		
		F	E	Total
<i>Observed</i> use of knowledge, data, or information		0	0	0
General description of using knowledge, data, or information	Determine relevancy	1	2	3
	Organization	0	1	1
	Comprehension	0	1	1
	Application	2	0	2
	Foundational knowledge	2	0	2
	Gathering data or information	0	1	1
<i>Observed</i> disposition to think critically	Asking relevant questions	0	0	0
General description of being disposed to think critically	Look at things skeptically	1	0	1
	Take a broad perspective	1	1	2
	Asking relevant questions	1	1	2
<i>Observed</i> behavior of critical thinking		0	0	0
General description of behaviors associated with thinking critically	To be reflective	1	0	1
	To be logical	1	0	1
	To conceptualize	0	1	1
	To identify	1	0	1
	To make life decisions	1	0	1
	To think independently	1	0	1
	To cross apply behavior or information	0	3	3
	To synthesize	0	1	1
	Active listening	0	1	1
	To problem solve	0	0	0

Note. F = faculty; E = employer.

### **Themes Relating to Conceptualization of Critical Thinking**

Overall, although intergroup consensus was not marked, faculty seemed to link critical thinking to effective problem solving, while employers seemed to link it to effective information literacy regardless of context. To put this difference in perspective, it is helpful to revisit relevant themes that emerged from the literature and were used to guide aspects of the methodology (question design and coding) and the analysis (comparison of themes in the data with themes found in the literature).

Specifically, Table 13 contrasts the degree of variability in how business education respondents conceptualized critical thinking with Lai's (2011) synthesis of scholarly conceptualization of critical thinking. While scholars were in broad agreement regarding secondary themes arising from the primary themes of abilities, dispositions, and knowledge, they disagreed with regard to the role of domain-specific knowledge as a determinant of whether skills can be transferred, taught, or assessed between domains. On the other hand, faculty and employers in this study did not seem to agree with any marked frequency regarding the secondary themes arising from each of the primary themes. In fact, some of the secondary themes arising from the respondents were simply not found within the literature (e.g., gut feeling, skepticism, or working or thinking independently).

Therefore, when asked the question, "What comes to mind when you hear the phrase 'critical thinking'?" faculty seemed to define critical thinking as the ability to problem solve, albeit with some lack of agreement over what abilities or dispositions are

Table 13

*Contrastive Summary of Findings for Conceptualization of Critical Thinking*

Primary theme	Secondary theme	Frequency			Lai (2011)	
		F	E	Total	Scholarly agreement	Scholarly disagreement
Ability	To make decisions	2	1	<b>3</b>	✓	Whether or not skills can be transferred across domain-specific background knowledge contexts
	To implement	1	0	1		
	To synthesize	0	1	1	✓	
	To be logical/objective	0	2	2	✓	
	To articulate	1	1	2	✓	
	To identify/conceptualize	2	2	<b>4</b>	✓	
	To analyze/evaluate	2	2	<b>4</b>	✓	
	To problem solve	3	2	<b>5</b>	✓	
Disposition	Skepticism	1	0	1		Level of importance to be given to dispositions
	Using sound judgment	0	2	2		
	Gut feeling	0	1	1		
	Asking relevant questions	0	1	1	✓	
	Working or thinking independently	0	2	2	✓	
	Thinking outside the box	1	0	1	✓	
	Knowledge, information, or data	Organize	0	1	1	
Gathering		1	1	2		
Relevance to context		0	2	2		
Application		1	2	<b>3</b>	The importance of domain-specific background knowledge to think critically about	

*Note.* Frequencies that indicate consensus among both groups are in boldface. F = faculty; E = employer.

most important in becoming an able problem solver. On the other hand, employers seemed to define critical thinking as effective information processing in various contexts.

However, the differences within this group regarding the abilities or dispositions



constituting effective information processing were even more pronounced. Even with some consensus on secondary themes relating to ability, there still appeared to be no clear consensus, either within or between the two groups, with regard to a *specific, measurable* conceptualization of critical thinking.

These findings stand in contrast with Lai's (2011) assertion that scholars, while in disagreement about issues related to skills transference and the teaching of critical thinking, nevertheless agreed on the broad primary and secondary themes underlying how critical thinking should be defined. On the other hand, the findings stand in agreement with the general theme emerging from the literature, namely a lack of consensus on the measurable specifics of how one recognizes critical thinking.

### **Themes Relating to Assessment of Critical Thinking**

The one area of agreement that stood out across and within both groups regarding assessment was the admission of not having any specific mechanism for assessing critical thinking. Similarly, there was a slight agreement between employers and faculty that critical thinking could be evidenced by an ability to cross apply skills between knowledge contexts. Differences in how each stakeholder group evidenced critical thinking in action revolved around faculty favoring deep engagement with class materials and employers looking at a hire's overall abilities, dispositions, and behaviors, such as the ability to work independently and show judgment during task completion. Overall, when pressed for specific examples of critical thinking in action, both groups either had trouble coming up with such examples or could only offer a specific employee/student scenario as

supporting evidence. Nevertheless, employers seemed to have a slight edge on the number of specific examples they could offer regarding observed critical thinking in the workplace. Table 14 indicates how both groups responded to questions about assessing critical thinking in the workplace or the classroom. Any areas of consensus, where more than three respondents agreed on a theme, are highlighted in the Total column. The lack of identifiable methods of assessment, or confusion regarding what is to be assessed, was in keeping with similar issues both groups had with the conceptualization of critical thinking.

Only one faculty respondent argued that students' written assignments could be used to assess their ability to think critically. Similarly, while some employers complained about a lack of writing skills, they gave no indication of using writing as a means of assessing critical thinking.

### **Summary**

Overall, results of the interviews indicated that neither employers nor faculty seem overly certain as to what specifically constitutes critical thinking. More importantly, neither group seems to have specific instruments for assessing these skills or specific methods for teaching them. In fact, the findings did not even indicate any significant consensus within the employer group or between both groups that there was indeed a lack of critical thinking skills. Based on Table 15, both groups somewhat agreed that it was not possible to make any generalizations about how satisfied they were with the critical thinking skills of new hires/students, and only one employer tied critical

Table 14

*Comparative Overview of Responses to Assessment of Critical Thinking*

Primary theme	Secondary theme	Frequency		
		F	E	Total
<b>Critical thinking in action</b>				
Demonstrated ability to think critically ( <i>operational assessment</i> )	Deeper understanding/application of class material (evidenced in writing)	1	0	1
	Ability to cross apply skills to different contexts	1	1	2
	Disposition to respond to/ask probing questions, to learn new things, to work independently	0	2	2
	Good communication skills	1	0	1
	Ability to land a job	1	0	1
	Ability to utilize technology to solve problems	0	1	1
	Knowledge/experience about how certain things should be done	0	1	1
	<i>Observed</i> use of knowledge, data, or information		0	0
<i>Observed</i> disposition to think critically	Asking relevant questions	0	0	0
<i>Observed</i> behavior of critical thinking		0	0	0
Demonstrated inability to think critically ( <i>negative operational assessment</i> )	Cut-and-paste plagiarism of class material	1	0	1
	Lack of communication skills	1	0	1
	Inability to land a job	1	0	1
	Lacking the disposition to respond to/ask probing questions, to learn new things, to work independently	1	3	<b>4</b>
Assessment methods	Examples of performance evaluations used to assess critical thinking	0	1	1
	Examples of <i>specific</i> criteria/approaches used to assess critical thinking	1	3	<b>4</b>
	No specific mechanism for evaluating critical thinking	4	1	<b>5</b>

*Note.* Frequencies that indicate consensus among both groups are in boldface. F = faculty; E = employer.

Table 15

*Partial Synthesis of Findings for Satisfaction With Critical Thinking Abilities*

Primary theme	Secondary theme	Frequency		
		F	E	Total
Satisfaction with level of critical thinking <i>in new hires/students</i>	Skill level depends on prior program of study/work experience	2	2	<b>4</b>
	No generalization possible	3	3	<b>6</b>
	Satisfied/ <i>somewhat</i> satisfied with level of critical thinking	1	3	<b>4</b>
	Critical thinking skills <i>decreased</i>	1	0	1
Preexisting ability or disposition to think critically	Depends on program of study/work experience	1	1	2
	Depends on the individual's disposition	2	1	<b>3</b>

*Note.* Frequencies that indicate consensus among both groups are in boldface. F = faculty; E = employer.

thinking ability to a prior program of study. In this case, the program in question had integrated internships with academics so that workplace skills were being learned in the workplace. Finally, there was some agreement (more than three respondents in agreement on a theme, as highlighted in the Total column in Table 15) between both groups that students'/hires' ability to think critically stems from their disposition rather than from a program of study.

Chapter V expands on the results laid out here and places them into the context of the findings emerging from the literature. Chapter V also presents conclusions drawn as to the significance of these findings, study limitations, and suggestions for future directions for further research.

CHAPTER V  
FINDINGS AND CONCLUSIONS

**Purpose and Research Question**

This study sought to identify differences in how accounting faculty and professionals conceptualize and measure critical thinking, in the hope of contributing to the engagement and alignment between management education outcomes and the expectations within the accounting profession. The purpose of this study arose out of a thorough review of the literature surrounding the role of management education in preparing graduates for today's workplace. Studies discussed in the literature review pointed to differences in how various stakeholder groups (e.g., faculty, employers, students) defined the skill sets expected by employers versus what colleges claim to teach. Similarly, management education has been under increasing scrutiny for creating measurable links between what is taught and relevant learning outcomes, given the rising cost of higher education. Further complicating this matter is an overall lack of consensus as to how skills are to be taught, acquired, and measured. Most importantly, little is known as to whether faculty and employers are even in agreement with how critical thinking is defined and assessed. Therefore, to gain some insight into these differences, two groups of business education stakeholders, employers and teachers of accounting graduates, were interviewed in order to understand how they define and assess critical

thinking. The research question underlying this study was, What differences exist in the conceptualization and operational assessment of critical thinking between those who teach accounting and those who seek to employ accounting majors?

### **Review of the Methodology**

This study relied on a qualitative research design chosen to better understand differences in faculty's and employers' perspectives of graduates' critical thinking skills. To narrow the focus of the investigation within management education, a sample of accounting employers and teachers from a variety of Southern California organizations were selected using the snowball sampling technique. Faculty were designated as those with a minimum of 5 years' full-time experience instructing undergraduate and graduate students in private or public Southern California regionally or nationally accredited business programs. Employers were designated as those having occasion to hire and oversee new accounting graduates within the past 5 years in Southern California companies employing 25 or more employees in the case of the for-profit sector and 10 or more employees in the case of the public sector. In the case of the education sector, employers were designated as those having occasion to hire and oversee new business graduates within the past 5 years in Southern California nationally or regionally accredited institutions, including 4-year colleges, community colleges, and public school districts. In total, 10 participants—five accounting faculty members representative of private and public universities and colleges, and five employers of accounting graduates representative of the for-profit, public, and educational sectors—participated in the

interviews consisting of three open-ended questions and lasting approximately 45 minutes.

Interviews were transcribed, and provisional coding was utilized in relation to two distinct concepts contained in the research question: conceptualization and operational assessment of critical thinking. As explained in Chapter IV, these concepts were integrated into the design of the interview questions so that each of the major interview questions aimed to elicit answers relating to one or both of the concepts. Additionally, the follow-up questions in interviews sought to deepen responses to each of the major interview questions and address specific issues arising out of the literature review. Table 16 summarizes the primary and secondary levels of coding and offers a preview of how the findings are discussed.

### **Major Findings**

The findings are discussed in relation to the *conceptualization* and *operational assessment* of critical thinking in the classroom or the workplace.

#### **How Respondents Conceptualized Critical Thinking**

Both groups agreed on the need for critical thinking, citing globalization and technology as twin drivers in terms of increased competition, speed of information processing, knowledge of international accounting principles, and, to a lesser degree, multicultural skills. Nevertheless, it was difficult to find consensus, both within

Table 16

*Levels of Coding*

Overall organization	Primary and secondary themes within levels	Relationship to research question
Level 1: Three major interview questions	<ol style="list-style-type: none"> <li>1. What comes to mind when you hear the phrase “critical thinking”?</li> <li>2. In your experience with recent hires/ students (last 5 years), are you satisfied with their ability to think critically?</li> <li>3. Could you provide a specific example(s) of recent hires/students who demonstrated/failed to demonstrate a high level of critical thinking?</li> </ol>	<p>Sought to elicit how respondents conceptualize critical thinking</p> <p>Sought to elicit how respondents recognized/ assessed critical thinking in action</p> <p>Sought to elicit how respondents assessed critical thinking in action</p>
Level 2: Follow-up questions	<p><i>Issue 1:</i> Changes wrought by globalization and technology, and their impact on the need for critical thinking within the accounting profession</p> <p><i>Issue 2:</i> Inherent contradictions in the literature regarding the following:</p> <ul style="list-style-type: none"> <li>• Employers who claim disappointment with college graduates’ ability to think critically and how they came to this conclusion</li> <li>• Management education’s claims of addressing these shortfalls with a variety of pedagogical approaches</li> <li>• Exit survey results indicating students’ satisfaction with having increased their critical thinking skills during their courses of study</li> </ul> <p><i>Issue 3:</i> Scholarly and professional debate over what constitutes critical thinking, including the following:</p> <ul style="list-style-type: none"> <li>• Abilities (e.g., analyzing)</li> <li>• Dispositions (e.g., flexibility)</li> <li>• The role of domain or context within which critical thinking should be defined and assessed</li> <li>• Knowledge (e.g., domain-specific background information)</li> <li>• Behavior as an indicator of critical thinking (e.g., risk taking)</li> </ul>	<p>Sought to deepen responses to Interview Question 2</p> <p>Sought to deepen responses to all 3 questions in order to highlight areas of agreement/disagreement between respondents and with the literature</p> <p>Sought to deepen responses to all 3 questions, with a primary focus on how respondents conceptualized critical thinking in order to highlight areas of agreement/disagreement between respondents and with the literature.</p>



respondent groups and between them, with regard to what critical thinking is and how it can be recognized. However, faculty appeared to link critical thinking to effective problem solving without being able to identify the specifics of what constituted this ability while employers seemed to link it to effective information literacy regardless of context.

Firstly, the study's findings stand somewhat in contrast to Lai's (2011) findings. That is, while Lai's synthesis of scholarly debate regarding critical thinking highlighted areas of disagreement about issues related to skills transference and the teaching of critical thinking, it also showed agreement on the broad primary themes (ability, disposition, role of background knowledge) and secondary themes (e.g., abilities related to making decisions or synthesizing, or a disposition to work and think independently) underlying how critical thinking should be defined. In contrast, study respondents showed neither within-group nor overall consensus in relation to either primary or secondary themes.

Secondly, the study's lack of consensus affirms the general theme that emerged from the literature: a lack of scholarly and practitioner consensus on the measurable specifics of how critical thinking is defined. Therefore, the significance of this study's findings with regard to how accounting faculty and employers conceptualize critical thinking may be summed up in the words of R. L. Williams (1999): "The . . . literature is replete with references to higher-order cognitive constructs, such as critical thinking and creativity. . . . For these constructs to be maximally useful, they must be transformed into specific operational definitions that lead to reliable and valid assessment strategies"

(p. 411). Aviles (2000) confirmed this with, “Critical thinking has no operational definition” (p. 2).

In fact, these sentiments continue to be echoed in more recent studies. Weissberg (2013) argued that critical thinking has quickly evolved into a scholarly industry without the ability to transform this idea into something that can effectively be mastered by students. Similarly, Riddell (2007) pointed out that for the past 20 years, nursing literature has been replete with calls to teach critical thinking without a recognizable definition of how this skill is to be recognized and no valid measurement tool with which to determine whether it has been acquired. Finally, Iwaoka, Li, and Rhee (2010) conducted a study with food science students and found that generic critical thinking instruments did not yield any useful data regarding the acquisition of critical thinking skills.

### **How Respondents Assessed Critical Thinking**

Consensus regarding assessment of critical thinking revolved around not having a specific mechanism for evaluation. On the other hand, there was a slight agreement between respondent groups that the ability to cross apply skills between knowledge contexts was evidence of critical thinking. In general, faculty saw deep engagement with class materials as critical thinking in action while employers viewed a hire’s overall abilities, dispositions, and behaviors, such as the ability to work independently and show judgment during task completion, as evidence of critical thinking. However, neither group could provide very specific examples of critical thinking in action. For example,

neither group, with the exception of one faculty respondent, indicated that written communication might be used to assess critical thinking skills. This is surprising given that students' class performance is routinely assessed via written work. Overall, the lack of identifiable methods of assessment, or confusion regarding what should be assessed, was in keeping with the lack of consensus surrounding the participants' conceptualization of critical thinking.

Firstly, these findings mirror what emerged from the literature regarding how critical thinking should be taught and assessed, specifically within the accounting profession. According to professional accounting bodies such as the American Institute of Certified Public Accountants (AICPA, 2011), accountants should be competent researchers, analysts, communicators, and problem solvers. They should also be able to interpret knowledge and information in relation to "making sense of a changing and complex world" (AICPA, 2011, p. 5). While the AICPA provided suggestions for classroom activities to train students to think critically, it did not provide specific means of assessing whether these skills have been acquired. Similarly, researchers have pointed to a general confusion within the profession regarding what accounting faculty should teach or assess or what specific skills or attributes employers look for (Abrami et al., 2008; Behar-Horenstein & Niu, 2011; Braun, 2004; Kavanagh & Drennan, 2008; Niu et al., 2013; Paisey & Paisey, 2010; Watson et al., 2003).

Secondly, the fact that respondents did not make use of written work in assessing critical thinking was also in keeping with findings in the literature. That is, while Datar et al. (2010) and Beam (2011) acknowledged the significance of using written

communication as a means of assessing critical thinking, business programs display marked ambivalence with regard to how writing is viewed as a measure of a student's overall performance (Green, 2012; Hill et al., 2011).

### **Limitations of the Study**

As is the nature of exploratory, qualitative studies, the findings of this study are not generalizable to the larger U.S. population of management education stakeholders but might have regional relevance for similar institutions and contexts. Specifically, the study results should not be generalized for the following reasons:

1. The study was confined geographically to faculty and employers within the Southern California region, and so results cannot be generalized to other geographical regions.
2. The purposive or systematic sampling limited the number of participants so that they could not be said to be representative of the larger population of management education stakeholders.
3. The purposive or systematic sampling of stakeholders within the field of accounting further narrowed the focus of the study so that results cannot be generalized to other fields within management education.
4. The cutoff for the number of employees required for participating for-profit companies does not allow for generalization to those small and medium enterprises (SMEs) that might have occasion to hire accounting graduates but did not meet the specifications set for number of employees.

### **Practical and Theoretical Implications**

Chapter I asked the question, Can business education produce a workplace-ready thinker? According to this study's findings and the literature, this question is akin to putting the cart before the horse. As the findings in this study demonstrated, there was no consensus within or between the sampled faculty, sampled business professionals, and scholars in the literature included in this study with regard to how workplace thinking is defined or, more importantly, how it is to be assessed. This is in keeping with findings in the literature where educators are being asked to alter curriculum and teaching approaches in the absence of any specific, measurable learning outcomes desired by employers (Braun, 2004; Kavanagh & Drennan, 2008); studies on the teaching of critical thinking have design or sampling flaws limiting any meaningful interpretation or application of results in the classroom (Behar-Horenstein & Niu, 2011; Watson et al., 2003); barriers exist to the teaching and acquisition of critical thinking (Broadbear, 2003; Landsman & Gorski, 2007; Lundquist, 1999; Rippen et al., 2002; Snyder & Snyder, 2008); and it is doubtful that soft skills such as critical thinking effectively transfer across different contexts (Dierdorff et al., 2010; Halpern, 1998; Knowles et al., 2012; Lim et al., 2009; van Merriënboer et al., 2002). As such, it is not entirely clear how management education stakeholders determine whether graduates are able to think critically, which in turn throws into question almost 20 years of commentary in the literature lamenting the absence of such skills in new hires. That is, if employers are unable to define the skills they seek, how do they know that new hires lack them?

### Directions for Future Research

A number of opportunities exist for future studies to build on the findings of this study.

#### Obtaining Quantitative Feedback From a Larger Employer Pool

As a first step, it would be helpful to create a more effective survey instrument, designed around the AICPA (n.d.-a) Core Competency Framework, in order to determine how a much larger pool of accounting employers conceptualize the cognitive skills they would like to see in an *ideal* new hire. Of special interest would be to see whether employers make major distinctions between critical thinking skills and their application in problem solving, decision making, and other professional contexts.

As mentioned in Chapter II, the Core Competency Framework focuses on technical and cognitive skills rather than subject or content areas in accounting (AICPA, n.d.-a). As such, the framework serves as a useful structure from which to build a survey. In fact, AICPA (n.d.-a) believes that the framework's focus on skills ensures that identified core competencies will stand the test of time regardless of changes in the profession or career choices of practitioners. Of particular note here is that many of these competencies seem to relate well to the abilities, dispositions, and behaviors associated with critical thinking definitions emerging from the literature and are seen as transferrable across domains or contexts. However, rather than staying with definitional terminology emerging from academic disciplines, input from discipline-specific

professional bodies and the employers themselves might provide educators with a better set of learning outcomes to incorporate in their design of classroom activities.

While such studies are already being conducted, problems with consensus continue to hamper results. For example, Liu, Frankel, and Roohr (2014) found that most attempts at surveying various educational stakeholders for their definitions of critical thinking took a multi-instrument approach. They found that comparability between instruments was missing and that the studies provided “insufficient evidence of distinct dimensionality, unreliable subscores . . . and unclear evidence of differential validity across groups of test takers” (Liu et al., 2014, p. 8). Liu et al. also compared the efficacy of multiple-choice instruments with constructed-response items, where the former is more cost effective to score while the latter creates more authentic contexts. They concurred with other researchers that studies should utilize a mixed-item approach in critical thinking assessments. Finally, Liu et al. also found that study results were plagued by the question of generalizability of critical thinking skills across domains and contexts with no resolution as to whether this was a function of differences in knowledge or differences in the nature of the skills required in different contexts (e.g., critical thinking in nursing versus in engineering).

### **Developing a Pedagogical Model**

A theme emerging from the literature was a lack of consensus about how critical thinking should be taught and assessed in the classroom. Therefore, in an ongoing effort to develop effective pedagogical models that would yield learning outcomes relevant to

employer needs, the following are some of the areas where further research would be merited.

**How critical thinking should be conceptualized in class.** Based on the findings from the survey by Liu et al. (2014), it would be useful to review the literature on adult learning theory and the AICPA framework in order to determine best practices to facilitate relevant skills acquisition, enable skills transfer, and identify the limitations of what can actually be achieved in the classroom in relation to the individual learners' abilities and dispositions. Overall, there should be a focus on distinguishing between what is innate to the students (e.g., intelligence or general reasoning), what can be learned in the classroom, and what must be acquired via experience.

Once the abovementioned studies have been conducted, it would also be useful to study existing literature for models that have been proposed, created, applied, and assessed (in relation to the teaching, acquisition, application, transfer, and assessment of relevant cognitive skills) in other professional contexts. One element to look for is how often critical thinking is defined as a standalone concept, as was the case in the literature surveyed for this study. For example, it would be useful to identify contexts where critical thinking is distinguished from decision making or problem solving (AICPA, n.d.-a; Datar et al., 2010). Another element to look for is how often critical thinking is seen as part of a continuum or cluster of higher order thinking skills. For example, Sieck (2016) argued that "critical thinking seems most useful when it aids other cognitive processes, such as applying critical thinking in decision making" (para. 1).



In fact, in a paper written for the Naval War College, Usry (2004) defined the *purpose* of critical thinking as converting “brainpower into combat power” (p. 2) in two stages: (a) thinking about thinking and (b) evaluating the results of that thinking, regardless of whether the decision-making outcome was negative or positive. Included in this definition was the idea of utilizing critical thinking as a means of increasing the probability of success in decision-making and problem-solving contexts (Usry, 2004). Similarly, while G. F. Smith (2003) did distinguish critical thinking from other cognitive skills such as decision making and problem solving, he posited that business students must have a well-rounded set of cognitive skills (e.g., creativity, negotiation, inquiry) in order to become *effective* thinkers.

**How critical thinking should be assessed in class and the workplace.** Another area in need of further investigation is best practices for effective assessment of relevant cognitive skills. Knowles et al. (2012) argued that the traditional role of teacher should transition toward becoming more of a facilitator. For example, teachers should move away from lecturing to facilitating discussion or giving up direct control of the class activities in favor of allowing the students a more active role in how class time and activities unfold. This raises questions about whether critical thinking is impacted by student- versus instructor-centered approaches to teaching and whether differences in teaching approach would require different approaches to assessing critical thinking in business classrooms if a facilitation-centered teaching style were applied. It would also be helpful to begin by surveying employers on how critical thinking should be assessed before moving on to examining assessment in the classroom.

**Leveraging computer-based instruction (CBI).** A related area that is poorly understood is the effective use of CBI or online learning in relation to the changing role of the teacher. Both employers and faculty in this study linked a need for critical thinking skills to advances in technology. However, Knowles et al. (2012) pointed to a lack of a theoretical framework for the application of CBI. They argued, “Further compounding the problem is the fact that much of the research that has been conducted has focused on CBI implementation in educational settings, not with adult learners such as would be found in work settings” (Knowles et al., 2012, p. 302). There is, therefore, a need for empirical studies to determine the most effective approaches for teaching critical thinking skills when using CBI or online learning. Again, it would be useful to survey accountants in the field to see whether and how CBI or online learning is used in training settings and how effective it is before studying its use in the educational setting.

### **Understanding and Facilitating Relevant Skills Transfer**

Finally, within management education, it would be helpful to gain a deeper understanding of skills transfer so that students are made aware of their role in effectively transferring skills across different contexts, both from class to class and from academia to the workplace. Knowles et al. (2012) highlighted significant findings in adult learning literature that apply here: “What adults learn on their own initiative, they learn more deeply and permanently than what they learn by being taught” (p. 271). As such, these authors argued for the use of learning contracts to clarify the learning roles when

considering the adult learner's need to be self-directing, the teacher or facilitator's style, and desired outcomes.

A useful approach to designing a pedagogical model focused on skills transfer may be found in Billing's (2007) survey of cognitive science literature regarding transferability of problem-solving skills. Billing found that cognitive skills related to solving problems are transferable under specific conditions related to the methods and environment in which such skills are acquired. Survey findings indicated that the learning of principles and concepts could result in transfer to dissimilar problems (across application contexts) because it aided in creating flexible mental representations. Additionally, teaching general principles of reasoning together with self-monitoring practices in a variety of contexts could also aid in transfer. However, reasoning and critical thinking skills were only found to be acquired successfully when abstract principles were coupled with examples featuring application (Billing, 2007).

Ultimately, Billing (2007) found that the goal of learning was to become a practiced user of metacognitive strategies. This would seem more in keeping with what is set forth in the AICPA (n.d.-a) framework and what is emerging in professional literature across industry sectors. It could also explain the overall confusion in management literature and in this study's findings regarding the failure of respondents to pin critical thinking skills down to narrow definitions emerging from disciplines not directly related to the need for and the application of metacognitive skills in the modern workplace.

### **A Proposed Conceptualization of Critical Thinking**

According to Leiber (2016), enrollment in management education's flagship program, the Master of Business Administration (MBA), has dropped 11% since 2009. To make up the difference, schools have been aggressively wooing foreign students or creating specialty offshoots such as masters in marketing, accounting, or nonprofit management. While some, like the president of the Association to Advance Collegiate Schools of Business (AACSB; a global association accrediting business schools), believe the MBA will live on, others take a much darker view. For example, Roger Martin (as cited in Leiber, 2016), former dean of the University of Toronto's Rotman School of Management, believes that MBA education is in the twilight years of its 108-year history. He believes that fully 50% of U.S. business schools may cease operating in the next 10-15 years because they will not have "enough enrollment to support their 'very bloated' cost structures" (as cited in Leiber, 2016, para. 4).

Doom-and-gloom predictions are not limited to management education. Both Godin (2010) and Kamenetz (2010) predicted a hard landing to what has been an illustrious 400-year higher education history due to spiraling costs not reflected in concomitant wage increases and a lack of correlation between having a degree and becoming successful in an increasingly tenuous economy. Therefore, if management education is to retain its relevance, it must rapidly adapt. However, this requires taking a look at the long-term, bigger picture of what must now become a continually evolving role in educating the business professionals of tomorrow.

One area of agreement between the literature and the study's respondents was that a complex, rapidly changing world requires tomorrow's management cadre to be well equipped with higher order cognitive skills such as critical thinking. Given the confusion surrounding defining and assessing such a skill, a question arises as to whether this confusion might not be a function of placing too much emphasis on separating various cognitive skills into standalone categories while attempting to teach and assess them separately from one another. If the ultimate goal of higher education is to produce more effective thinkers, regardless of context, then revisiting the possibly outdated notion that cognitive skills can be infinitely split apart may be a good starting point.

Therefore, based on what the researcher discovered through the literature and interviews, a working definition of critical thinking is proposed, extending it beyond a loose collection of abilities, dispositions, and behaviors, toward a more dynamic, interactive strategy aimed at eliminating the faulty thinking (e.g., all-or-nothing thinking, overgeneralizing, preconceived notions, biased thinking) common to all humans. It is proposed that critical thinking be understood as a purpose-driven, strategic, cognitive process involving reasoning (thinking systematically about ideas, knowledge, concepts), reflection, and metacognition (evaluation of one's thinking process) in complex decision-making and problem-solving contexts aimed at achieving a desired or necessary outcome. The rigor of this process is determined by the context in which it is applied. That is, when employing the critical thinking process under time constraints, such as during a crisis, the critical thinking process, while still purpose driven, may not allow for deep reasoning or reflection and metacognition. In that case, prior practice with critical

thinking will hopefully allow for the use of well-constructed memories and narratives, which, having been sufficiently reflected on, yield reasonable shortcuts to making effective decisions in an ongoing crisis. Using this definition, the researcher proposes that further research, as discussed above, be done to determine best practices with regard to teaching and assessing effective application of this process, including examining programs that consistently achieve this outcome.

### **Conclusion**

The literature indicated that globalization and technology were twin forces exerting a considerable influence on the critical thinking skills future accountants would require for optimal performance in an uncertain economic environment that would throw new and unfamiliar problems their way. This study's findings echoed that sentiment in one of the few areas of within-group and between-group consensus between participants. Both faculty and employers agreed that increased competition, speed of information processing, a changing economic environment, and advances in technology would require higher levels of critical thinking from future accounting graduates. However, there was no comparable consensus, either in this study's findings or within the literature, as to what constitutes recognizable critical thinking, how it should be taught, or how it can be assessed.

While at first glance this study's findings might seem inconclusive, they highlight an urgent need for more targeted research in lieu of the experimental approach to "fixing" management education that emerges from the literature. This study also showed a need

for closer collaboration, both within and between stakeholder groups, if research is to be effectively conducted and applied to bridge the gap between classroom learning and workplace application. In fact, in a rapidly changing world, management education cannot continue to arbitrarily tweak course offerings in an effort to remain relevant. A significant focus on critical thinking, exploring if and how it can be taught and assessed in business schools while aligning with employer needs, might strengthen the contribution and viability of business degrees.

## REFERENCES



## REFERENCES

- Abrami, P. C., Bernard, R. M., Borokhovski, E., Wade, A., Surkes, M. A., Tamim, R., & Zhang, D. (2008). Instructional interventions affecting critical thinking skills and dispositions: A Stage 1 meta-analysis. *Review of Educational Research*, 78, 1102-1134. <https://doi.org/10.3102/0034654308326084>
- Accounting. (2010). In *A dictionary of accounting* (4th ed.). New York, NY: Oxford University Press. Retrieved from <http://www.oxfordreference.com/view/10.1093/acref/9780199563050.001.0001/acref-9780199563050-e-41?rskey=3N8KpF&result=46>
- Accounting Education Change Commission. (1990). *Objectives of education for accountants* (Position Statement No. 1). Retrieved from <http://www2.aaahq.org/aecc/pdf/position/pos1.pdf>
- Albrecht, W. S., & Sack, R. J. (2000). *Accounting Education Series: Vol. 16. Accounting education: Charting the course through a perilous future*. Sarasota, FL: American Accounting Association.
- Alexander, P. A., Schallert, D. L., & Reynolds, R. E. (2009). What is learning anyway? A topographical perspective considered. *Educational Psychologist*, 44, 176-192. <https://doi.org/10.1080/00461520903029006>
- Altman, D. (2006, February 7). Managing globalization: If it's here to stay, what do we do now? *New York Times*. Retrieved from [http://www.nytimes.com/2006/02/07/business/worldbusiness/07iht-glob08.html?pagewanted=all&\\_r=0](http://www.nytimes.com/2006/02/07/business/worldbusiness/07iht-glob08.html?pagewanted=all&_r=0)
- American Association of Community Colleges. (2017). College-industry partnerships. Retrieved from <http://www.aacc.nche.edu/AboutCC/Lists/CollegeIndustry%20Partnerships/AllItems.aspx>
- American Institute of Certified Public Accountants. (n.d.-a). Core competency framework. Retrieved from <https://www.aicpa.org/InterestAreas/AccountingEducation/Resources/Pages/CoreCompetency.aspx>
- American Institute of Certified Public Accountants. (n.d.-b). The uniform CPA examination. Retrieved from <http://www.aicpa.org/BecomeACPA/CPAExam/Pages/CPAExam.aspx>

- American Institute of Certified Public Accountants. (2000). *The CPA vision: Gaining momentum: 1999-2000 annual report*. Retrieved from <https://www.aicpa.org/About/AnnualReports/DownloadableDocuments/AICPA-1999-2000-Annual-Report.pdf>
- American Institute of Certified Public Accountants. (2011). *CPA Horizons 2025 report*. Retrieved from <http://www.aicpa.org/Research/CPAHorizons2025/DownloadableDocuments/cpa-horizons-report-web.pdf>
- Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). *A taxonomy for learning teaching and assessing: A revision of Bloom's taxonomy of educational objectives*. New York, NY: Longman.
- Appadurai, A. (1996). *Modernity at large: Cultural dimensions of globalization*. Minneapolis: University of Minnesota Press.
- Appadurai, A. (2000). Disjuncture and difference in the global cultural economy. In F. J. Lechner & J. Boli (Eds.), *The globalization reader* (pp. 322-330). Malden, MA: Blackwell.
- Arthur Andersen & Co., Arthur Young, Coopers & Lybrand, Deloitte Haskins & Sells, Ernst & Whinney, Peat Marwick Main & Co., . . . Touche Ross. (1989). *Perspectives on education: Capabilities for success in the accounting profession*. New York, NY: Authors.
- Association to Advance Collegiate Schools of Business International Globalization of Management Education Task Force. (2011). *Globalization of management education: Changing international structures, adaptive strategies, and the impact on institutions*. Tampa, FL: AACSB International.
- Atasoy, H. (2013). The effects of broadband Internet expansion on labor market outcomes. *Industrial & Labor Relations Review*, 66(2), 315-345.
- Aviles, C. B. (2000). *Teaching and testing for critical thinking with Bloom's taxonomy of educational objectives*. Retrieved from ERIC database. (ED446023)
- Bailin, S. (2002). Critical thinking and science education. *Science & Education*, 11(4), 361-375. Retrieved from <http://www.elainegalvin.ie/wp-content/uploads/2014/09/critical-thinking-and-science-education.pdf>
- Bailin, S., Case, R., Coombs, J. R., & Daniels, L. B. (1999). Conceptualizing critical thinking. *Journal of Curriculum Studies*, 31(3), 285-302. <https://doi.org/10.1080/002202799183133>

- Baldwin, T. T., & Ford, J. K. (1988). Transfer of training: A review and directions for future research. *Personnel Psychology*, 41(1), 63-105.
- Banning, M. (2006). Nursing research: Perspectives on critical thinking. *British Journal of Nursing*, 15, 458-461. <https://doi.org/10.12968/bjon.2006.15.8.20966>
- Baril, C. P., Cunningham, B. M., Fordham, D. R., Gardner, R. L., & Wolcott, S. K. (1998). Critical thinking in the public accounting profession: Aptitudes and attitudes. *Journal of Accounting Education*, 16(3), 381-406.
- Barlas, S., Verschoor, C., Williams, K., & Randall, R. (2003). Globalization job loss? *Strategic Finance*, 85(1), 19.
- Bartlett, J. E. (2002). Analysis of motivational orientation and learning strategies in high school business students. *Business Education Forum*, 56(4), 18-23.
- Bastin, H., & Kalist, D. (2013). The labor market returns to AACSB accreditation. *Journal of Labor Research*, 34(2), 170-179. <https://doi.org/10.1007/s12122-012-9155-8>
- Baum, F. (2000). *The new public health*. Oxford, United Kingdom: Oxford University Press.
- Baumgartel, H. J., Reynolds, M. J. I., & Pathan, R. Z. (1984). How personality and organisational climate variables moderate the effectiveness of management development programmes: A review and some recent research findings. *Management and Labour Studies*, 9(1), 1-16.
- Beam, J. C. (2011). *Engaging ideas: The professor's guide to integrating writing, critical thinking, and active learning in the classroom* (2nd ed.). San Francisco, CA: Jossey-Bass.
- Beaverstock, J. V. (2012). Highly skilled international labour migration and world cities: Expatriates, executives and entrepreneurs. In B. Derruder, M. Hoyler, P. J. Taylor, & F. Witlox (Eds.), *International handbook of globalisation and world cities* (pp. 240-249). Cheltenham, United Kingdom: Edward Elgar.
- Bedford, N., Bartholomew, E. E., Bowsher, C. A., Brown, A. L., Davidson, S., Horngren, C. T., . . . Wheeler, J. T. (1986). Special Report: Future accounting education: Preparing for the expanding profession. *Issues in Accounting Education*, 1(1), 168.
- Behar-Horenstein, L., & Niu, L. (2011). Teaching critical thinking skills in higher education: A review of the literature. *Journal of College Teaching and Learning*, 8(2), 25-41.

- Bennis, W. G., & O'Toole, J. (2005). How business schools lost their way. *Harvard Business Review*, 83(5), 96-104.
- Biernacki, P., & Waldorf, D. (1981). Snowball sampling: Problems and techniques of chain referral sampling. *Sociological Methods and Research*, 10, 141-163.
- Billing, D. (2007). Teaching for transfer of core/key skills in higher education: Cognitive skills. *Higher Education*, 53(4), 483-516. <https://doi.org/10.1007/s10734-005-5628-5>
- Big 4. (2017). Big 8 accounting firms. Retrieved from <https://big4accountingfirms.com/big-8-accounting-firms/>
- Bizzell, P., & Herzberg, B. (Eds.). (1990). *The rhetorical tradition: Readings from classical times to the present*. Boston, MA: Bedford Books of St. Martin's Press.
- Bjork, R. A. (1994). Memory and metamemory considerations in the training of human beings. In J. Metcalfe & A. Shimamura (Eds.), *Metacognition: Knowing about knowing* (pp. 85-205). Cambridge, MA: MIT Press.
- Black, D. A., & Smith, J. A. (2004). How robust is the evidence on the effects of college quality? Evidence from matching. *Journal of Econometrics*, 121(1-2), 99-124. <http://doi.org/10.1016/j.jeconom.2003.10.006>
- Bloom, B. S. (1994). Reflections on the development and use of the taxonomy. In L. W. Anderson & L. A. Sosniak (Eds.), *Bloom's taxonomy: A forty-year retrospective* (pp. 1-8). Chicago, IL: The University of Chicago Press.
- Bloom, B. S., Engelhart, M. D., Furst, E. J., Hill, W. H., & Krathwohl, D. R. (Eds.). (1956). *Taxonomy of educational objectives, Handbook I: Cognitive domain*. New York, NY: David McKay.
- Blume, B. D., Ford, J. K., Baldwin, T. T., & Huang, J. L. (2010). Transfer of training: A meta-analytical review. *Journal of Management*, 36(4), 1065-1105. <https://doi.org/10.1177/0149206309352880>
- Braun, N. M. (2004). Critical thinking in the business curriculum. *Journal of Education for Business*, 79(4), 232-236.
- Bresnahan, T. F., Brynjolfsson, E., & Hitt, L. M. (2002). Information technology, workplace organization and the demand for skilled labor: Firm-level evidence. *Quarterly Journal of Economics*, 117(1), 339-376.

- Broadbear, J. T. (2003). Essential elements of lessons designed to promote critical thinking. *Journal of Scholarship of Teaching and Learning*, 3(3), 1-8. Retrieved from <http://josotl.indiana.edu/article/viewFile/1603/1602>
- Broer, C., Raduege, A., & Muth, R. (2006). Business education. In F. W. English (Ed.), *Encyclopedia of educational leadership and administration* (Vol. 2, p. 96). Thousand Oaks, CA: SAGE. <https://doi.org/10.4135/9781412939584.n59>
- Browne, M. N., & Freeman, K. (2000). Distinguishing features of critical thinking classrooms. *Teaching in Higher Education*, 5(3), 301-309.
- Bruner, R. F., & Iannarelli, J. (2011). Globalization of management education. *Journal of Teaching in International Business*, 22(4), 232-242. <https://doi.org/10.1080/08975930.2011.653908>
- Brush, K. (2013). Why U.S. businesses urgently need to develop global leadership skills: 5 critical areas to begin focusing on now. *Professional Safety*, 58(4), 28.
- Brynjolfsson, E., & Hitt, L. M. (2000). Beyond computation: Information technology, organizational transformation and business performance. *Journal of Economic Perspectives*, 14(4), 23-48. Retrieved from <http://ebusiness.mit.edu/erik/JEP%20Beyond%20Computation%20BrynjolfssonHitt%207-121.pdf>
- Butler, H. A. (2012). Halpern critical thinking assessment predicts real-world outcomes of critical thinking. *Applied Cognitive Psychology*, 26(5), 721-729. <https://doi.org/10.1002/acp.2851>
- Carrithers, D., & Bean, J. C. (2008). Using a client memo to assess critical thinking of finance majors. *Business Communication Quarterly*, 71(1), 10-26.
- Cavalire, F., & Mayer, B. (2012). Flooding the zone: A ten-point approach to assessing critical thinking as part of the AACSB accreditation process. *Education*, 133(2), 361-366.
- Chartrand, J., Ishikawa, H., & Flander, S. (2013). *Critical thinking means business: Learn to apply and develop the NEW #1 workplace skill*. Retrieved from TalentLens website: <http://talentlens.in/PDF/Critical-Thinking-Means-Business.pdf>
- The Chronicle of Higher Education & American Public Media's Marketplace*. (2012). *The role of higher education in career development: Employer perceptions*. Retrieved from <http://chronicle.com/items/biz/pdf/Employers%20Survey.pdf>

- Clark, S. R. L. (1994). Ancient philosophy. In A. Kenny (Ed.), *The Oxford illustrated history of Western philosophy* (pp. 1-53). Oxford, United Kingdom: Oxford University Press.
- Coleman, B., Mason, P., & Steagall, J. (2012). Does a business curriculum develop or filter critical thinking? *American Journal of Business Education*, 5(4), 409-416.
- Cox, T., Jr., & Blake, S. (1991). Managing cultural diversity: Implications for organizational competitiveness. *Academy of Management Executive*, 5(3), 45-56. Retrieved from <http://ecampus.nmit.ac.nz/moodle/file.php/4599/Diversity/Cox%20%20Blake%20-%20Managing%20cultural%20diversity,%201991.pdf>
- Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). Thousand Oaks, CA: SAGE.
- Creswell, J. W., Hanson, W. E., Clark Plano, V. L., & Morales, A. (2007). Qualitative research designs: Selection and implementation. *The Counseling Psychologist*, 35(2), 236-264. <https://doi.org/10.1177/0011000006287390>
- Crowley, S., & Hawhee, D. (1999). *Ancient rhetorics for contemporary students* (2nd ed.). Boston, MA: Allyn and Bacon.
- Currie, G., Knights, D., & Starkey, K. (2010). Introduction: A post-crisis critical reflection on business schools. *British Journal of Management*, 21(Suppl. 1), s1-s5. <https://doi.org/10.1111/j.1467-8551.2009.00677.x>
- Currivan, D. (2008). Conversational interviewing. In P. J. Lavrakas (Ed.), *Encyclopedia of survey research methods* (pp. 152-153). Thousand Oaks, CA: SAGE. <https://doi.org/10.4135/9781412963947.n107>
- Daniel, B. (2015). Big Data and analytics in higher education: Opportunities and challenges. *British Journal of Educational Technology*, 46(5), 904-920. doi:10.1111/bjet.12230
- Datar, S. M., Garvin, D. A., & Cullen, P. G. (2010). *Rethinking the MBA: Business education at a crossroads*. Boston, MA: Harvard Business Press.
- Davenport, T. H., & Prusak, L. (2000, August). Working knowledge: How organizations manage what they know. *Ubiquity*. Retrieved from <http://ubiquity.acm.org/article.cfm?id=348775>
- Davies, W. M. (2006). An “infusion” approach to critical thinking: Moore on the critical thinking debate. *Higher Education Research & Development*, 25(2), 179-193. Retrieved from [http://fbe.unimelb.edu.au/\\_\\_data/assets/pdf\\_file/0020/632513/infusion\\_to\\_CT.pdf](http://fbe.unimelb.edu.au/__data/assets/pdf_file/0020/632513/infusion_to_CT.pdf)



- Denzin, N. K., & Lincoln, Y. (2008). *Strategies of qualitative inquiry* (3rd ed.). Los Angeles, CA: SAGE.
- Denzin, N. K., & Lincoln, Y. (2011). Introduction: The discipline and practice of qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *The SAGE handbook of qualitative research* (4th ed., pp. 1-19). Thousand Oaks, CA: SAGE.
- Deppe, L. A., Sonderegger, E. O., Stice, J. D., Clark, D. C., & Streuling, G. F. (1991, Autumn). Emerging competencies for the practice of accountancy. *Journal of Accounting Education*, 9(2), 257-290. [https://doi.org/10.1016/0748-5751\(91\)90005-C](https://doi.org/10.1016/0748-5751(91)90005-C)
- Designing effective projects: Thinking skills frameworks—Bloom's taxonomy: A new look at an old standby.* (n.d.). Retrieved from <http://download.intel.com/education/Common/au/Resources/DEP/skills/Bloom.pdf>
- Detterman, D. K., & Sternberg, R. J. (Eds.). (1993). *Transfer on trial: Intelligence, cognition, and instruction*. Norwood, NJ: Ablex.
- Dierdorff, E. C., Surface, E. A., & Brown, K. G. (2010). Frame-of-reference training effectiveness: Effects of goal orientation and self-efficacy on affective, cognitive, skill-based, and transfer outcomes. *Journal of Applied Psychology*, 95(6), 1181-1191. <https://doi.org/10.1037/a0020856>
- Doh, J. P. (2010). From the editors: Why aren't business schools more global and what can management educators do about it? *Academy of Management Learning & Education*, 9(2), 165-168. <https://doi.org/10.5465/AMLE.2010.51428541>
- Drucker, P. F. (1959). *Landmarks of tomorrow*. New Brunswick, NJ: Transaction.
- EBI MAP-Works. (n.d.). *About: Company history*. Retrieved from <http://www.webebi.com/about>
- Englander, M. (2012). The interview: Data collection in descriptive phenomenological human scientific research. *Journal of Phenomenological Psychology*, 43, 13-35. Retrieved from <http://phenomenologyblog.com/wp-content/uploads/2012/04/Englander-2012-The-Interview-Data-Collection-in-Descriptive-Phenomenological-Human-Scientific-Research.pdf>
- Ennis, R. H. (1989). Critical thinking and subject specificity: Clarification and needed research. *Educational Researcher*, 18(3), 4-10.
- Evans, L., Thornton, B., & Usinger, J. (2012). Theoretical frameworks to guide school improvement. *NASSP Bulletin*, 96(2) 154-171. <https://doi.org/10.1177/019263651244471>

- Ezzy, D. (2002). *Qualitative analysis: Practice and innovation*. Crows Nest, New South Wales, Australia: Allen and Unwin.
- Ferrett, S. (2015). *Peak performance* (9th ed.). New York, NY: McGraw-Hill Education.
- Finance. (2013). In *Investopedia*. Retrieved from <http://www.investopedia.com/terms/f/finance.asp>
- Fischer, K. (2011, June 20). A college degree sorts job applicants, but employers wish it meant more. *The Chronicle of Higher Education*. Retrieved from <http://chronicle.com/article/The-Employment-Mismatch/137625/#id=overview>
- Flores, K. L., Matkin, G. S., Burbach, M. E., Quinn, C. E., & Harding, H. (2012). Deficient critical thinking skills among college graduates: Implications for leadership. *Educational Philosophy and Theory*, 44(2), 212-230. <https://doi.org/10.1111/j.1469-5812.2010.00672.x>
- Forehand, M. (2005). Bloom's taxonomy: Original and revised. In M. Orey (Ed.), *Emerging perspectives on learning, teaching, and technology*. Retrieved from <http://epltt.coe.uga.edu/>
- Forsythe, L. M., Jones, I. M., & Kemp, D. J. (2013). *Collaborative critical thinking exercises for business law students*. Retrieved from Academy of Legal Studies in Business website: [http://www.alsb.org/wp-content/uploads/2013/11/NP-2013-Forsythe\\_Collaborative-Critical](http://www.alsb.org/wp-content/uploads/2013/11/NP-2013-Forsythe_Collaborative-Critical)
- Foundation for Critical Thinking. (n.d.). Defining critical thinking. Retrieved from <http://www.criticalthinking.org/pages/defining-critical-thinking/766>
- Foxon, M. (1993). A process approach to the transfer of training—Part 1: The impact of motivation and supervisor support on transfer maintenance. *Australian Journal of Educational Technology*, 9(2), 130-143. Retrieved from <https://ajet.org.au/index.php/AJET/article/download/2104/1040>
- Gabric, D., & McFadden, K. L. (2001, Spring). Student and employer perceptions of desirable entry-level operations management skills. *American Journal of Business*, 16(1), 5-60. <https://doi.org/10.1108/19355181200100005>
- Gardiner, B. (2011, November 17). We're hiring: Many business schools have trouble filling faculty positions. *The Wall Street Journal*. Retrieved from <http://online.wsj.com/article/SB10001424052970204224604577032232809553166.html>
- Gardner, H. (1987). *The mind's new science*. New York, NY: Basic Books.



- Gellin, A. (2003). The effect of undergraduate student involvement on critical thinking: A meta-analysis of the literature 1991-2000. *Journal of College Student Development, 44*(6), 746-762.
- Generally accepted accounting principles. (2010). In *A dictionary of accounting* (4th ed.). New York, NY: Oxford University Press. Retrieved from <http://oxfordindex.oup.com/view/10.1093/acref/9780199563050.013.1677>
- Ghoshal, S. (2005). Bad management theories are destroying good management practices. *Academy of Management Learning and Education, 4*(1), 75-91.
- Gibbons, M. (1998, October). *Higher education relevance in the 21st century*. Paper presented at the UNESCO World Conference on Higher Education, Paris, France. Retrieved from World Bank website: <http://documents.worldbank.org/curated/en/437341468782126524/pdf/multi-page.pdf>
- Gibbs, T., Heywood, S., Weiss, L., & Jost, G. (2012). Organizing for an emerging world. *McKinsey Quarterly, 3*(3), 81-91.
- Gist, M. E., Bavetta, A. G., & Stevens, C. K. (1990a). The effectiveness of self management versus goal setting in facilitating training transfer. *Proceedings of the 50th Annual Meeting of the Academy of Management, 117-121*.
- Gist, M. E., Bavetta, A. G., & Stevens, C. K. (1990b). Transfer training method: Its influence on skill generalization, skill repetition, and performance level. *Personnel Psychology, 43*(3), 501-523.
- Glesne, C. (2010). *Becoming qualitative researchers: An introduction* (4th ed.). Upper Saddle River, NJ: Pearson.
- Godin, S. (2010, May 3). The coming meltdown in higher education (as seen by a marketer). *The Chronicle of Higher Education*. Retrieved from [http://www.chronicle.com/article/The-Coming-Meltdown-in-Higher/65398/?sid=at&utm\\_source=at&utm\\_medium=en](http://www.chronicle.com/article/The-Coming-Meltdown-in-Higher/65398/?sid=at&utm_source=at&utm_medium=en)
- Gradous, B. D. (1991). *The development and validation of a transfer-of-training system* (Project No. 45). Retrieved from ERIC database. (ED337617)
- Green, F. (2012). Employee involvement, technology and evolution in job skills: A task-based analysis. *Industrial & Labor Relations Review, 65*(1), 36-67.
- Grusky, D. B., & Liu, Y. (2013). The payoff to skill in the third industrial revolution. *American Journal of Sociology, 118*(5), 1330-1374.

- Halpern, D. F. (1996). *Thought and knowledge: An introduction to critical thinking*. Mahwah, NJ: Erlbaum Associates.
- Halpern, D. F. (1998). Teaching critical thinking for transfer across domains: Disposition, skills, structure training, and metacognitive monitoring. *American Psychologist*, 53(4), 449-455. <https://doi.org/10.1037/0003-066X.53.4.449>
- Halx, M. D., & Reybold, L. E. (2005). A pedagogy of force: Faculty perspectives of critical thinking capacity in undergraduate students. *The Journal of General Education*, 54(4), 293-315. Retrieved from [https://learn.nsu.edu/iea/iea/image/a\\_pedagogy\\_of\\_force.pdf](https://learn.nsu.edu/iea/iea/image/a_pedagogy_of_force.pdf)
- Hamilton, C. (2013). *Communicating for results: A guide for business and the professions* (10th ed.). Belmont, CA: Wadsworth.
- Hannerz, U. (1989). Culture between center and periphery: Towards a macroanthropology. *Ethnos*, 54(3/4), 200-216.
- Hart Research Associates. (2013). *It takes more than a major: Employer priorities for college learning and student success*. Retrieved from Association of American Colleges and Universities website: [http://www.aacu.org/leap/documents/2013\\_EmployerSurvey.pdf](http://www.aacu.org/leap/documents/2013_EmployerSurvey.pdf)
- Heilbron, J. (1990). Auguste Comte and modern epistemology. *Sociological Theory*, 8(2), 153-162.
- Helsdingen, A., van Gog, T., & van Merriënboer, J. (2011). The effects of practice schedule and critical thinking prompts on learning and transfer of a complex judgment task. *Journal of Educational Psychology*, 103(2), 383-398. <https://doi.org/10.1037/a0022370>
- Herrmann, A. (2012, May). *Globalization and its effect on international business*. Paper presented at the Global Awareness Society International 21st Annual Conference, New York, NY. Retrieved from <https://pdfs.semanticscholar.org/20a7/835bf652832c2e8ea417189f78df9f7ddf2f.pdf>
- Hill, K. L., Hynes, G. E., Joyce, M. P., & Green, J. S. (2011). GMAT-AWA score as a predictor of success in a managerial communication course. *Business Communication Quarterly*, 74(2), 103-118. <https://doi.org/10.1177/1080569911404052>
- Hodge, K. A., & Lear, J. L. (2011, Winter). Employment skills for 21st century workplace: The gap between faculty and student perceptions. *Journal of Career and Technical Education*, 26(2). Retrieved from <https://ejournals.lib.vt.edu/JCTE/article/view/523/721>

- Hofstede, G. (1980). *Culture's consequences: International differences in work-related values*. Beverly Hills, CA: SAGE.
- Husnain, M., & Parekh, R. (2013, November 13). Economics students demand an education that reflects post-crash world. *The Guardian*. Retrieved from <http://www.theguardian.com/sustainable-business/economic-students-demand-education>
- Husserl, E. (1999). *The idea of phenomenology* (L. Hardy, Trans.). Dordrecht, Netherlands: Kluwer Academic.
- International Financial Reporting Standard. (2010). In *A dictionary of accounting* (4th ed.). New York, NY: Oxford University Press. Retrieved from <http://oxfordindex.oup.com/view/10.1093/acref/9780199563050.013.1947>
- Introduction to finance*. (n.d.). Retrieved from <https://kidsinprisonprogram.files.wordpress.com/2015/12/mgmt-005-introduction-to-finance-lecture.pdf>
- Iwaoka, W. I., Li, Y., & Rhee, W. Y. (2010). Measuring gains in critical thinking in food science and human nutrition courses: The Cornell Critical Thinking Test, problem-based learning activities, and student journal entries. *Journal of Food Science Education*, 9(3), 68-75. <https://doi.org/10.1111/j.1541-4329.2010.00100.x>
- Johnson, B. (1997, Winter). Examining the validity structure of qualitative research. *Education*, 118(2), 282-292. Retrieved from [https://www.researchgate.net/profile/R\\_Johnson3/publication/246126534\\_Examining\\_the\\_Validity\\_Structure\\_of\\_Qualitative\\_Research/links/54c2af380cf219bbe4e93a59/Examining-the-Validity-Structure-of-Qualitative-Research.pdf](https://www.researchgate.net/profile/R_Johnson3/publication/246126534_Examining_the_Validity_Structure_of_Qualitative_Research/links/54c2af380cf219bbe4e93a59/Examining-the-Validity-Structure-of-Qualitative-Research.pdf)
- Johnson, L., Adams, S., & Cummins, M. (2012). *The NMC Horizon report: 2012 higher education edition*. Austin, TX: The New Media Consortium.
- Johnson, L., Smith, R., Willis, H., Levine, A., & Haywood, K. (2011). *The 2011 Horizon report*. Austin, TX: The New Media Consortium.
- Johnson-Laird, P. N. (1998). Mental models. In M. I. Posner (Ed.), *Foundations of cognitive science* (pp. 469-500). Cambridge, MA: MIT Press.
- Jonker, J., & Pennink, B. (2010). *The essence of research methodology: A concise guide for master and PhD students in management science*. Heidelberg, Germany: Springer.
- Julian, S. D., & Ofori-Dankwa, J. C. (2006). Is accreditation good for the strategic decision making of traditional business schools? *Academy of Management Learning & Education*, 5, 225-233.

- Kale, S. H., & De, S. (2013). The impact of globalization on individual customers: Implications for marketing. *International Journal of Management*, 30(3, Pt. 1), 286-293.
- Kamenetz, A. (2010). *DIY U: Edupunks, edupreneurs, and the coming transformation of higher education*. White River Junction, VT: Chelsea Green.
- Kang, N., & Howren, C. (2004). Teaching for conceptual understanding. *Science and Children*, 42(1), 28-32.
- Kasperik, J., & Herlevi, G. (2009). *Five steps to realizing workforce training success* [White paper]. Retrieved from Tooling University website: [http://www.toolingu.com/images/whitepapers/five\\_steps\\_to\\_realizing\\_workforce\\_training\\_success.pdf](http://www.toolingu.com/images/whitepapers/five_steps_to_realizing_workforce_training_success.pdf)
- Kavanagh, M. H., & Drennan, L. (2008). *What skills and attributes does an accounting graduate need? Evidence from student perceptions and employer expectations*. Retrieved from [http://eprints.usq.edu.au/4540/4/Kavanah\\_Drennan\\_2008\\_AV.pdf](http://eprints.usq.edu.au/4540/4/Kavanah_Drennan_2008_AV.pdf)
- Kelderman, E. (2013, August 22). Public colleges endorse Obama plans on affordability and accountability. *The Chronicle of Higher Education*. Retrieved from <http://chronicle.com/article/Public-Colleges-Endorse-Obama/141231/>
- Kennedy, M., Fisher, M. B., & Ennis, R. H. (1991). Critical thinking: Literature review and needed research. In L. Idol & B. F. Jones (Eds.), *Educational values and cognitive instruction: Implications for reform* (pp. 11-40). Hillsdale, NJ: Lawrence Erlbaum & Associates.
- Kimmell, S. L., Marquette, R., & Olsen, D. H. (1998). Outcomes assessment programs: Historical perspective and state of the art. *Issues in Accounting Education*, 13(4), 851-868.
- King, F. J., Goodson, L., & Rohani, F. (n.d.). *Higher order thinking skills*. Retrieved from Center for Advancement of Learning and Assessment website: [http://www.cala.fsu.edu/files/higher\\_order\\_thinking\\_skills.pdf](http://www.cala.fsu.edu/files/higher_order_thinking_skills.pdf)
- King, M. (2014, April 16). Interconnected global risks: No man, or business, is an island. Retrieved from International Federation of Accountants website: <http://www.ifac.org/global-knowledge-gateway/viewpoints/interconnected-global-risks-no-man-or-business-island>
- King, P. M., & Kitchener, K. S. (1994). *Developing reflective judgment: Understanding and promoting intellectual growth and critical thinking in adolescents and adults*. San Francisco, CA: Jossey-Bass.

- Knowles, M. S., Holton, E. F., & Swanson, R. A. (2012). *The adult learner: The definitive classic in adult education and human resource development* (7th ed.). New York, NY: Routledge Taylor & Francis Group.
- Krathwohl, D. R. (2004). *Methods of educational and social science research: An integrated approach*. Long Grove, IL: Waveland Press.
- Krathwohl, D. R. (2009). *Methods of educational social science research: The logic of methods*. Long Grove, IL: Waveland Press.
- Krupat, E., Sprageu, J. M., Wolpaw, D., Haidet, P., Hatem, D., & O'Brien, B. (2011). Thinking critically about critical thinking: Ability, disposition or both? *Medical Education*, 45, 625-635. <https://doi.org/10.1111/j.1365-2923.2010.03910.x>
- Kuhn, D. (1999). A developmental model of critical thinking. *Educational Researcher*, 28(2), 16-26.
- Lai, E. R. (2011). *Critical thinking: A literature review*. Retrieved from Pearson website: <http://www.pearsonassessments.com/hai/images/tmrs/criticalthinkingreviewfinal.pdf>
- Lam, Y. Y. (2010). Impact of globalization on higher education: An empirical study of education policy and planning of design education in Hong Kong. *International Education Studies*, 3(4), 73-85. Retrieved from [ccsenet.org/journal/index.php/ies/article/download/7965/5955](http://ccsenet.org/journal/index.php/ies/article/download/7965/5955)
- Landsman, J., & Gorski, P. (2007). Countering standardization. *Educational Leadership*, 64(8), 40-41.
- Laughlin, R. (1995). Empirical research in accounting: Alternative approaches and a case for "middle-range" thinking. *Accounting, Auditing and Accountability Journal*, 8(1), 63-87.
- Leech, B. L. (2002). Asking questions: Techniques for semistructured interviews. *PS: Political Science and Politics*, 35(4), 665-668. Retrieved from <http://www.jstor.org/stable/1554805>
- Leiber, N. (2016, March 18). The selling of the American MBA. *Bloomberg Businessweek*. Retrieved from <https://www.bloomberg.com/news/articles/2016-03-18/the-selling-of-the-american-mba>
- Lester, M. (2011). *A study of the innovation, creativity, and leadership skills associated with the college-level millennial generation* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3487435)

- Lewis, A., & Smith, D. (1993). Defining higher order thinking. *Theory into Practice*, 32(3), 131-137.
- Lim, J., Reiser, R. A., & Olina, Z. (2009). The effects of part-task and whole-task instructional approaches on acquisition and transfer of a complex cognitive skill. *Educational Technology Research and Development*, 57(1), 61-77. <https://doi.org/10.1007/s11423-007-9085-y>
- Lincoln, Y. S. (1985). The substance of the emergent paradigm: Implications for researchers. In Y. S. Lincoln (Ed.), *Organisational theory and inquiry: The paradigm revolution* (pp. 137-157). Newbury Park, CA: SAGE.
- Liu, O. L., Frankel, L., & Roohr, K. C. (2014). Assessing critical thinking in higher education: Current state and directions for next-generation assessment. *ETS Research Reports Series*, 2014(1), 1-23. <https://doi.org/10.1002/ets2.12009>
- Locke, R. R., & Spender, J. C. (2011). *Confronting managerialism: How the business elite and their schools threw our lives out of balance*. London, United Kingdom: Zed Books.
- Lundquist, R. (1999). Critical thinking and the art of making good mistakes. *Teaching in Higher Education*, 4(4), 523-530.
- Mangan, K. (2009). Business schools are international? That's just "globaloney." *The Chronicle of Higher Education*, 55(24), A29.
- Marx, R. D. (1986). Relapse prevention in management education. *Proceedings of 43rd Annual Meeting of Academy of Management*, 91-94.
- Matilal, B. K. (1990). *Logic, language and reality: Indian philosophy and contemporary issues*. Delhi, India: Motilal Banarsidass.
- Mays, N., & Pope, C. (1995). Rigour and qualitative research. *British Medical Journal*, 311(6997), 109-112.
- Mentkowsi, M., Rogers, G., Doherty, A., Loacker, G., Reisetter Hart, J., Rickards, W., . . . Roth, J. (2000). *Learning that lasts: Integrating learning, development, and performance in college and beyond*. San Francisco, CA: Jossey-Bass.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis* (2nd ed.). Thousand Oaks, CA: SAGE.



- Miller, L. (2012, November 8). ASTD 2012 state of the industry report: Organizations continue to invest in workplace learning. *TD Magazine*. Retrieved from <http://www.astd.org/Publications/Magazines/TD/TD-Archive/2012/11/ASTD-2012-State-of-the-Industry-Report>
- Minton-Eversole, T. (2013, May). Skills gaps often very basic: English, critical thinking, solving problems. *HRMagazine*, 58(5), 20.
- Mintzberg, H. (2004). *Managers not MBAs: A hard look at the soft practice of managing and management development*. London, United Kingdom: Prentice Hall.
- Mintzberg, H., & Gosling, J. (2002). Educating managers beyond borders. *Academy of Management Learning & Education*, 1(1), 64-76.
- Morgan, D. (2008). Snowball sampling. In L. M. Given (Ed.), *The SAGE encyclopedia of qualitative research methods* (pp. 816-817). Thousand Oaks, CA: SAGE. <https://doi.org/10.4135/9781412963909.n425>
- Mosel, J. D. (1957). Why training programs fail to carry over. *Personnel*, 34(3), 56-64.
- Moustakas, C. (1994). *Phenomenological research methods*. Thousand Oaks, CA: SAGE.
- The National Leadership Council for Liberal Education & America's Promise. (2007). *College learning for the new global century*. Retrieved from Association of American Colleges and Universities website: [https://www.aacu.org/sites/default/files/files/LEAP/GlobalCentury\\_final.pdf](https://www.aacu.org/sites/default/files/files/LEAP/GlobalCentury_final.pdf)
- Nickerson, R. S. (1988). On improving thinking through instruction. *Review of Research in Education*, 15(1988-1989), 3-57.
- Niu, L., Behar-Horenstein, L. S., & Garvan, C. W. (2013). Do instructional interventions influence college students' critical thinking skills? A meta-analysis. *Educational Research Review*, 9, 114-128.
- O'Brien, J. (2013, May 21). The IT salary "wave": Skills, salaries, and the coming reckoning. *The Plug*. Retrieved from <http://switchon.eaton.com/plug/article/161/the-it-salary-wave-skills-salaries-and-the-co#>
- O'Connor, K. (2003, Winter). Dialectic. In *The University of Chicago: Theories of media: Keywords glossary*. Retrieved from <http://csmt.uchicago.edu/glossary2004/dialectic.htm>
- Oliver, P. (2006). Snowball sampling. In V. Jupp (Ed.), *The SAGE dictionary of social research methods* (pp. 282-283). London, United Kingdom: SAGE.

- Paisey, C., & Paisey, N. J. (2010). Developing skills via work placements in accounting: Student and employer views. *Accounting Forum*, 34(2), 89-108.
- Pan, P., & Perera, H. (2012). Market relevance of university accounting programs: Evidence from Australia. *Accounting Forum*, 36(2), 91-108.  
<https://doi.org/10.1016/j.accfor.2011.11.001>
- Parker, N. (2011, April 17). The adjunct economy. *Boston Globe*. Retrieved from [http://www.boston.com/news/education/higher/articles/2011/04/17/universities\\_rely\\_on\\_adjunct\\_professors\\_to\\_do\\_most\\_of\\_the\\_teaching/](http://www.boston.com/news/education/higher/articles/2011/04/17/universities_rely_on_adjunct_professors_to_do_most_of_the_teaching/)
- Patton, M. (1990). *Qualitative evaluation and research methods*. Beverly Hills, CA: SAGE.
- Patton, M. Q. (2014). *Qualitative research & evaluation methods: Integrating theory and practice* (4th ed.). Los Angeles, CA: SAGE.
- Paul, R. (1992). Critical thinking: What, why, and how. *New Directions for Community College*, 1992(77), 3-24. doi:10.1002/cc.36819927703
- Paul, R., & Elder, L. (2002). *Critical thinking tools for taking charge of your personal and professional life*. New York, NY: Prentice Hall.
- Paul, R., & Elder, L. (2006). *The miniature guide to critical thinking concepts and tools* (4th ed.). Retrieved from Foundation for Critical Thinking website: [http://www.criticalthinking.org/files/Concepts\\_Tools.pdf](http://www.criticalthinking.org/files/Concepts_Tools.pdf)
- Paul, R., Elder, L., & Bartell, T. (1997). A brief history of the idea of critical thinking. In *California teacher preparation for instruction in critical thinking: Research findings and policy recommendations*. Retrieved from Foundation for Critical Thinking website: <https://www.criticalthinking.org/pages/a-brief-history-of-the-idea-of-critical-thinking/408>
- Paul, R., & Nosich, G. M. (1993). A model for the national assessment of higher order thinking. Retrieved from Foundation for Critical Thinking website: <http://www.criticalthinking.org/pages/a-model-for-the-national-assessment-of-higher-order-thinking/591>
- Pedagogy. (n.d.). In *Merriam-Webster online dictionary*. Retrieved from <http://www.merriam-webster.com/dictionary/pedagogy>
- Petress, K. (2004, Spring). Critical thinking: An extended definition. *Education*, 124(3), 461-466. Retrieved from [http://isites.harvard.edu/fs/docs/icb.topic265890.files/Critical\\_Thinking\\_File/06\\_CT\\_Extended\\_Definition.pdf](http://isites.harvard.edu/fs/docs/icb.topic265890.files/Critical_Thinking_File/06_CT_Extended_Definition.pdf)



- Pfeffer, J., & Fong, C. T. (2002). The end of business schools? Less success than meets the eye. *Academy of Management Learning & Education*, 1(1), 78-95. <https://doi.org/10.5465/AMLE.2002.7373679>
- Piper, B. (2004, January). Critical thinking skills. *Professional Builder*, 69(1), 54.
- Pithers, R. T., & Soden, R. (2000). Critical thinking in education: A review. *Educational Research*, 42(3), 237-250. <https://doi.org/10.1080/001318800440579>
- Policano, A. J. (2011). Foreword. In AACSB International Globalization of Management Education Task Force, *Globalization of management education: Changing international structures, adaptive strategies, and the impact on institutions* (pp. xi-xii). Tampa, FL: AACSB International.
- Polkinghorne, D. D. (1989). Phenomenological research methods. In R. S. Valle & S. Halling (Eds.), *Existential-phenomenological perspectives in psychology* (pp. 41-60). New York, NY: Plenum Press.
- Posner, M. I. (1998). Preface. In M. I. Posner (Ed.), *Foundations of cognitive science* (pp. ix-xiv). Cambridge, MA: MIT Press.
- Pounder, B. (2006). *How globalization is affecting U.S. accountants*. Asheville, NC: Leveraged Logic, Pounder Consulting Services.
- Pylyshyn, Z. W. (1998). Computing in cognitive science. In M. I. Posner (Ed.), *Foundations of cognitive science* (pp. 49-92). Cambridge, MA: MIT Press.
- Reed, M. I., & Hughes, M. (Eds.). (1992). *Rethinking organization: New directions in organization theory and analysis*. London, United Kingdom: SAGE.
- Reid, J. R., & Anderson, P. R. (2012). Critical thinking in the business classroom. *Journal of Education for Business*, 87, 52-59. <https://doi.org/10.1080/08832323.2011.557103>
- Reinhardt, W., Schmidt, B., Sloep, P., & Drachsler, H. (2011). Knowledge worker roles and actions—results of two empirical studies. *Knowledge and Process Management*, 18(3) 150-174. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/kpm.378/abstract>
- Reinstein, A., & Lander, G. H. (2008). Developing critical thinking in college programs. *Research in Higher Education Journal*, 1, 78-94.
- Reybold, L. E. (2003). Pathways to the professorate: The development of faculty identity in education. *Journal of Innovative Higher Education*, 27(4), 235-252.

- Richter, D. H. (1989). *The critical tradition: Classic texts and contemporary trends*. Boston, MA: Bedford Books.
- Riddell, T. (2007). Critical assumptions: Thinking critically about critical thinking. *Journal of Nursing Education*, 46(3), 121-126.
- Rip, A. (2001). Utilization of research: A sociology of knowledge perspective. In Netherlands Development Assistance Research Council, *Utilization of research for development cooperation* (Publication No. 21, pp. 13-17). Retrieved from [http://www.povertymonitoring.go.tz/researchreport/research\\_and\\_policy\\_linkages\\_2001\\_netherlands.pdf#page=13](http://www.povertymonitoring.go.tz/researchreport/research_and_policy_linkages_2001_netherlands.pdf#page=13)
- Rippen, A., Booth, C., Bowie, S., & Jordan, J. (2002). A complex case: Using the case study method to explore uncertainty and ambiguity in undergraduate business education. *Teaching in Higher Education*, 7(4), 429.
- Romero, E. J. (2008). AACSB accreditation: Addressing faculty concerns. *Academy of Management Learning & Education*, 7(2), 245-255. <https://doi.org/10.5465/AMLE.2008.32712622>
- Ronan, C. A. (1978). *The shorter science and civilization in China: An abridgement of Needham's original text*. Cambridge, United Kingdom: Cambridge UP.
- Rubinstein, R. (1994). Proposal writing. In J. Gubrium & A. Sankar (Eds.), *Qualitative methods in ageing research* (pp. 72-78). London, United Kingdom: SAGE.
- Russell, B. (1972). *A history of Western philosophy*. New York, NY: Simon & Schuster.
- Saldana, J. (2009). *The coding manual for qualitative researchers*. Thousand Oaks, CA: SAGE.
- Sampson, D. C., Moore, R., & Jackson, M. J. (2007). Critical thinking: Do they really have "it" if they don't know what "it" is? *Proceedings of the Academy of Educational Leadership*, 12(1), 47-51.
- Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students* (5th ed.). Harlow, Essex, United Kingdom: Pearson Education.
- Schoemaker, P. H. (2008). The future challenges of business: Rethinking management education. *California Management Review*, 50(3), 119-139.
- Schoenberg, B. (2007). *Critical thinking in business*. Chesterfield, MO: Heuristic Books.

- Scriven, M. & Paul, R. (2003). Defining critical thinking. Retrieved from Foundation for Critical Thinking website: <http://www.criticalthinking.org/pages/defining-critical-thinking/766/410>
- Shaftel, J., & Shaftel, T. L. (2007). Educational assessment and the AACSB. *Issues in Accounting Education*, 22(2), 215-232.
- Shao-Ping, Y., Hung-Chang, L., Ya-Huei, W., & Ming-Jen, C. (2014). Development of a scale to measure the critical thinking disposition of medical care professionals. *Social Behavior & Personality: An International Journal*, 42(2), 303-311.
- Sieck, W. (2016, May 31). Critical thinking in decision making [Web log post]. Retrieved from <http://www.globalcognition.org/critical-thinking-in-decision-making/>
- Silverman, D. (2005). *Doing qualitative research: A practical handbook* (2nd ed.). London, United Kingdom: SAGE.
- Simon, H. A., & Kaplan, C. A. (1998). Foundations of cognitive science. In M. I. Posner (Ed.), *Foundations of cognitive science* (pp. 1-47). Cambridge, MA: MIT Press.
- Smith, E. E. (1998). Concepts and induction. In M. I. Posner (Ed.), *Foundations of cognitive science* (pp. 501-526). Cambridge, MA: MIT Press.
- Smith, G. F. (2003). Beyond critical thinking and decision making: Teaching business students how to think. *Journal of Management Education*, 27(1), 24-51. <https://doi.org/10.1177/1052562902239247>
- Snyder, L. G., & Snyder, M. J. (2008, Spring/Summer). Teaching critical thinking and problem solving skills. *The Delta Pi Epsilon Journal*, 50(2), 91-99.
- Solari, L. (2012). Globalization will make us all more different. *People & Strategy*, 35(2), 30-35.
- Sormunen, C., & Chalupa, M. (1994). Critical thinking skills research: Developing evaluation techniques. *Journal of Education for Business*, 69(3), 172-177.
- Sternberg, R. J. (1986). *Critical thinking: Its nature, measurement, and improvement*. Retrieved from ERIC database. (ED272882)
- Stewart, T. A. (1999, March 15). A way to measure worldwide success going global, Part II. *Fortune*. Retrieved from [http://archive.fortune.com/magazines/fortune/fortune\\_archive/1999/03/15/256484/index.htm](http://archive.fortune.com/magazines/fortune/fortune_archive/1999/03/15/256484/index.htm)

- Swinney, J. M. (1989). Who's gonna turn the crank? OR implementing training or performance improvement projects. *Performance & Instruction*, 28(1), 33-37. <https://doi.org/10.1002/pfi.4170280110>
- Tai Ming, C., & Bates, G. (2013). Trade versus security: How countries balance technology transfers with China. *Journal of East Asian Studies*, 13(3), 443-456.
- Tanner, C. A. (2011). The critical state of measurement in nursing education research. *Journal of Nursing Education*, 50, 491-492. <https://doi.org/10.3928/01484834-20110819-01>
- Tarnas, R. (1991). *The passion of the Western mind: Understanding the ideas that have shaped our world view*. New York, NY: Ballantine Books.
- Tempelaar, D. T. (2006). The role of metacognition in business education. *Industry and Higher Education*, 20(5), 291-297.
- Trank, C. Q., & Rynes, S. L. (2003). Who moved out cheese? Reclaiming professionalism in business education. *Academy of Management Learning & Education*, 2, 189-205. <https://doi.org/10.5465/AMLE.2003.9901678>
- Tsui, L. (2002). Fostering critical thinking through effective pedagogy: Evidence from four institutional case studies. *Journal of Higher Education*, 73(6), 740-763.
- Tsui, L. (2003). Reproducing social inequalities through higher education: Critical thinking as a valued capital. *Journal of Negro Education*, 72(3), 318-332.
- Tuohy, D., Cooney, A., Dowling, M., Murphy, K., & Sixsmith, J. (2013). An overview of interpretive phenomenology as a research methodology. *Nurse Researcher*, 20(6), 17-20.
- Tutkun, O., Guzel, D., Koroğlu, M., & Ilhan, H. (2012). Bloom's revised taxonomy and critics on it. *Online Journal of Counseling & Education*, 1(3), 23-30.
- Twenge, J. M. (2010). A review of the empirical evidence on generational differences in work attitudes. *Journal of Business and Psychology*, 25, 201-210.
- Tysiac, K. (2014, May 19). Five key trends worth watching. *Journal of Accountancy*. Retrieved from <http://journalofaccountancy.com/News/201410140.htm>
- Usry, F. J., Jr. (2004). *How critical thinking shapes decision making process*. Retrieved from Defense Technical Information Center website: <http://www.dtic.mil/dtic/tr/fulltext/u2/a425924.pdf>

- van Gelder, T. (2005, Winter). Teaching critical thinking: Some lessons from cognitive science. *College Teaching*, 53(1), 41-46. Retrieved from <http://www.juniata.edu/services/sotl/documents/TeachingCriticalThinking.pdf>
- van Merriënboer, J. J. G., Schuurman, J. G., de Croock, M. B. M., & Paas, F. G. W. C. (2002). Redirecting learners' attention during training: Effects on cognitive load, transfer test performance and training efficiency. *Learning and Instruction*, 12, 11-37. [http://doi.org/10.1016/S0959-4752\(01\)00020-2](http://doi.org/10.1016/S0959-4752(01)00020-2)
- Von Krogh, G., Rossi-Lamastra, C., & Haefliger, S. (2012). Phenomenon-based research in management and organization science: When is it rigorous and does it matter? *Long Range Planning*, 45, 277-298. Retrieved from <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=4&ved=0CD8QFjAD&url=http%3A%2F%2Fwww.kites.unibocconi.it%2Fwps%2FallegatiCTP%2Fvon%2520Krogh.doc&ei=HpGfUriNCobvkQeVrIEQ&usg=AFQjCNEswtNhJGE-jsykoJYVBBOWCeYi5w>
- Wahyuni, D. (2012, Winter). The research design maze: Understanding paradigms, cases, methods and methodologies. *Journal of Applied Management Accounting Research*, 10(1), 69-80. Retrieved from [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2103082](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2103082)
- Watson, S. F., Apostolou, B., Hassell, J. M., & Webber, S. A. (2003). Accounting education literature review (2000-2002). *Journal of Accounting Education*, 21, 267-325. Retrieved from [www.elsevier.com/locate/jaccedu](http://www.elsevier.com/locate/jaccedu)
- Weissberg, R. (2013). Critically thinking about critical thinking. *Academic Questions*, 26(3), 317-328.
- Wheeler, J. A. (n.d.). In *Dictionary of science quotations*. Retrieved from [http://www.todayinsci.com/W/Wheeler\\_John/WheelerJohn-Quotations.htm](http://www.todayinsci.com/W/Wheeler_John/WheelerJohn-Quotations.htm)
- Williams, D. Z. (1995). Implementing change in accounting education. In C. P. Baril (Ed.), *Changes in accounting education: A research blueprint* (pp. 3-10). St. Louis, MO: Federation of Schools of Accountancy.
- Williams, R. L. (1999). Operational definitions and assessment of higher-order cognitive constructs. *Educational Psychology Review*, 11(4), 411-427.
- Wolcott, S. K., Baril, C. P., Cunningham, B. M., Fordham, D. R., & St. Pierre, K. (2002, Spring). Critical thought on critical thinking research. *Journal of Accounting Education*, 20(2), 85-103.

- Wright, D. (2014, May 6). The significant regulatory developments that will shape the accountancy profession and global economy in the near future. Retrieved from International Federation of Accountants website: <http://www.ifac.org/global-knowledge-gateway/viewpoints/significant-regulatory-developments-will-shape-accountancy-profe>
- Young, M., & Warren, D. L. (2011). Encouraging the development of critical thinking skills in the introductory accounting courses using the challenge problem approach. *Issues in Accounting Education*, 26(4), 859-881. <https://doi.org/10.2308/iace-50065>

## APPENDICES

APPENDIX A  
INTERVIEW PROTOCOL AND QUESTIONS



## INTERVIEW PROTOCOL

Name of Participant \_\_\_\_\_

Interview Date: \_\_\_\_\_ Time: \_\_\_\_\_ Place: \_\_\_\_\_

### Opening Comments:

1. Hello, my name is Christine Jagannathan. I am conducting this interview as part of my doctoral dissertation research. Thank you for volunteering to participate in this study.
2. The purpose of my study is to explore possible differences in how accounting industry and education stakeholders like yourself define and assess critical thinking in action amongst accounting graduates.
3. Before we begin the interview, could I ask you to sign this *Informed Consent Form*, a copy of which I had sent you prior to your confirmation of this interview. As a reminder: The form simply states that your participation in this interview is entirely voluntary, that you may withdraw from the interview at any time, and that your participation will be confidential and anonymous, since your specific words, or any and all identifying information will not be included in the published study.
4. Once again, thank you for agreeing to participate in this study, and may I have your permission to record this interview to ensure accurate recording of your comments? I will be audio taping this session with these two tape recorders. One of the audio tapes will be sent to a professional transcriber who has agreed to keep all information confidential. The digital recordings will be kept on my personal computer – password protected until the end of the research project. They will then be destroyed. Additionally, I will be making notes during the interview. I expect the interview to take 30-45 minutes.
5. Before we begin, do you have any concerns or questions?
6. As mentioned, I will not be including any identifying information in the published study. To help in maintaining anonymity and confidentiality please avoid including any identifying information such as the specific name of colleagues, supervisors, or even the name of your institution/company during the interview.

## INTERVIEW QUESTIONS

### Reminders to Researcher

To ensure descriptive answers, use probing questions that require the participant to flesh out his/her answers. Examples of probing questions include:

- Could you give me an example?
- Would you expand/clarify that?
- Why do you think that was the case?

### Question #1: What comes to mind when you hear the phrase “critical thinking”?

Follow-up questions to deepen the respondent’s answer might include but are not be limited to:

- In your own words, how would you define it?
- Can you give examples of skills, attitudes, behaviors, etc., that are examples of critical thinking in the accounting profession (or amongst newly hired accounting graduates)?
- Is critical thinking a term you actively used in your organization/classroom?
- *For Employers:* Is it included in job descriptions, interview questions, performance evaluations, promotion or selection criteria?
- *For Faculty:* Is it included in your handouts, lectures, syllabus, etc.?
- Is critical thinking important to the work done by accountants? How and why?
- Relative to the profession, would you rate critical thinking as more or less important than other abilities or competencies? Can you give examples?

### Question #2: In your experience with recent hires/students (last 5 years), are you satisfied with their ability to think critically?

Follow-up questions to deepen the respondent’s answer might include but are not be limited to:

- Why or why not? Can you give me examples?
- What observations of behavior do you consider reliable indicators of critical thinking? Can you provide specific examples?
- How do you assess critical thinking? Can you provide specific examples?
- *For Employers:* Does your organization tie performance evaluations/promotions to the ability to think critically? Can you provide specific examples?
- *For Faculty:* Do you have specific assessment criteria/a reward system tied to a student’s ability to think critically? Can you provide specific examples?

- Do you think that present day graduates/students have a greater/lesser ability for thinking critically than previous generations/experienced accountants? Can you provide specific examples?
- Have the profession's requirements changed in terms of critical thinking?
- Is critical thinking more or less important than in the past?
- What impact has globalization and/or technology had on critical thinking requirements in the accounting profession?

**Question #3: Could you provide a specific example(s) of recent hires/students who demonstrated/failed to demonstrate a high level of critical thinking?**

Follow-up questions to deepen the respondent's answer might include but are not limited to:

- What specific assessment measures did you employ to determine whether these hires/students demonstrated/failed to demonstrate a high level of critical thinking?
- Are there other examples?
- What behaviors and dispositions do you and others in your organization/other faculty look for in terms of critical thinking?
- Does your organization engage in training or development to strengthen critical thinking in new employees? OR Do you provide instruction in critical thinking? Can you provide specific examples?
- In your view are accounting graduates adequately prepared in terms of critical thinking for the profession - why or why not?

### CONCLUSION

1. Thank you once again for your willingness to participate in this interview. The information you have provided me with is valuable in gaining insights into how accounting stakeholders view critical thinking skills.
2. I will make a complete copy of the transcript of this interview available for your review so that you may verify the accuracy of its contents.
3. Do you have any questions? Should you have questions later, you may contact me at xxx-xxx-xxx or [XXXXXXXXXXXXXXXX@XXXXXX.XXX](mailto:XXXXXXXXXXXXXXXX@XXXXXX.XXX)
4. Turn off tape recorders.

APPENDIX B  
INSTITUTIONAL REVIEW BOARD APPROVAL



University of La Verne  
Institutional Review Board

TO: Christine Jagannathan, Doctor of Education & Organizational Leadership Program

FROM: University of La Verne, Institutional Review Board

RE: **2016-CEOL-32, From Classroom to Workplace: An Exploration of How Teachers and Employers of Accounting Graduates Define and Assess Critical Thinking in Action**

The proposed dissertation research project, cited above, was reviewed by the College of Education and Organizational Leadership Institutional Review Board (IRB) and University of La Verne (ULV) IRB Committees. The college review determined that the research activity has minimal risk to human participants and the application received an **Expedited Review**. Congratulations, your ULV IRB application has been **APPROVED** and you can proceed with the proposed study.

**A copy of this approval letter is required to be included as an appendix to your completed dissertation.** The project may proceed to completion, or until the **date of expiration of ULV IRB approval, 4/28/17.**

Please note the following conditions apply to all ULV IRB submissions:

No new participants may be enrolled beyond the proposed target or expiration date without ULV IRB approval of an amendment or extension.

The ULV IRB expects to receive notification of the completion of this project, or a request for extension within two weeks of the approval expiration date, whichever date comes earlier.

The ULV IRB expects to receive prompt notice of any proposed changes to the protocol, informed consent forms, participant recruitment materials or off site venues/locations. No additional participants may be enrolled in the research without approval of the amended items.

The ULV IRB expects to receive prompt notice of any adverse event involving human participants in this research.

There are no further conditions placed on this approval.

The ULV IRB wishes to extend to you its best wishes for a successful research endeavor.

Sarah L. Dunn, Ph.D.

4/29/2016

Approval Signature

ULV IRB Director/Chair

Date

**For the Protection of Human Participants in Research**  
Contact: email [irb@laverne.edu](mailto:irb@laverne.edu) or phone (909) 448-4756  
ULV IRB Website: [laverne.edu/irb](http://laverne.edu/irb)

APPENDIX C

E-MAIL TO PROSPECTIVE PARTICIPANTS

[Date]

Dear Prospective Participant:

I am a Doctoral student at the University of La Verne, currently conducting research for my dissertation. The purpose of my study is to explore how two important stakeholder groups of Southern California business education, accounting faculty and regional employers of accounting graduates, define critical thinking and how they expect graduates to demonstrate critical thinking.

You have been recommended as an experienced faculty member engaged in preparing accounting students for future careers/an employer with experience in hiring and overseeing qualified business graduates for your company. Your participation in this research is voluntary and will assist in a better understanding of the role of business education in preparing students for workplace challenges, while also shedding light on the nature of workplace inhibitors that might prevent the transfer of skills from classroom to workplace.

I will be gathering data for study via in-person interviews, and all participants will be assigned alpha-numeric identifiers to increase confidentiality. Your responses will be recorded and later transcribed. You will be able to review the responses and add to them if you wish. Additionally, all responses will be kept confidential and secure at all times—either secured in a locked file cabinet or digitally saved in an equivalent secure electronic storage. Data provided will be limited to this research, although the results and conclusions may be presented in formats other than the dissertation, such as a journal article or conference presentation.

If you agree to be interviewed, I will send you a consent form as a Word document attachment by email, which I will review with you on the day of the interview before obtaining your signature on the form. I will also contact you to discuss the interview process. Upon completion of the study, you will be provided with a summary of the results should you wish to see them.

If you have any questions, please feel free to contact me at [xxx@laverne.edu](mailto:xxx@laverne.edu). You may also contact the dissertation chairperson, Dr. Stuart Allen, at [xxx@laverne.edu](mailto:xxx@laverne.edu).

Looking forward to hearing from you,

Christine Jagannathan  
Doctoral Candidate in Organizational Leadership

APPENDIX D

CONSENT TO PARTICIPATE IN THE STUDY



## INFORMED CONSENT FORM

Page Number:

Page 1 of 3

**CONSENT TO PARTICIPATE IN RESEARCH**

*From Classroom to Workplace: An Exploration of How Teachers and Employers of Accounting Graduates Define and Assess Critical Thinking in Action*

You are being asked to participate in a research study conducted by Christine Jagannathan, doctoral candidate with the College of Education and Organizational Leadership at the University of La Verne. You were selected as a possible participant in this study because of your experience with preparing accounting students for future careers/in hiring and overseeing qualified business graduates for your company.

**PURPOSE OF THE STUDY**

Therefore, the purpose of this study was to explore how two important stakeholder groups of Southern California business education, accounting faculty and regional employers of accounting graduates, reported definitions of critical thinking and how they expected graduates to demonstrate critical thinking. Specifically, the objective of the study is to explore what differences might exist in the conceptualization and operational assessment of critical thinking between those who teach accounting and those who seek to employ accounting majors.

- **PROCEDURES**

If you decide to participate in this study, we will ask you to do the following things:

- Describe to the best of your ability what you consider evidence of critical thinking in the workplace/classroom.
- Based on the above, indicate your level of satisfaction with recent hires/students you have worked with regarding their ability to think critically.
- Provide specific example(s) of recent hires/students who demonstrated/failed to demonstrate a high level of critical thinking.

- **POTENTIAL RISKS AND DISCOMFORTS**

None.

- **POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY**

The participants are not expected to directly benefit from this study. However, the study may lead to better understanding the role of business education in preparing students for workplace challenges, while also shedding light on the nature of workplace inhibitors that might prevent the transfer of skills from classroom to workplace.

- **PAYMENT FOR PARTICIPATION**

No payment will be received.

- **CONFIDENTIALITY**

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained by means of maintaining the collected data either in a locked filing cabinet or in a password-protected laptop under the direct control of Christine Jaganathan.

- \_\_\_ I agree to have my name and position included in the study.
- \_\_\_ I wish to have my name and position remain confidential.

- **PARTICIPATION AND WITHDRAWAL**

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you don't want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

- **IDENTIFICATION OF INVESTIGATORS**

If you have any questions or concerns about the research, please feel free to contact xxx at [xxx@laverne.edu](mailto:xxx@laverne.edu) or at (xxx)xxx-xxxx. You may also contact the dissertation chairperson, xxx at [xxx@laverne.edu](mailto:xxx@laverne.edu).

- **RIGHTS OF RESEARCH PARTICIPANTS**

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of

your participation in this research study. If you have questions regarding your rights as a research participant, contact xxx Ph.D., IRB Director at (xxx)xxx-xxxx, or at [xxx@laverne.edu](mailto:xxx@laverne.edu), University of La Verne, Institutional Review Board.

**SIGNATURE OF RESEARCH PARTICIPANT OR LEGAL REPRESENTATIVE**

I understand the procedures described above. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

\_\_\_\_\_  
Printed Name of Participant

\_\_\_\_\_  
Printed Name of Legal Representative (if applicable)

\_\_\_\_\_  
Signature of Participant or Legal Representative

\_\_\_\_\_  
Date

**SIGNATURE OF INVESTIGATOR (If required by the IRB)**

In my judgment the participant is voluntarily and knowingly giving informed consent and possesses the legal capacity to give informed consent to participate in this research study.

\_\_\_\_\_  
Signature of Investigator

\_\_\_\_\_  
Date