

150 Credit-Hours: Stakeholders' Benefits and Students' Skills and Attributes

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With evolving professional expectations of today's CPAs, the current changes to the CPA exam focus on higher-order cognitive skills of analysis including data analytics and digital dataset skills. Considering the flexibility in how students are fulfilling the 150 credit-hours requirement, a chosen pathway curriculum may not afford students with the opportunity to acquire these skills and competencies necessary to meet workplace expectations. The findings from this study provide insights into the trending education pathway, perceived benefits gained, and offer a perspective into how educators can improve their accounting curriculum to better prepare students for the needs of the accounting profession.

Keywords: 150 credit-hours requirement, CPA exam, accounting curriculum, data analytics

INTRODUCTION

Decades-long debate exists among stakeholders (regulators, academics, practitioners, and industry professionals) surrounding what constitutes the best educational path for accounting professionals seeking certified public accountant (CPA) certification (licensure) because of the competing outcomes of the various stakeholders. Colleges and universities develop accounting programs and curricula that enable students to meet the educational requirement for CPA licensure in their respective jurisdictions. Most universities with the Association to Advance Collegiate Schools of Business (AACSB) accreditation use CPA exam pass rates to measure quality and design their accounting curricula. However, according to the most recent accounting graduates trend report by the American Institute of CPAs (AICPA), only 40% of accounting students entered public accounting and the number of accounting graduates taking the CPA exam was at the lowest point in 10 years (AICPA, 2019). As accounting students enter a wide range of entry-level positions, stakeholders advocate for a long-term focus of the accounting curriculum as four years is not enough to be skilled in both generalized and specialized knowledge for entry-level professionals (Crawford, 2017).

One stakeholder, the AICPA, affirmed their conviction that students should complete 150 credit-hours to obtain the required body of knowledge and skills with the enactment of the 150 credit-hours requirement in 1998 (effective in 2000) for all new members. Subsequently, CPA licensing jurisdictions increased their

specific education eligibility requirement for CPA candidacy to include the 150 credit-hours rule. Currently, students are using a variety of pathways to fulfill the 150 credit-hours educational requirement for initial CPA licensure. While the AICPA and National Association of State Boards of Accountancy (NASBA) promoted the benefits of the 150 credit-hours requirement in broadening accounting education and developing essential skills and competencies, there was no mandate for graduate-level education nor a prescribed curriculum pathway to meet this requirement (Larkin, 2014). Gramling and Rossman (2013) asserted future research should address the *scope* and *content* of additional credit hours to the 150 credit-hours requirement as it is already solidified as a professional requirement that benefits candidates and the public.

The purpose of this research study is to identify what stakeholders recognized as benefits from the additional 30 credit-hours, the educational pathways accounting professionals pursued to obtain the additional 30 credit-hours, and if the additional 30 credit-hours beyond the baccalaureate degree should be more prescriptive. To identify specific or prescribed courses, if any, that should be part of the 150 credit-hours requirement, respondents were asked to rank the importance of essential skills and competencies. This research adds to the continuing debate on the best educational pathway for individuals seeking CPA certification and the benefits gained from the additional 30 credit-hours requirement. This paper is organized first with a discussion of the literature on the development and debate of the 150 credit-hours requirement and the identification of the skills, knowledge, and competencies most important to practitioners and the profession. The literature review is followed by a discussion on the methodology and results of the research questions developed from the literature. Finally, the conclusions and limitations of the study are discussed.

LITERATURE REVIEW AND DEVELOPMENT OF RESEARCH QUESTIONS

The practice of public accounting, particularly auditing, provides a service to the economy and society and has always responded to evolving societal expectations (PricewaterhouseCoopers [PWC], 2015). The AICPA and NASBA have endorsed modifications within the three-pronged requirements for initial CPA licensure to meet the shifting demands of the profession. One requirement, education, has long been a topic of discussion and debate centered on the optimal credit hours for licensing prerequisite. The AICPA and NASBA have been central proponents of the 150-credit hour educational requirement.

The AICPA began their advocacy for the 150 credit-hours requirement in 1937 when their predecessor, the American Institute of Accountants, released an official position in favor of postgraduate education for aspiring CPAs (Van Wyhe, 2007a, 2007b). Twenty years later, the AICPA reiterated their advocacy of the 150 credit-hours requirement based on the 1956 *Report of the Perry Commission* recommendation of education standards that included “college graduation from a fifth-year professional accounting program” (Perry, 1956, p.137). At that time, it was perceived that a fifth-year professional accounting program would culminate in a master’s degree (Sathe, 2019).

A series of subsequent reports supported the case for graduate education for entrants into the profession. In its Report, Conclusions, and Recommendations (AICPA, 1978), the AICPA reaffirmed the need for coursework beyond the baccalaureate degree. However, in the *Education Requirements or Entry into the Accounting Profession: A Statement of AICPA Policies* (Albers, 1979), the AICPA recognized the various ways to obtain academic degrees and redefined their view of what embodied the term fifth-year. Initially, the AICPA perceived the fifth year to be 120 credit-hours for a baccalaureate degree earned in four years thus meeting a 150 credit-hours requirement in five years (AICPA, 1978). Under this redefined concept, accounting students could obtain the necessary credits without earning a graduate degree.

Additionally, reports by the Albers Commission (1983), Bedford Committee (1986), and Treadway Commission (1987) affirmed the need for the fifth year of education for students to develop higher-quality technical skills, communication skills, analytical skills, and problem-solving skills. In response to these reports, the AICPA took the first step toward uniform education requirement of 150 credit-hours across CPA licensing jurisdictions. In 1988 the AICPA adopted the prerequisite of 150 credit-hours with an earned baccalaureate degree or advanced degree for AICPA membership for all new members beginning in the

year 2000 (Langenderfer, 1987; Van Wyhe, 2007a, 2007b). Thereafter, state boards of accountancy began adopting the new AICPA rule.

Hawaii, Colorado (subsequently rescinded), and Florida were early adopters of the 150 credit-hours requirement for candidates to sit for the CPA exam, enacted in 1978, 1978, and 1979, respectively (Fuller & Hargadon, 2008). However, the new rule raised harsh criticisms from stakeholders who cited additional cost, reduction of students entering the profession, and decline in CPA candidates as consequences to the additional 30 credit-hours (Allen & Woodland, 2012; Boone, Legoria, Seifert, & Stammerjohan, 2006; Gramling & Rossman, 2013; Soileau, Usrey, & Webb, 2017). As a result, most states established a 120/150 model with at least 120 credit-hours eligibility requirements to sit for the CPA while maintaining the 150 credit-hours eligibility requirement for licensure. With the latest implementation by Colorado in 2015 (Nagle, Menk, & Rau, 2018), the 150 credit-hours requirement has become an accepted prerequisite for CPA licensure by all U.S. jurisdictions, except for the U.S. Virgin Islands.

The literature on the additional 30 credit-hours is mixed. Prior studies (Menk, Nagle, & Rau, 2017; Soileau, Usrey, & Webb, 2017) found CPA candidates with advanced degrees performed significantly better on the CPA exam than candidates who only have an undergraduate degree. Conversely, NASBA (2015) and Gramling and Rossman (2013) found overall pass rates as better after candidates complete an undergraduate degree. Likewise, Trinkle, Scheiner, Baldwin, and Krull (2016) determined that 150 credit-hours requirement to sit for the CPA exam did not influence exam success. Other researchers found master's and M.B.A. degrees positively impact the probability form promotion from senior manager to partner for professionals in public accounting firms (Brink, Norman, & Wier, 2016; McCann & Wilson, 2020). However, in a study by Barrios (2019), the research found no statistical difference in promotion rate for professionals subject to the 150 credit-hours requirement when controlling for age and year individuals entered public accounting.

Prior studies resulted in inconsistent findings on whether the increased hours have increased the quality of candidates or entrants into the profession (Allen & Woodland, 2012; Boone et al., 2006; Gramling & Rossman, 2013; NASBA, 2015; Soileau et al, 2017). To understand what benefits CPA firms, corporations, and accountants (practitioners) perceive from the additional 30 credit-hours, this study examined the following research questions.

RQ1a: *Does the 150 credit-hours requirement have a significant benefit to stakeholders?*

RQ1b: *What additional benefits have been accrued from the additional 30 credit-hours?*

The 150 credit-hours requirement is only a credit-hours requirement. While each licensing jurisdiction has its nuisances for CPA candidacy requirements, there are no specific requirements on courses or programs of study beyond a bachelor's degree by which CPA candidates must obtain the additional 30 credit-hours (NASBA, 2008). As a result, CPA candidates can choose from various educational pathways to obtain the 150 credit-hours required for licensure. These education pathways include a graduate degree such as a master's in business administration (MBA) or a master's degree in accounting (MACC), undergraduate double-major, additional undergraduate or graduate courses (no specific program or degree). A body of research explored the alternative educational pathways and reported diverse results.

In a study of students who anticipated taking the CPA examination, Trout and Blazer (2018) found that of the students who intended to pursue graduate degrees favored MACC over the MBA which is inconsistent with the findings of Albrecht and Sack (2000) and Renner and Tanner (2001). Participants in the Booker, Hill, and Wright (2010) study favored double-major or additional undergraduate courses to attain the 150 credit-hours. Renner and Tanner noted that students who favored the double-major option ranked accounting and either finance or information systems as the most appealing double majors. Finally, Larkin (2014) discovered most students intended to obtain the 150 credit-hours within four years at the undergraduate level before starting their accounting careers.

In the 2018 study of accounting professionals, Du and Schalow (2019) found 47% of respondents indicated a preference in pursuing MACC as the best pathway to obtain the additional 30 credit-hours. For

CPA partners subject to the 150 credit-hours rule McCann and Wilson (2020) discovered most obtained a master's degree (67%) as compared to a double major (27%) to meet the educational requirement. The MACC was the prevalent choice of master's degree (66%) over an MBA (31%). These results are consistent with an earlier study by Donelan and Philipich (2002) that found CPA candidates who met the 150 credit-hours requirement by obtaining a MACC indicated a greater satisfaction in overall academic preparedness for entry into the profession. However, this is contrary to the surveys of academics and non-public accountants (Albrecht & Stack, 2000; Donelan & Philipich, 2020; Renner & Tanner, 2001) who favored the MBA among graduate programs.

There is mixed evidence about which educational pathways align best with the 150 credit-hours requirement. While the MACC degree has been a revenue generator for universities, some including the AICPA are saying an MBA or master's in information technology (MIS) would better prepare professionals if they were to 'do it again' (Bierstaker, Howe, & Seol, 2004; Haen, Vandenberg, Janes, & Conlon, 2013). The universities responded to 150 credit-hours requirement by introducing MACC programs. However, this is inconsistent with the original integrated intent to the requirement and more opportunistic for enrollment (Siegel, Sorenson, Klammer, & Richtermeyer, 2010). Bierstaker, Howe, and Seol (2004) also found students preferred the broad MBA degree, but at the same time, students felt they should have taken more accounting courses to fulfill the requirement despite schools promoting the MACC and/or the MBA as being better aligned with broad intentions of the expanded credit-hours requirement. Consistent with the accounting firms' view of encouraging new hires to be "150 compliant" so they can start employment as quickly as possible (Gramling & Rossman, 2013), students who interned are being mentored to just take any courses (Haen et al., 2013). This "150 compliant" environment is potentially undermining the graduate degree and stressing just get any credits to begin working as quickly as possible (Gramling & Rossman, 2013).

To understand how those subject to the 150 credit-hours requirement obtained the additional 30 credit-hours, this study examined the second research question.

RQ2: What pathways did CPA candidates subject to the 150 credit-hours requirement pursue to obtain the additional 30 credits?

The NASBA, in conjunction with the AICPA, continued steadily to campaign for the need for the 150 credit-hours education requirement. Through the Uniform Accountancy Act (UAA) and Uniform Accountancy Model Rules, NASBA influenced the accounting curriculum and guided licensing jurisdictions in establishing their respective educational requirements (Lawrence & Wright, 2015). The UAA contains education provisions to ensure curriculum flexibility while supporting CPA candidates' preparedness in a rapidly changing business environment (Flesher, 2007; Reckers, 2006). The NASBA attempted to unify CPA licensure requirements across licensing jurisdictions to give more specificity to the 150 credit-hours requirement (Flesher, 2007; Mastracchio, 2008). Within the proposal, NASBA recommended specific courses to enhance a broader set of transferable skills such as communication skills, research skills, and analytical skills as well as credits hours in ethics and professional responsibilities (Breux, Chiasson, Mauldin, & Whitney, 2010; NASBA 2007). Stakeholders' push back resulted in NASBA tabling the proposal. Currently, there is no educational requirement standardization across licensing jurisdictions or distinction from which educational level CPA candidates must obtain the additional 30 credit-hours.

The AICPA asserts the CPA designation is recognized worldwide and fosters public confidence in protecting the public interest by ensuring qualifications of entry-level CPAs (AICPA, 2016). An original purpose of the expanded 150 credit-hours requirement was to increase candidates' global business acumen to sustain public confidence in the profession (Bierstaker et al., 2004). The role of today's accountants and CPAs is no longer just number crunchers, rather their role requires them to be effective communicators of complex financial information who must think critically to advise clients in key business decisions (AAA & AICPA, 2012; Haen et al., 2013). Both the AICPA and Institute of Management Accountants (IMA) have recognized the professional changes and have both updated their competency frameworks.

There is a longstanding argument for soft skills including the ability to present, speak, write, and listen as well as collect, interpret and communicate accounting information clearly (Beard, Schwieger, & Surendran, 2019; Jackson, 2013; Yu, Churyk, & Chang, 2013). This argument continues into today's technology age. Communication and computer skills are consistently ranked highest in demand since Albrecht and Sack (2000) and earlier. Moreover, communication, critical thinking, technical skills, interpersonal skills, and ethics surfaced repeatedly as important attributes of new entrants into the profession (Jackson, 2013; Yu et al., 2013). The expectations have been expanded not only of new entrants to the profession, but the AICPA has made reskilling existing CPAs a top goal (Coffey, 2019). In the early 20th century, the profession wanted CPAs who could communicate complex financial information clearly. If the profession is not adapting to these expectations, it will not be meeting society's expectations.

No one can argue the 21st century has been marked with many changes for the accounting profession; whether these are merely trends or the new norm, the professional accountant needs to "understand the technology and dynamic business processes that run companies" (Pathways Commission, 2012, p. 68). Accountants no longer just process accounting transactions but rather must understand the holistic business process. The 2020 approved changes to the CPA exam reflect the changing landscape of skills required by CPAs. Similarly, the IMA adjusted certain aspects of the CMA exam to incorporate topics of information systems and data analytics (Tysiac, 2019). Furthermore, the AICPA and NASBA collectively is moving forward with the proposed new Core plus one CPA licensure model, with a new CPA exam launch in 2024 (NASBA, n.d.). The proposed CPA licensure model reflects the transformation of the profession and the response is a more holistic change to CPA certification than just the addition of data analytics to the audit section of the exam.

Rapid technological advances in the 21st century are disrupting the current accounting environment and are changing the role and essential skill sets of today's accounting professionals. Driven by client demand, accounting professionals are expected to provide deeper insights, analyze larger data sets, and provide assurance on non-financial subject matters that require skills and techniques not historically feasible (Coffey, 2019). Accounting firms, both large and small, are shifting accounting services and need professionals with strong core technical accounting competencies and information technology aptitude to not be left behind (Coffey, 2019; PWC, 2015). The use of and presence of technology is changing the profession at exponential rates, new entrants need to be adaptable to developing skills and competencies.

With almost two-thirds of accounting graduates ultimately landing in careers outside of public accounting (AICPA, 2019b), many university accounting programs are still designed with a CPA exam focus. Many argue long-term strategic skills in accounting should be considered in accounting education (Siegel, et al., 2010). Yu, Churyk, and Chang (2013) found a gap between intern skills and employer expectations, but upon graduation and one year of professional experience, the expectations were better aligned. There is a growing conversation among stakeholders about how to better prepare accounting students for long-term roles in the many multifaceted accounting careers outside of public accounting as the professional landscape has changed. To assess if and how the additional credits obtained should be prescribed, the study examined the following research questions.

RQ3a: *Should the additional 30 credits-hours beyond a bachelor's degree be more prescriptive?*

RQ3b: *What attributes do accountants feel should be explicit as part of the additional 30 credit-hours requirement for initial CPA licensure?*

METHODOLOGY

An online survey instrument was created, and pilot tested with 13 accounting professionals. Based on feedback from the pilot testing, minor amendments to the questionnaire were made. An invitation to complete the survey instrument was distributed electronically to accounting professionals using the authors' professional network as the authors have a professional accounting background before entering academia. There was a total of 152 responses, 135 were usable responses, and 17 unusable responses as they were

either incomplete or not from the target population. Tables 1 and 2 present a summary of respondents' demographics including age, gender, and employment information (industry and job title). An overwhelming majority of respondents passed the CPA exam (n=120, 88.9%) with 36 licensing jurisdictions represented. Eight respondents answered "no" to passing the CPA exam and seven respondents did not answer the question. The age distribution of the 15 who did not pass the CPA exam was as follows: five were less than 25 years old; four were between 25-34 years old; one was between 35-44 years old; two were between 45-54 years old; two were between 55-64 years old; and, one respondent was over 65 years old.

**TABLE 1
GENDER AND AGE DISTRIBUTION**

Gender	Passed CPA Exam		Age distribution	Passed CPA Exam					
	n =	Percent		n =	Percent				
Female	51	38%	44	37%	<25	9	7%	-	0%
Male	79	58%	71	59%	25-34	47	35%	43	36%
Prefer not to say	5	4%	5	4%	35-44	34	25%	33	27%
Total	<hr/>		<hr/>		45-54	26	19%	24	20%
	135	100%	120	100%	55-64	11	8%	9	8%
					>65	8	6%	11	9%
					Total	135	100%	120	100%

**TABLE 2
INDUSTRY AND JOB TITLE**

Industry employed	Job title
Consulting	Business/financial analyst
CPA firm - local	Controller/chief financial officer
CPA firm - national	Entry-level/staff accountant
CPA firm - regional	Partner/principal
Education	Professor
Financial services	Senior accountant/team lead
Healthcare	Senior manager/director
Manufacturing	Other
Not-for-profit/governmental	Total
Technology	
Other	
Total	

RESEARCH RESULTS

To determine whether there have been significant benefits to stakeholders due to the 150 credit-hours requirement, the participants were asked to rank the benefit to CPA firms, individuals, and the corporate environment using the five-point Likert scale. Forty-seven percent of the participants disagreed or strongly disagreed that significant benefits accrued to CPA firms while 33% strongly agreed or agreed that significant benefits accrued to the CPA firms as a result of the 150 credit-hours requirement. This is an

interesting result given that 37% of the respondents indicated that they held positions in CPA firms. Similarly, 48% disagreed or strongly disagreed that significant benefits accrued to the corporate environment.

However, the survey results indicated mixed opinions on whether participants strongly agreed or agreed (n=57, 42%) or disagreed or strongly disagreed (n=58, 43%) that significant benefits accrued to the individuals due to the 150 credit-hours requirement (See Table 3). Overall there is little agreement on who benefits from the 150 credit-hours requirement, though, the population feels the most benefit is to individuals which supports the AICPA assertion that the expanded 150 credit-hours requirement promotes greater competencies and success in the accounting profession (Albers, 1979; AICPA, 1978).

TABLE 3
STAKEHOLDERS FEEL SIGNIFICANT BENEFITS ACCRUED DUE TO 150 CREDIT-HOURS REQUIREMENT?

	CPA Firms		Individuals		Corporate Environment	
	Total	Percent	Total	Percent	Total	Percent
Strongly agree	19	14%	19	14%	16	12%
Agree	26	19%	38	28%	26	19%
Neutral	27	20%	19	14%	29	21%
Disagree	41	31%	38	28%	43	32%
Strongly disagree	22	16%	20	15%	21	16%
No response	0	0%	1	1%	0	0%
Total	135	100%	135	100%	135	100%

Next, we asked participants what benefits they feel have been accrued from the additional 30 credit-hours. This question extended the study by Bierstaker et al. (2004) who asked students what they believed would be the most positive impact of the additional 30 credit-hours. Table 4 presents the ranked responses for each benefit. Like the results of the first research question, the respondents were divided on the perceived improvement of professional commitment with 42% strongly agreed or agreed and 42% disagreed or strongly disagreed. A majority (n=91, 68%) of the participant disagreed or strongly disagreed that the additional 30 credit-hours contributed to reduced turnover in CPA firms.

When asked to rank the benefit of the additional 30 credit-hours as better use of training resources by CPA firms, only 20% of the participants agreed or strongly agreed the additional 30 credit-hours was a good use of firm training resources while 51% disagreed or strongly disagreed. This result suggests a possible disparity between what accounting educators teach and what practitioners do (Siegel et al., 2010; Van Wyhe, 2007a, 2007b). One notable result is the participants' high ranking (n=63, 47%) of strongly agreed or agreed that the additional 30 credit-hours requirement raised the status of the profession, a long-debated opinion in the literature on the profession's status (Roy & MacNeill, 1967).

**TABLE 4
ADDITIONAL BENEFITS ACCRUED**

	Greater commitment to the accounting profession		Reduced turnover in CPA firms		Better use of training resources by the CPA firms		Raised the status of the profession	
	Total	Percent	Total	Percent	Total	Percent	Total	Percent
Strongly agree	24	18%	5	4%	10	7%	25	19%
Agree	32	24%	10	7%	17	13%	38	28%
Neutral	22	16%	29	21%	39	29%	22	16%
Disagree	36	27%	51	38%	40	30%	31	23%
Strongly disagree	21	15%	40	30%	29	21%	19	14%
Total	135	100%	135	100%	135	100%	135	100%

To investigate the different pathways CPA candidates took to meet the 150 credit-hours, participants were asked to identify the pathways they pursued to obtain the additional 30 credit-hours. Of 120 respondents who passed the CPA exam, the majority (n=94, 78%) were subject to the 150 credit-hours requirement. For the respondents subject to the 150 credit-hours requirement, 55 (59%) obtained an advanced degree beyond a bachelor's degree while 37 (39%) double majored or took additional undergraduate courses to reach the 150 credit-hours. When looking at the trends by decade, respondents pursuing advanced degrees increased from 58% (2000 to 2009) to 65% (2010 to 2019). Also, the results revealed a shifting trend in pursuing an MBA degree over a specialized master's degree, 15% (2000 to 2009) to 29% (2010 to 2019) which is consistent with Bierstaker et al. (2004) findings that more respondents indicated a preference in pursuing an MBA degree over a specialized master's degree. These results are consistent with Bierstaker et al. (2004) and Albrecht and Sack (2000) but oppose the informal mentorship students are receiving on their internship at the accounting firms. Accounting firms recommend becoming "150 compliant" as quickly as possible and are not concerned about the educational pathway (Gramling & Rossman, 2013). See Table 5.

**TABLE 5
YEAR CPA EXAM PASSED AND EDUCATIONAL PATHWAY**

150 credit-hours required				Pathway for additional 30 credit-hours		
Year passed	Yes	No	Total			
1974-1979	-	5	5	Double major	6	6%
1981-1989	1	9	10	Additional undergraduate credits	31	33%
1990 -1999	2	12	14	Combination of graduate and undergraduate courses	1	1%
2000 - 2009	26	9	35	MBA	21	22%
2010 -2019	52	2	54	MS in Accounting and/or taxation	29	31%
Year not disclosed	13	0	13	Masters (other discipline)	5	5%
Total	94	* 37	131	Not disclosed	1	1%
			**	Total	94	100%

*Note: 11 subjects did not pass the exam or did not disclose that they passed but indicated they obtained 150 credit-hours. Six subjects were Entry Level/Staff Accountants, three subjects were Senior Accountant/Team Leads, one subject was Senior Manager/Director, and one was categorized as other.

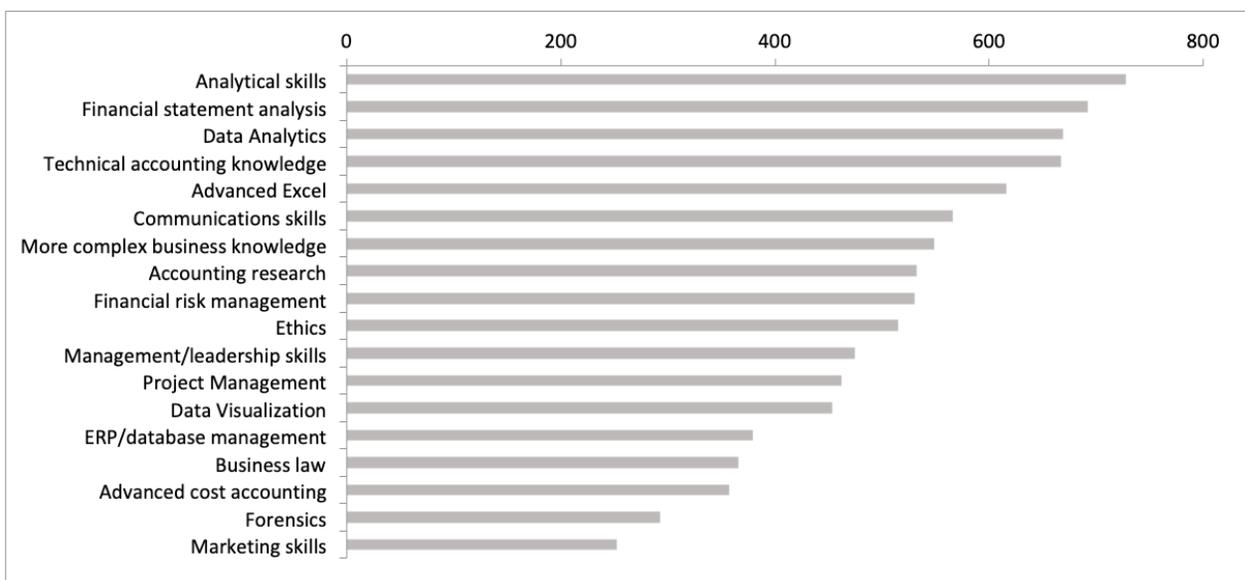
** Four respondents did not answer.

While it appears, there was uncertainty around whether the additional educational requirements accrued significant benefits to stakeholders, a considerable number of participants (n=83, 62%) indicated

that the additional 30 credit-hours required should be defined or more prescriptive. Furthermore, the participants were asked to rank the top 10 most important skills and competencies (out of 18) that they believed should be defined or prescribed explicitly in the additional 30 credit-hours requirement. The findings are aggregated based on participants' rank-ordering the top 10 attributes from most important (10 points) to least important (1 point). Attributes not ranked in the top 10 scored 0. The results are presented in Figure 1.

The responses confirm that the changing landscape of the profession necessitates analytics skills in entry-level professionals (Dzuranin, Jones, & Olvera, 2018; PWC, 2015; Tysiac, 2019). The findings also extend the longstanding discussion on the importance of analytical skills such as critical thinking and communication skills (Albrecht & Sack, 2000; Lawson et al., 2014; Roy & MacNeill, 1967). Additionally, the respondents ranked data analytics and advanced Excel skills among the top five most important attributes that should be explicitly part of the additional 30 credit-hours requirement. The new discussion around what is the 21st century CPA (Coffey, 2019; Tysiac, 2019) and the results in Figure 1, again suggest integration of data analytics in graduate programs would better prepare accounting professionals (Lee, Kerler, & Ivancevich., 2018). These findings may be of interest to accounting educators who have been historically resistant to technology changes in the profession (Senik & Broad, 2011; Witty, McKay, & Ngo, 2016).

FIGURE 1
PARTICIPANTS RANKING OF SKILLS AND COMPETENCIES THAT SHOULD BE EXPLICITLY REQUIRED IN ADDITIONAL 30 CREDIT-HOURS REQUIREMENT



The results follow the prior literature (Bierstaker et al., 2004) in that broader business courses, such as those seen in an MBA degree are aligned with the identified most important skills and competencies. The respondents indicated analytical skills or critical thinking as the most important skill with 78% strongly agreeing or agreeing to the importance of this skill for practicing professionals. Also consistent with prior research, broad communication skills ranked second highest with 67% of respondents strongly agreed or agreed this as an important overall skill.

Moreover, the respondents ranked marketing skills one of the least important skills which according to the literature on professional career paths is a necessary skill for those practicing in the public accounting profession (NASBA, 2015). This result is not surprising given that less than 40% of respondents are employed in the public accounting industry. Finally, while more than 50% of respondents considered

technical accounting knowledge an important skill, it was not ranked as the most important skill for practitioners.

DISCUSSION AND STUDY LIMITATIONS

The results of this study add to the continuing debate on the best educational pathway for individuals seeking CPA certification and the benefits gained from the additional 30 credit-hours requirement. We observed from the results that overall, significantly higher percentage of accounting professionals required to be 150 compliant obtained a graduate degree with the majority earning an MS in Accounting or Taxation. However, the current trend (2010-2019) shows more entrants earned an MBA degree (29%) as compared to the previous decade (15%). This could be students are more aware of the broad expectations of the profession and their long-term career goals. This trend follows the original intention of the expanded education requirement (Bierstaker et al., 2004, Siegel et al., 2010) in that broader business courses, such as those seen in an MBA degree are aligned with the identified most important skills and competencies. The majority of participants responded that the additional 30 credit-hours did not afford any significant benefits to CPA firms, individuals, or the corporate environment.

Respondents were overwhelmingly in favor of the additional 30 credit-hours being defined or more prescriptive. Furthermore, analytical skills or critical thinking skills including data analytics were the top-most important skills the respondents considered essential if the additional 30 credit-hours curricula were defined or more prescriptive. Also, consistent with prior research (Albers, 1983; Albrecht & Sack, 2000; Bedford, 1986; Breaux et al., 2010; Jackson, 2013; Treadway, 1987; Yu et al., 2013), broad communication skills are ranked as one of the top skills. The findings of this study also lent support to existing literature that students need to develop analytical skills, critical thinking, and communication skills as well as possess technical accounting knowledge and more complex business knowledge.

PricewaterhouseCoopers (PwC) (2015) suggested scaffolding analytics into the accounting curriculum beginning in introductory courses with statistics and computing, using data analytics applications in upper-division courses, and advanced computing and statistics in master's level courses. Dzurainin, Jones, and Olvera (2018) looked at teaching analytics in a separate course(s) (focused approach) or integrated into existing accounting courses (integrated approach), finding that 68.5% of faculty wanted a hybrid approach that had both a separate analytics course and integrated analytics into the existing curriculum. Sledgianowski, Gooma, and Tan (2017) called for a common body of data analytics instructional resources. Accounting faculty support teaching analytics instruction to students provided they have sufficient training (Dzurainin et al., 2018).

Combining these findings, one could conclude that new entrants in the profession could benefit from a prescribed educational path or courses with an increased emphasis on developing broad-based knowledge and skills important to practitioners and business in general. Exam criteria are moving further away from traditional financial reporting towards more predictive and analytical skills including higher-order cognitive skills (AICPA, 2016). There is no one best path to use the additional 30 credit-hours, but we suggest mandating that the additional educational hours be earned at the graduate level. This would align with both the original intent of the 150 credit-hours requirement and the broad career opportunities available to graduates.

The main limitation of this study is the potential variability of how respondents interpreted certain terminology in some questions. The individual interpretation of expressions or phrases such as *analytical skills* and *complex business knowledge* may differ depending on the respondent's professional expertise thus limiting a consensus view and validity of responses. Second, the accounting professionals invited to participate were solicited through each researcher's professional network. As a result, the conclusions may not reflect the general inferences about a population. A final limitation to this study was the use of an online survey and the possible low response rate. Fan and Yan (2010) noted that the average response rate of online surveys, on average, is 10% lower than that of mail or telephone surveys. Therefore, the results of this study might have differed had the researchers used an alternative survey delivery mode.

CONCLUSION

While the practitioners participating in this study feel the 150 credit-hours requirement has no significant benefits aside from raising the status of the profession, most can agree it is time to move the conversation to the future on how to best utilize the 150 credit-hours requirement. Professional organizations and accounting educators have made efforts to highlight the importance of information technology skills, communication skills, and critical thinking competencies by updating certification exams and curricula. While the 150 credit-hours requirement set new credit hour mandates on aspiring CPAs, results indicate practitioners would prefer prescribed content in the additional 30 credit-hours and that it includes analytical and broad-based skills. This coincides with the trend identified in the increase in those choosing an MBA over a technical master's degree.

While the CPA Evolution project is revising the CPA licensure model, we posit it is time to review the accounting curriculum to ensure universities are best preparing students for the needs of the accounting profession today. Broad-based analytical, critical thinking, and communication skills integrated into both the undergraduate and the graduate curriculum prepare students for today's technology landscape and adaptable to tomorrow's technology changes. Graduate-level courses require a higher level of cognitive thinking and understanding to solve complex business problems. While this may be uncomfortable for academics, we feel it is in the best interest of the longevity of the profession and best preparing all accounting graduates. As the role of CPAs continues to evolve in light of today's technology revolution, integrating a data-driven mindset into the entire accounting curriculum is key to updating accounting graduates that possess the ability to communicate complex financial information effectively, think critically to advise clients in key business decisions, and deliver business value that society expects from the profession.

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