Accounting education literature review (2017)

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ABSTRACT

This review of the accounting education literature includes 103 articles published during 2017 in six journals: (1) *Journal of Accounting Education*, (2) *Accounting Education*, (3) *Advances in Accounting Education: Teaching and Curriculum Innovations*, (4) *Global Perspectives on Accounting Education*, (5) *Issues in Accounting Education,* and (6) *The Accounting Educators' Journal*. We update 12 prior accounting education literature reviews by organizing and summarizing contributions to the accounting education literature made during 2017. Articles are categorized into five sections corresponding to traditional knowledge bases: (1) curriculum and instruction, (2) instruction by content area, (3) educational technology, (4) students, and (5) faculty. Research rigor of the empirical articles is discussed and critiqued. Suggestions for research in all areas are presented. Articles classified as instructional resources and cases published in the same six journals during 2017 are listed in appendices categorized by the relevant content area.

Keywords:
Assurance of learning
Curriculum and instruction
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Faculty
Instruction by content area
Literature review
Research rigor
Students

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1. Introduction

This review of the accounting education literature includes 103 articles published during 2017 in six journals: (1) *Journal of Accounting Education*, (2) *Accounting Education*, (3) *Advances in Accounting Education: Teaching and Curriculum Innovations*, (4) *Global Perspectives on Accounting Education*, (5) *Issues in Accounting Education*, and (6) *The Accounting Educators' Journal*. As noted in Table 1, this article is the 13th in a series of accounting education literature reviews first published in 1986. The journals reviewed since 1991 are presented in Table 2.[1] We classify a published article as empirical, descriptive, instructional resource, or case. Consistent with prior reviews, an empirical article is one in which conclusions are derived from an analysis of data. Articles that discuss a strategy, describe an innovation, or report student perceptions without statistical analysis generally are classified as descriptive. Table 3 summarizes commonly used abbreviations and corresponding definitions used throughout this article.

[insert Tables 1, 2, and 3 here]

This literature review is the first in the series to tabulate author count by article type. The papers published in the accounting education journals reflect the authorship of 216 individual authors. An analysis of the co-authorship by article type is presented in Table 4: 68% of the articles had two or three coauthors, and 19% were sole-authored across article type. Regarding individual authors, two authors published three articles, and 20 authors published two articles during 2017 (not tabulated).

[insert Table 4 here]

[1] We intentionally limit our analysis to those journals that have accounting education as a primary orientation. We acknowledge that accounting education articles may appear in journals not included in our review.

Tables 5 and 6 provide data about each journal in our review with regard to article type and subject area corresponding to the organization of this review. Table 5 presents a classification of the 103 articles as empirical and descriptive (*n*=61, 59%), instructional resource (*n*=9, 9%), or case (*n*=33, 32%) by each journal reviewed. Table 6 provides an overview of the number of empirical and descriptive articles allocated to subject area for each journal. Two subject areas, curriculum and instruction (*n*=20, 33%) and students (*n*=16, 26%), account for 59% of the empirical and descriptive articles summarized. The remaining empirical and descriptive articles address instruction by content area (*n*=8, 13%), educational technology (*n*=5, 8%), and faculty (*n*=12, 20%).

[insert Tables 5 and 6 here]

Our reviews of empirical articles identify the data collection method, analysis approach, and geographic location of the sample studied. Three tables summarize the empirical articles along these dimensions. In Table 7 we report the frequency of data collection method by section reference within this article and subject area for the empirical articles reviewed. Of the 40 empirical articles, 21 (53%) were based on data collected via survey, six (15%) were based on course performance, and six (15%) were based on published sources. Four of the 40 (10%) articles used more rigorous experimental or quasi-experimental data collection methods and three (7%) used interviews to collect data. We discuss the research rigor of empirical articles in section 7.2 in this article.

Table 8 reports the analysis approaches employed in the empirical articles published in 2017.[2] The analysis approaches were regression (*n*=17, 43%), differences-in-means (*n*=12, 30%), tabulation (*n*=7, 17%), and analysis of variance (*n*=4, 10%). The geographic locations of

[2] For studies that used more than one analysis approach, we identify and describe the most rigorous.

the samples are reported in Table 9. The majority of studies occurred in the US and Canada (*n*=29, 73%), Europe (*n*=6, 15%), and Australia and New Zealand (*n*=4, 10%).

[insert Tables 7, 8, and 9 here]

An instructional resource article describes a specific mode of delivery that can be implemented to facilitate both teaching and learning of content. We tabulated the nine instructional resource articles published in 2017 by primary content area in Appendix A. As an example of an instructional resource, Bagwell, Quick, and Vandervelde (2017) presented an in-class exercise to teach analytical procedures in an auditing course.

A case presents an actual or hypothetical set of information followed by a set of questions or activities that encourage students to understand complexities of a topic. The listing of 33 articles classified as cases appears in Appendix B, identified by the primary content area to which the case best relates. As an example of our classification scheme, Lehmann and Heagy (2017) presented a case study of fraud concerns at a homeowners' association, which is useful for teaching fraud and forensic accounting.[3]

Special themes were included in four of the 17 issues of the accounting education journals (24%) in 2017, consistent with recent years (the average annual number of special-themed issues since 2007 was 4.4). Topics covered in 2017 special-theme issues include the following:

1. Accounting ethics courses (three articles).[4]
2. Active learning (two articles).[5]
3. Big Data (seven articles).[6]

[3] The University of Notre Dame provides a searchable database that includes cases published in *Issues in Accounting Education*, the *IMA Educational Case Journal*, and the *Journal of Accounting Education*. (http://www.cases.ndacct.com).
[4] *Advances in Accounting Education: Teaching and Curriculum Innovations* (Vol. 20).
[5] *Advances in Accounting Education: Teaching and Curriculum Innovations* (Vol. 21).

4. The 2015 Annual Conference of the British and Finance Association's Special Interest Group on Accounting Education (eight articles).[7]

This accounting education literature review is organized by five major sections corresponding to traditional lines of inquiry in the accounting education literature. Section 2 summarizes articles on curriculum and instruction. Section 3 includes articles on instruction by content area, and Section 4 summarizes articles about educational technology. Section 5 reviews articles about students, followed by articles about faculty in Section 6. Section 7 offers a summary and reflections, along with suggestions for future accounting education scholarship.

2. Curriculum and instruction

This section summarizes 12 empirical and eight descriptive articles that address curricular issues, assurance of learning and assessment, core competencies, and instructional approaches. This section contains 33% of the empirical and descriptive articles reviewed in 2017, versus 26% in the 2016 accounting education literature review. Curricular issues include six articles on integrating the curriculum, the impact of the CPA exam on teaching, curricular issues in the UK and Vietnam, and faculty perceptions of the Pathways Commission efforts. Two empirical articles on assurance of learning and assessment investigated the association of class time with course grade and question format with exam performance. Four articles on core competences addressed perceptions of professional skills, oral communications, and implementation of an accounting community of practice. Seven articles on instructional approaches considered active learning, cooperative learning, use of analogies as a teaching strategy, and strategies for introducing problem difficulty to students. Table 10 presents a topical summary of the reviewed articles related to curriculum and instruction.

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[6] *Journal of Accounting Education* (Vol. 38).
[7] *Accounting Education* (Vol. 26, No. 5-6). Marriott (2017) presented an overview and synthesis of the eight articles.

[insert Table 10 here]

2.1. Curricular issues

Pincus, Stout, Sorensen, Stocks, and Lawson (2017) surveyed attendees (*n*=61) at the 2017 Accounting Program Leadership Group conference regarding four issues: (1) offering new on-campus programs or revising existing programs, (2) creating new online degrees or certificate programs, (3) strategic changes in faculty structure, and (4) changes to the financial model for their programs. One noteworthy finding was that only eight of 61 respondents (13%) reported that their programs had developed significant new sources of revenue during the past three years. The authors discussed how financial challenges and technology advances are affecting higher education, in general, and accounting education, in particular. The traditional higher education financial model includes variables such as student demographics, student debt, government support, and donations. Some technology components of higher education are the growth of off-shore work, automation of accounting and finance tasks, and a growing gap between skills needed in the workplace and skills possessed by college graduates. The authors observed that technology has not significantly changed what is taught in accounting education programs or how accounting educators teach, emphasizing a point that has been made numerous times in the literature. The declining number of college-age students and the financial constraints on students and institutions will require that universities and accounting programs respond to remain financially viable. The authors cautioned that the time for making successful changes is growing shorter, and that the threat to institutions is imminent. Many of the important themes regarding the higher education environment discussed in Pincus et al. (2017) were set forth in Rebele (2002) who noted the urgency for accounting education programs to address changes in their external environments.

Bui, Hoang, Phan, and Yapa (2017) investigated the influence that stakeholders for one state-owned university in Vietnam had on developing and delivering an accounting curriculum. The authors interviewed accounting program stakeholders (n=17), including academic administrators, accounting faculty (referenced as lecturers), students, employers, a professional body, and a government official. Interviews revealed that the Vietnamese government exercised limited control over accounting education, while employers and a professional accounting body had the most influence on the curriculum development and approval process. Accounting faculty did not participate in curriculum decision-making, although they decided on course delivery methods, teaching materials, and assessment. Accounting educators will find this article useful for understanding the Vietnamese higher education system.

Lawson, Pincus, Sorensen, Stocks, and Stout (2017) illustrated how the life-cycle approach can be useful for managing the process of developing a more integrated accounting curriculum. The 2017 article built upon prior work (Lawson et al. 2014; 2015) on developing a curriculum that integrates accounting competencies with foundational and broad management competencies. The authors identified and discussed five stages in the curriculum change process: (1) implementation, (2) growth, (3) maturity, (4) decline, and (5) renewal or continual decline. Resources in the article included (1) a checklist of issues that faculty and administrators should consider at each stage of the curriculum change process, and (2) a spreadsheet for integrating required topics into courses and integrating courses into programs.

Fogarty and Lowensohn (2017) described changes to the CPA exam and noted how the recent revision attempted to address learning objectives beyond mere memorization of technical material. The authors identified a gap between purposes of the CPA exam and academic values related to technical content, skills development, and realism or relevance of students' education.

According to the authors, instructors focus their teaching mostly on technical material, which relates to the content of the CPA exam, and less on broader skills needed by candidates and the relevance or realism of education to candidates' first positions in public accounting. While noting that the CPA exam belongs to the accounting profession (with minimal input from accounting educators), the authors suggested that academicians can adjust their teaching to prioritize individual technical topics (not all topics are equally important) and devote more attention to core competency development.

Sledgianowski, Gomaa, and Tan (2017) discussed the integration of Big Data, technology, and information systems in the accounting curriculum. The framework was based upon accounting competencies, foundational competencies, and broad management competencies. The authors discussed how to introduce Big Data into five functional accounting areas: (1) financial, (2) managerial/cost, (3) auditing, (4) AIS, and (5) taxation.

Soroosh and Krahel (2017) surveyed accounting faculty (*n*=231, 7.2% response rate) regarding their perceptions of the six Pathways Commission recommendations (AAA, 2017). Participants were asked to offer an opinion on the practicality of each recommendation (six-point scale), followed by a rating of the ability of their institution to implement the recommendation (six-point scale). The mean ratings of each of the two scales were tabulated. Although no statistical tests were conducted, the authors concluded that the results showed the participants were supportive of the recommendations, but generally pessimistic about the ability of their respective institutions to translate the recommendations into practice. The authors suggested that barriers may exist that prevent implementation of the recommendations.

Ellington (2017) addressed the need for UK accounting education to embrace a program to meet the changing needs of business. The authors reviewed relevant literature, identified

impediments to change, and encouraged the development of a program of change in the UK similar to the Pathways Commission (AAA, 2017).

2.2. Assurance of learning and assessment

Cordis and Pierce (2017) investigated the association of class time with academic performance across business disciplines, including accounting. The data analyzed consisted of academic records for business students (*n*=10,039) attending one US university during the 2013-2014 academic year. Using regression analysis, the authors found that course grade was significantly lower for early-morning classes, with a stronger influence in quantitative business disciplines (accounting and finance). In addition, the scheduling effect was stronger when only one section of the course was offered (as opposed to multiple sections that afforded student choice). The authors concluded that class scheduling may be an important variable in improving student academic performance.

Jonick, Schneider, and Boylan (2017) investigated whether exam questions formatted as multiple-choice or fill-in-answer affected students' performance in an introductory accounting course. The study was conducted in two phases: (1) students (*n*=681) responding to two experimental questions on one final exam, and (2) students (*n*=423) answering six experimental questions on a subsequent semester final exam. Students responded to quantitative exam questions in either a multiple-choice or fill-in-answer format. Phase 1 results showed a significant difference in performance for one of the two questions, suggesting the need to study which type of question yielded better student performance. Phase 2 results revealed that students answering questions in the multiple-choice format significantly outperformed students answering the same questions in the fill-in-answer format for five of six experimental questions. The

authors concluded that introductory accounting students' exam performance was affected by question format.

2.3. Core competencies

Stephenson (2017) developed an Accounting Community of Practice (ACOP) (Wenger, 1998; 2000) at one US university. Creating the ACOP was motivated by the accounting profession's position that students should develop core competencies as identified by professional organizations. The ACOP was structured around five core competencies: (1) problem-solving/perception, (2) interaction/interpersonal, (3) leadership, (4) communication, and (5) project management/technical. Descriptive survey data from students (n=320) in eight courses (financial, managerial, and cost) over four years were presented. The article is relevant to educators considering how communities of practice apply to accounting education.

Chaffer and Webb (2017) surveyed trainees (n=1,496, 26% response rate) in the UK preparing for the Chartered Institute of Management Accountant (CIMA) exam regarding their perceived competency on 16 skills important for professional accountants. Completing an online questionnaire, university graduate and non-graduate trainees indicated their perceived competency in a skill compared to the level of competency they expected to have achieved at their career stage. Respondents also indicated the extent to which their training setting (university or non-university) had exploited opportunities to develop the 16 skills. For 12 of the 16 skills, most respondents indicated that they were not at the expected level of competency for their career stage. Respondents generally felt more competent in personal skills, such as time management and professional demeanor, and less competent in organizational skills, such as delegation and conflict management. Logistic regression results revealed that graduate and non-graduate trainees had similar levels of perceived competency, indicating that factors other than a

university education affected skills development. Results of this study suggested that students' educational experience is not wholly responsible for core competency development.

Howcroft (2017) surveyed accounting educators (*n*=122, 29.3% response rate) in the UK and Ireland during 2008 regarding the importance of 21 vocational skills for graduates beginning their careers as management accountants. Ranked most highly were skills related to communications, problem-solving, working with others, and knowing information sources. Rated as less important were presentation skills and lifelong learning. The results were compared to results of a similar survey of practitioners (Arquero Montaño, Donoso Anes, Hassall, & Joyce, 2001) and revealed that accounting practitioners and educators ranked the importance of the 21 skills differently.

Shauki and Benzie (2017) used a group oral presentation assignment to investigate self-management skills of Australian graduate accounting students (*n*=90). The oral presentations were professionally recorded and assessed by student groups, tutors, and the instructor. Open-ended survey questions were used to gather student responses (*n*=56) about the project. Students reported that self-management improved their comfort and confidence in making oral presentations and heightened their awareness of opportunities for improvement.

2.4. Instructional approaches

Phillips (2017) conducted a fully-crossed, between-subjects experiment using students from first- and second-year business courses at a Canadian university. Students were recruited for the out-of-class experiment and compensated for participation. The experiment was conducted in two phases: (1) a practice phase (*n*=185), and (2) a testing phase (*n*=171). Each phase had two conditions, providing four experimental cells, to which students were randomly assigned at initiation. The experimental context was cost-volume-profit analyses. In the practice

phase, students were given assigned readings and immediately given nine practice problems, including the solutions. The nine questions were composed of three questions each for unit cost, profit, and sales. Half of the students received the nine questions grouped according to topic (unit cost, profit, sales), and the other half received the same nine questions but in an interleaved order such that no two adjacent questions dealt with the same topic. After completing the practice problems, students were asked two questions regarding their study plan and confidence in their ability to perform on a test covering cost-volume-profit analysis. The testing phase consisted of an exam and post-experimental questionnaire about academic background. Students either took the test immediately after, or one week after, the practice phase. Differences-in-means analysis showed that students in the grouped-problem treatment group in the practice phase earned more points per minute, completed the problems more quickly, and scored higher than those in the interleaved group. Further, grouped-problem students demonstrated greater overconfidence in ability (as measured by test results) and reported a decrease in intended study time. Results of ANOVA showed that scores on the one-week-delay test were higher for students faced with the more challenging practice phase (interleaved). Accordingly, the author concluded that grouping practice problems together, versus presenting problems in interleaved order, did not lead to longer-term improved performance.

Riley and Ward (2017) investigated the relative efficacy of passive and active learning in an undergraduate AIS course at a large US university. The 3x1 quasi-experimental approach implemented three conditions across five sections of the course (n=191, 100% response rate): (1) individual-active learning (n=67), (2) cooperative-active learning (n=47), and (3) passive learning (n=77). For both of the active conditions, students were given an in-class assignment to complete either individually (individual-active) or in small groups (cooperative-active). In the

passive condition, students were provided information in a traditional lecture before being given the assignment. All students were given the same nine experimental questions on the final exam. Differences-in-means analysis and ANCOVA revealed that the individual-active learning condition was associated with higher scores on the nine questions than the other two conditions. The study results indicated that relatively simple active-learning tasks may be useful in enhancing learning outcomes.

Blankley, Kerr, and Wiggins (2017) surveyed US accounting educators (*n*=300, 11.2% response rate) about the courses and academic level they taught, the learning activities they employed, how those learning activities should be optimally implemented, and why those activities were selected for use. Tabulated responses showed that approximately 50% of class time was dedicated to lecture or other passive learning delivery, 35% was allocated to active learning methods, with the remaining 15% spent on assessment activities. Results of tests for differences (chi-square and t-test) revealed that group assignments, use of case material, and oral presentations were more prevalent in graduate courses. Small-group activities were more frequently used in classes with fewer than 100 students, and video and webcast presentations were used more frequently in classes with more than 50 students. More experienced faculty tended to use less in-class time for students to work problems and implemented fewer small-group activities than inexperienced faculty. The authors suggested that the baseline established in this study should be useful in tracking trends in teaching techniques in accounting education.

Huber, Law, and Khallaf (2017) described three active learning tasks intended for use in introductory financial accounting courses: (1) interview someone who uses financial statements to learn how the information is used, (2) write a paper about the implementation of internal controls at a specific company, and (3) perform financial statement analysis as a member of an

assigned team. The authors provided the instructional materials and discussed the perceived efficacy of the assignments.

Bay and Pacharn (2017) investigated the use of group exams in a cooperative learning setting. Students in two sections of a graduate intermediate accounting course at one Canadian university participated and formed their own groups (minimum of three students). The course grade was determined by two midterm exams, one final exam, and four quizzes. One course section (n=24) took the first midterm as a group exam, and the second section (n=23) took the second midterm as a group exam. Group was significantly associated with midterm exam scores. Learning style gender, age, GPA, a measure of test anxiety, and group were not significantly associated with final exam score; however, midterm 1 grade and midterm 2 grade were significantly associated with final exam score.

Adelopo, Asante, Dart, and Rufai (2017) examined the types of reflection exhibited by students enrolled in an auditing and assurance module at a UK university, as well as the association between group diversity (gender, nationality) and the quality of reflection. Groups of students (n=41) prepared an essay on auditor independence along with a group reflection report. Content analysis of the group reflection reports showed that most groups reflected on how they completed the task and on the content of their essays. Very few groups exhibited *premise reflection*, which is a higher-order type of reflection focused on why the group thought or acted in certain ways. Students were permitted to self-select into groups, which resulted in very little within-group diversity, somewhat defeating the purpose of the study.

Tucker (2017) discussed the benefits of using analogies as a tool for conveying concepts in an MBA-level accounting course. The author suggested that the complexities of accounting are made more tractable by employing a familiar method to describe the unfamiliar. Students

reported favorable views of the analogy approach and broadly commented that the approach assisted their learning.

3. Instruction by content area

Table 11 provides an overview of the eight articles (two empirical and six descriptive) about instruction in five different content areas: AIS (three articles), ethics (three articles), financial accounting (one article), and taxation (one article). This section contains 13% of the articles reviewed consistent with 13% in the 2016 accounting education literature review.

[insert Table 11 here]

3.1. Accounting information systems (AIS)

Janvrin and Watson (2017) discussed the importance of Big Data in an accounting context. Information systems technology must be integrated throughout the accounting curriculum to prepare students for career success. The authors identified sources of datasets, software, and other materials useful for existing accounting courses and curricula.

McKinney, Yoos, and Snead (2017) discussed the topic of Big Data (velocity, variety, and volume) for business, accounting, and accounting education, and provided a literature review and explanation of important concepts. Seven topics were discussed that are important to a Big Data course. A specific example was included based on the authors' own senior level/masters Big Data courses at two US universities. The specific context was the assessment of the economic viability of product lines. Accounting educators interested in offering a Big Data course will find the extensive discussion to be informative.

Schneider, Becker, and Berg (2017) detailed a three-step approach for introducing spreadsheet design: (1) planning the spreadsheet, (2) executing the spreadsheet plan, and (3) testing and documenting the completed spreadsheet. The authors provided a list of the most

common spreadsheet errors made by students and identified how the three-step approach mitigates the tendency to make those errors.

3.2. Ethics

Kelly (2017) discussed how leadership topics were integrated into a graduate accounting ethics course at one US institution. The literature supporting integrating leadership topics was reviewed. Motivated by Rest's Four Component Model (Rest 1994; Rest, Narvaez, Babeau, & Thoma, 1999), Kelly created five course objectives and created a 15-week course. Kelly described the leadership topics for each week, including reflection assignments, cases used, and the report project. The article would be useful to accounting educators either teaching or contemplating updates to an accounting ethics course.

Shaub (2017) discussed a three-hour accounting course offered at one US institution that emphasized how to make ethical decisions. The course was developed over seven years and offered as a five-week class with readings, exams, presentations, outside speakers, and reflection. The course was based upon Plato's three concepts of wisdom (sophia, phronesis, and episteme) and identified five fallacies of thinking: (1) egocentrism, (2) omnipotence, (3) omniscience, (4) invulnerability, and (5) unrealistic optimism. A course schedule and implementation strategies were included in the article.

Blanthorne (2017) summarized past discussion about incorporating ethics into the accounting curriculum. She articulated the major questions that ethical training in accounting should answer, organized by who should teach, what should be taught, and how a standalone course can be structured.

3.3. Financial accounting

Bergner and Brooks (2017) examined the relationship between score on an accounting cycle exam and two exam review alternatives: (1) playing Monopoly®, and (2) traditional review (via practice set), or no review. Students enrolled in an introductory financial accounting course at one US university voluntarily signed up for review and were assigned to playing Monopoly® (*n*=29) or traditional (*n*=16) review groups, and those who did not sign up (*n*=129) were the no review (control) group. Exam score was significantly associated with cumulative GPA and with review group; number of credit hours taken during the semester was not significant (based on ANCOVA). In post hoc paired-comparison tests, the exam grade for the Monopoly® group was greater than the no review group, but no other paired-comparisons were significant.

3.4. Taxation

Noga and Rupert (2017) used a variety of pedagogical approaches in graduate tax classes at two US universities to reduce students' written communication apprehension (WCA). The pedagogical approaches included increasing writing opportunities, progressively increasing the grade weighting for four writing assignments over the course of a semester, providing students with models and examples for writing assignments, and giving feedback on students' writing. Students' WCA was measured at the beginning and end of the semester. Students (*n*=78, 53% response rate) completed both written comprehension measures and answered a survey about their confidence in completing writing assignments. Analysis showed that the pedagogical approach was effective in reducing students' WCA over the semester. Students with higher WCA scores at the beginning of the semester benefited more from the pedagogical approach than those with lower WCA scores.

4. Educational technology

Table 12 provides an overview of five (8%) empirical educational technology articles, which is a decline from the 2016 accounting education literature review of 12%. Topics include student preferences for content delivery, employer perceptions of online education, ePortolio assessment, and whiteboard voice-over videos. We classified articles as related to technology and curricular issues and technology-based learning and assessment.

[insert Table 12 here]

4.1. Technology and curricular issues

Taplin, Kerr, and Brown (2017) surveyed undergraduate accounting students (*n*=311, response rate not reported) at a large public Australian university regarding preferences for content delivery method. The first of three questions asked students to allocate an education endowment of $150 across three alternative delivery methods: (1) lecture, (2) tutorial, and (3) online discussion. The cost of lectures, tutoring with 20 students, tutoring with 40 students, and online instruction was $10, $70, $35, and $10 per hour, respectively. In the second question, students indicated the preferred time allocation within lecture across four categories: (1) teacher explanation of theory and content, (2) teacher explanation of practice problems, (3) students completing questions followed by teacher explanation, and (4) question-answer dialogue between students and teacher. The third question asked students to allocate tutorial time across the same four categories. Results of tabulation and differences-in-means analyses revealed four findings: (1) students spent more on tutorials and selected less lecture time (possibly due to price differential), (2) face-to-face classes were preferred over online delivery, and (3) within both lecture and tutorial formats, student preferred teacher-centered rather than student-centered

activities. The authors suggested that teachers may need to balance delivery approaches to student preferences.

4.2. Technology-based learning and assessment

Mihret, Abayadeera, Watty, and McKay (2017) examined whether using ePortfolio assessment with weekly case assignments met several higher-order learning objectives, including critical thinking, professional judgment, and problem-solving in an online undergraduate auditing course taught at an Australian university. The ePortfolios were used to gather student (*n*=288) perceptions about whether participating in online discussions for weekly case assignments helped achieve the identified learning objectives. Research questions were addressed based on student comments from the submitted ePortfolios. The authors suggested that using cases in an online auditing course can be effective for developing higher-order learning objectives.

Grossman and Johnson (2017) conducted an online survey of members of the Kentucky CPA Society (*n*=130, 8.3% response rate) to explore how potential employers perceive online accounting education. The survey was composed of three parts. In the first part, the participants were presented with summary job information for three different job applications: education, work experience, extra-curricular activities, recommendations, a preliminary interview, and the educational environment in which the applicant completed course work. In the survey material, applicant A reported a traditional classroom education, applicant B reported a hybrid academic background including components of online and traditional, and applicant C reported an online academic background. Survey participants were asked to report (seven-point scale) the likelihood of offering a job to each of the applicants. In the second part to the survey, participants rated (seven-point scale) the importance of the job applicants' educational environment, reputation of

applicant educational institution, accreditation status of the institution, and accreditation status of the graduating department. The third part of the survey collected demographic information on the participants. Results of differences-in-means and ANOVA showed that (1) potential employers preferred multiple degrees (bachelor's degree in accounting as second degree, online MBA, traditional MBA) even when one degree was delivered online; (2) the reputation of the institution was more important than the educational environment; and (3) business accreditation was more important than separate accounting accreditation. Employers with online educational experience were more likely to hire an online graduate, viewed online education as rigorously competitive, and perceived that soft skills are better developed in an online format.

Massoudi, Koh, Hancock, and Fung (2017) studied whether student use of online multiple choice questions that accompany the course text improves course performance in an introductory accounting course in Australia (n=424). Use was measured as both formative or summative, where formative refers to student practice and summative is learning measurement. Using regression analysis with the dependent variable of exam grade, the primary finding was that students who used online multiple choice questions for formative purposes earned higher exam grades. The authors concluded that exam performance improved for students who actively used an online learning resource.

Lento (2017) demonstrated that student outcome measures benefit from incorporation of whiteboard voice-over videos as part of the educational delivery. The method was implemented in an introductory accounting course (n=122) and an intermediate accounting course (n=26) at one Canadian university. Throughout the course, students accessed and downloaded course lecture notes, cases dealing with specific content, topical tutorials from the publisher, and instructor generated whiteboard voice-over videos. The percent of each type of online resource

downloaded by each student was recorded. Student GPA was regressed on the percentage of each type of downloaded online resource. A positive association existed between course grade and the percentage of cases and whiteboard voice-over videos downloaded. The author concluded that the use of whiteboard voice-over videos may be an effective way to augment content delivery and student learning outcomes.

5. Students

Table 13 identifies 16 articles (13 empirical and three descriptive) about students, classified by academic major and career, student skills and characteristics, and approaches to learning and assessment. This section contains 26% of the articles reviewed for 2017, which is a decrease from the 2016 accounting education literature review of 33%. Academic major and career includes nine articles (seven empirical and two descriptive) considering CPA exam pass rates and career intentions. Three empirical articles address student skills and characteristics, including psychopathic tendencies, decision-making skills, and personality. Four articles (three empirical and one descriptive) cover approaches to learning and conceptions of learning.

[insert Table 13 here]

5.1. Academic major and career

Schoenfeld, Segal, and Borgia (2017) surveyed upper-level undergraduates (n=213, 94.3% response rate) at a US university to investigate the association between the intent to gain CPA certification and self-efficacy and outcome expectations. The dependent variable was the students' reported likelihood (measured on a five-point scale) that they would attain the CPA certification. Students were asked separately to evaluate the importance of seven outcomes (higher income, job security, advancement potential, status and prestige, interesting work, work independence, and challenging work) and their confidence that the CPA certification would lead

to the outcome. Both the importance and confidence in the CPA certification resulting in that outcome were evaluated on a five-point scale. An outcome index was derived by multiplying the importance and confidence scores for each outcome and summing them. Students also answered a single question (five-point scale) regarding confidence that they could attain CPA certification. Regression analysis revealed that outcome expectations and self-efficacy were positively associated with the intent to pursue the CPA certification. The authors noted that faculty can actively develop self-efficacy and outcome expectations through positive reinforcement of learning gains and demonstration of tangible career outcomes.

Soileau, Usrey, and Webb (2017) investigated the association between educational requirements to take the CPA exam and pass rate scores. The sample (n=387 observations representing 51 jurisdictions) was derived from the *Annual NASBA Uniform CPA Examination Candidate Performance Guide* from 2006-2013. Regression results revealed that candidates taking the exam in jurisdictions requiring 150 hours outperformed candidates in jurisdictions requiring 120 hours to take the exam. CPA candidates in provisional jurisdictions, those jurisdictions that allowed candidates to sit for the exam prior to obtaining the required hours, outperformed candidates from both the 120- and 150-hour jurisdictions in pass rate and average score. The authors suggested that the 120-hour and 150-hour jurisdictions consider the benefits of providing candidates the option of taking the CPA exam under provisional status.

Rowbottom (2017) examined the effectiveness of admission policies designed to increase the number of undergraduate students from underrepresented socio-economic groups in the UK. Paired sample t-tests were used to compare the relative performance of "contextual offer students" with the performance of students not from underrepresented populations, but holding equivalent qualifications. Matched pairs of undergraduate accounting and finance students

(*n*=328) from one university were used in the analysis. The results showed that contextual offer students had significantly higher average grades in the first two years of the program than did students not from underrepresented populations. No significant difference in performance between the two groups was found for year three or, overall, for all three years. The conclusion was that students from underrepresented populations performed no worse in the accounting and finance undergraduate program than students not from underrepresented populations who possessed equivalent qualifications.

Hart, Kremin, and Pasewark (2017) surveyed US accounting master's students (*n*=127, 100% response rate) to investigate factors associated with the career intentions of accounting interns. Students having internship experience completed a pre-internship survey followed by a post-internship survey concerning their organizational and professional commitment and career plans. The post-internship survey also included questions regarding internship tasks and environment. Changes in organizational commitment and professional commitment were the dependent variables in a first set of regressions. Changes in career length intentions (CLI), a single question measure about the length of time a student intends to engage in the profession, was the dependent variable in a second regression. Results of the first regression indicated that challenging tasks and favorable coworker relationships were positively associated with increased organizational and professional commitment. The number of hours worked per week was negatively associated with change in organizational commitment, but not significantly associated with changes in professional commitment. The only significant finding of the second regression was that change in organizational commitment was positively associated with increased CLI. The authors concluded that internship experiences were significant in changing organizational commitment, professional commitment, and intended length of career in the profession.

Gabre, Flesher, and Ross (2017) surveyed Hispanic accountants in the US (*n*=196, response rate not reported) about their perceptions of CPA certification. The survey consisted of 21 statements (five-point scale) and questions to collect demographic information. Tests for differences-in-means and chi-squared tests for differences in proportions suggested that exam affordability, the presence of job incentives, and being male were all positively associated with the likelihood of pursuing CPA certification. Having insufficient information regarding the CPA exam and family responsibilities were negatively associated with the likelihood of seeking certification. The authors suggested that additional research into the perceptions and motivations for Hispanic accountants is warranted.

Crossman (2017) surveyed students enrolled in introductory management accounting or an upper-level accounting course at a US university (*n*=416, response rate not reported) to assess knowledge about public and private accounting professions. The first portion of the survey collected basic demographic information and asked students to identify a preferred career path. Students were then presented with differing requirements for public and private accounting careers and a matrix of pros and cons for both career choices. After viewing the information, students were again asked about their preferred career path. Tabulation and differences-in-means analyses showed that most students originally preferred public accounting, but after presentation of the new information most students indicated a preference for a career in private practice. The author suggested that alternative career information should be made explicit to students.

Martin and Waymire (2017) surveyed accounting students at one public US university to investigate perceptions of the potential earnings, nonmonetary benefits, and financial and job security of a governmental accounting career. Students enrolled in a required financial accounting course were used as the control group (*n*=72), and students enrolled in an elective

governmental and non-for-profit accounting (GNP) accounting course were used as the treatment group (n=166). The first part of the survey provided six general job characteristics (e.g., potential for earnings, job security, and work-life balance) and asked that the students report their perceptions (on a five-point scale) that a governmental accounting job would meet those characteristics. The second part of the survey listed 36 pairs of descriptive anonyms. Students were asked to indicate (five-point scale) which word of each pair was descriptive of a governmental accounting job. Both groups completed both parts of the same survey at the beginning and again at the end of the semester. Differences-in-means analysis revealed a pronounced favorable shift in the treatment group's perception of careers in government accounting. The authors asserted that the results suggested the importance of including a GNP course in accounting curricula.

Anderson and Novakovic (2017) documented the challenges students faced when transitioning back to full-time study following an internship or placement experience in the UK. They suggested that, in light of student feedback, the benefits and linkage between academic and practical experiences required more in-depth exploration in the curriculum.

Murphy (2017) described the results of interviews with accounting professionals in Ireland regarding the perceptions of work placement and transition back to full-time student and emphasized the need for better management by faculty.

5.2. Student skills and characteristics

Blay and Fennema (2017) conducted a longitudinal, quasi-experimental study to determine if accountants' decision-making skills are attributable to innate talent and self-selection, or if the skills are developed through the educational experience. They began with a survey of students enrolled in a principles of accounting course at a large public US university

(*n*=1,110, 79% response rate). Students were asked to complete three tasks designed to assess their pre-academic abilities and skills. The first task had students complete the horse trader problem. The second task was a series of real estate investment decisions. The third task was a decision to repair or replace a delivery truck. Students also answered questions used to proxy for the energy invested in the tasks, a series of demographic and educational background and choice of major questions, and questions related to risk preferences and profit maximization. Univariate and regression analyses showed two primary results. First, those intending to follow an accounting career showed no difference on the initial evaluative tasks than students intending a nonaccounting career. Second, a positive association existed between performance on the initial evaluative tasks and performance in accounting coursework (GPA) and the CPA exam (pass rate and score). The authors concluded that accounting majors begin their academic pursuit with greater abilities, at least in some of the accounting related tasks, but that students did not self-select into an accounting program based on that advantage. In a follow-up study to evaluate improvement relative to the initial evaluative tasks, the sample of students was contacted proximal to graduation and asked to complete the same three tasks in an online format (*n*=1,100, 28% response rate). Univariate and regression analyses show that students graduating with an accounting major (1) scored higher on the follow-up tasks than nonaccounting majors and (2) demonstrated greater improvement over their performance on the initial tasks than nonaccounting majors.

Holt, Burke-Smalley, and Jones (2017) surveyed students (*n*=139, 100% response rate) enrolled in an intermediate accounting course at two US universities to evaluate the association between student personality traits and career interests. Personality traits were assessed based on five characteristics: (1) conscientiousness, (2) openness to experience, (3) emotional stability, (4)

extroversion, and (5) agreeableness. Students were asked to respond to the five-point scale questionnaire twice (once in terms of self-evaluation, and once in terms of the ideal auditor characteristics). Differences-in-means analysis demonstrated a significant gap between self-assessed traits and the student-reported ideal auditor traits for all five personality characteristics. In an analysis where auditing (the ideal job) was regressed on the students' assessment of the five ideal auditor traits and two work experience variables, only emotional stability, open to experience, and work experience as an auditor were significant. In a second regression where auditing (the ideal job) was regressed on the students' self-assessment of the five personality traits and two work experience variables, only work experience as an auditor was significant. The authors concluded the following: (1) those students with auditing experience were more likely to report auditing as their preferred job; (2) students with higher levels of openness to experience tended to prefer an auditing career path; and (3) students preferring a career in auditing viewed the ideal auditor as extroverted, agreeable, and open to experience.

Bailey (2017) investigated and documented the levels of psychopathy in a national sample (n=253) of US accounting students. The web-based survey consisted of demographic data along with Levenson's Self-Report Psychopathy Scale and other questions to measure attitudes about unethical practices (Levenson, Kiehl, & Fitzpatrick, 1995). Analysis of variance, regression analysis, and a heat map graphic were employed to address four research questions (RQ). The first RQ compared accounting student psychopathy scores to other populations and found the accounting student scores to be relatively low, which is positive news for the accounting profession. The second RQ considered whether scores changed over time, and analysis demonstrated that psychopathic scores were stable. The third and fourth RQs addressed the association of psychopathy with unethical practices and found it to be significant. The author

indicated that accounting researchers who use psychological constructs should consider using psychopathy as a covariate or moderating variable.

5.3. Approaches to learning and assessment

Everaert, Opdecam, and Maussen (2017) surveyed undergraduate students (*n*=388, response rate not reported) at a Belgian university enrolled in the second semester of a first-year accounting course series to investigate the association among academic performance, motivation, and learning style. The survey (seven-point scale) was administered on the last day of class and included questions regarding time spent each week studying for the course, motivation (intrinsic and extrinsic goal orientation), and learning approach (deep and surface). Academic performance was measured as the grade on the final exam and academic ability as the first semester GPA. A series of regressions revealed that both intrinsic and extrinsic goal orientation were positively associated with a deep learning style. Only intrinsic goal orientation was found to be associated with surface learning. Deep learning was associated with higher academic performance, and surface learning was associated with lower academic performance. The association between learning style and academic performance was robust to the inclusion of time spent studying, gender, and academic ability.

Abhayawansa, Bowden, and Pillay (2017) identified the dominant conceptions of learning of undergraduate accounting students (*n*=207) at an Australian university. Conceptions of learning were determined from students' responses to a single question: "What does learning mean to you?" Five conception of learning categories were identified, ranging from lower-order "learning as an increase in knowledge" to higher-order "learning as changing as a person." The vast majority of accounting students (83% of second-year students and 72% of third-year students) exhibited lower-order conceptions of learning. Logistic regression results showed some

evidence that third -year accounting students were more likely to exhibit higher-order conceptions of learning than were second-year students. The authors concluded that a relationship exists between learning context and students' adoption of higher-order conceptions of learning.

Moilanen (2017) studied conceptions of learning of students (*n*=336) who completed written case assignments in a management control course taught at a Finnish university. Conceptions of learning, or students' approaches to learning, were identified through analysis of learning diaries that students (*n*=1,320) submitted with their case assignments. A *reproductive conception of learning*, where students focus on acquiring facts, was most commonly used; these students did not use higher-level conceptions of learning to complete cases assigned later in the course. Older students were more likely to integrate learning with earlier experiences than were younger students, while younger students were more likely to adopt learning approaches that focused on acquiring facts. Gender and major (accounting or nonaccounting) were not significantly associated with conceptions of learning. Some evidence was found that higher course grades were associated with higher-level conceptions of learning, although the author cautioned that this finding may be due to a "generous" grading system.

Teixeira and Gomes (2017) described the results of interviews with Portuguese students who commented on their own learning profiles and learning outcomes. Four profiles were identified: (1) deep learning, (2) dissonant learning, (3) surface learning, and (4) strategic/surface learning. Two learning outcomes were identified: (1) cohesive/deep, and (2) fragmented/surface.

6. Faculty

Table 14 identifies eight empirical and four descriptive articles related to faculty classified as research, teaching, and other faculty issues. This section contains 20% of the articles

reviewed for 2017, which is the same number of articles but an increase in percentage from the 2016 accounting education literature review of 16%. Seven articles (five empirical and two descriptive) relate to research issues. Two empirical articles were reviewed on teaching issues, and three (one empirical and two descriptive) on other topics such as faculty credentials.

[insert Table 14 here]

6.1. Research

Apostolou et al. (2017b) analyzed publications in six accounting education journals[8] for the period 1997-2016 and reported on observed trends in a variety of areas. Analyses of trends of total article counts revealed an increase in the number of articles per year. Tests for changes in proportions showed that the categorical mix of article type (empirical, descriptive, instructional resource, case) had altered over time. Of interest was the observed positive trend in the number of empirical articles and the shift in the subject matter covered within the empirical work. Details about the number of special-themed issues were tabulated and discussed. Improvements in research rigor were identified. The authors demonstrated evidence of an emerged knowledge base by presenting examples in three areas: (1) assessment and assurance of leaning, (2) faculty research productivity, and (3) student approaches to learning. Suggestions for future research to extend the developing accounting education knowledge base were offered.

Ameen and Guffey (2017) examined the first 16 volumes of *Advances in Accounting Education* (2006-2015), and tabulated extensive information about the articles and authors. Using Google Scholar citation analysis (citation counts and citation rates), they identified the top 20 of the 195 articles published (by 383 individual authors) during that period, and they identified the 30 top authors. All articles were classified by topic (faculty issues, student issues,

[8] *Accounting Education*, *Advances in Accounting Education: Teaching and Curriculum Innovations*, *Global Perspectives on Accounting Education*, *Issues in Accounting Education*, *Journal of Accounting Education*, and *The Accounting Educators' Journal*.

accounting program issues, classroom pedagogical issues, and teaching cases) and research method (eight classifications). The proportions of articles classified by category were compared to publications in the *Journal of Accounting Education* and *Issues in Accounting Education*. For example, excluding cases, 53.76% of articles regarding classroom pedagogical issues were published in *Advances in Accounting Education*, while the corresponding percentages were 51.54% and 40.70%, respectively, in the *Journal of Accounting Education* and *Issues in Accounting Education*.

Zimmerman, Fogarty, and Jonas (2017) investigated the extent to which faculty practice experience and professional credentials were associated with academic research success. Faculty (*n*=1,253) were selected from the 2012-2013 *Hasselback Accounting Faculty Directory*. The data were obtained from curriculum vitae, and research productivity metrics were based on published research rankings.[9] Regression and t-test analyses were used to test four hypotheses. Findings revealed that accounting practice experience was negatively associated with publications in top journals, and individuals with more practice experience were less likely to have graduated from higher-prestige doctoral programs. The authors argued that accounting is not an applied discipline because a major part of accounting scholarship does not address the needs of accounting practice. The authors also discussed the schism between accounting practice and academic accounting.

Reinstein and Apostolou (2017) sampled US accounting programs (*n*=38) regarding journal lists used to evaluate faculty research productivity. Using the Glover, Prawitt, Summers, and Wood (2012) classification, schools in the sample represented thirteen top 75 programs, twenty non-top 75 programs, and five urban non-doctoral programs. The 38 schools identified 359 journals ranked (A+, A, A-. B, or C). Using the Glover et al. (2012) journal classification as

[9] http://www.byuaccounting.net/rankings/univrank/rankings.php

top 6, next 9, and next 12 (total 27 journals), the percentages of journals for each classification were presented. For example, in the top 6 journals, at least 35 of the schools ranked four journals as A+ (*Journal of Accounting and Economics, Journal of Accounting Research, The Accounting Review,* and *Contemporary Accounting Research*); 27 ranked *Accounting, Organizations and Society* as A+ (and five as A); and 26 ranked *Review of Accounting Studies* as A+ (and six A and one as A-). Other frequently ranked journals were listed. The authors also discussed the in-depth process that Wayne State University used to revise its journal list. The journal classification data and discussion of the Wayne State process would be particularly helpful for any school developing or revising a journal list.

Curtis (2017) noted the limited use of action research in accounting education (eleven articles published from 1996-2011) and provided background on and a conceptual framework for action research.[10] The author described the process of developing an action learning case for an introductory accounting course. Survey responses from students (n=474 in fall and 253 in spring, 69% overall response rate) were used to assess whether the use of the case met learning goals. Accounting researchers interested in using action research would benefit from the rich discussion in the article.

Jones (2017) addressed the contribution to accounting education of engagement between accounting education researchers and practitioners. The article identified potential benefits to researchers and practitioners, discussed a specific case of collaboration, and listed specific benefits identified by practitioners from engaging with accounting education researchers.

Apostolou et al. (2017a) reviewed articles published in six accounting education journals during 2016: (1) *Journal of Accounting Education*, (2) *Accounting Education*, (3) *Advances in*

[10] Defined as ‘‘…a family of approaches that integrate theory and action with the goal of addressing important organizational, community and social issues together with those who experience them’’ (Coghlan & Brydon-Miller, 2014, xxv).

Accounting Education: Teaching and Curriculum Innovations, (4) *Global Perspectives on Accounting Education*, (5) *Issues in Accounting Education*, and (6) *The Accounting Educators' Journal*. Articles were summarized as empirical, descriptive, instructional resource, or case. The authors presented an analysis of research rigor and made suggestions for future research.

6.2. Teaching

Mortenson and Sathe (2017) interviewed a US university's graduate accounting alumni about student evaluations of teaching (SET). Students were admitted to a closed cohort and progressed through the one-year Master of Science in Accounting (MSA) program. A primary goal of the study was to examine the role of group processes (conformity, peer pressure, deindividuation, and group polarization) and the SET experience. Therefore, the interviews were not about an individual course but about the cohort experience. Three general research questions were investigated: (1) to what extent did SET scores tend toward extremes (using data for 17 instructors from 45 courses over five cohorts), (2) how did students describe their engagement with the SET process (using interviews), and (3) what group processes or other characteristics might be associated with the SET process (using interviews)? Regarding question one, the authors analyzed all SET scores for all programs (41 MSA and 156 non-MSA) and selected the courses for which the SET score was two standard deviations lower than the overall mean. For MSA classes, 14.63% (6 of 41) were low outliers, and for all non-MSA courses, 3.21% (5 of 156) were low outliers. The proportion of outlier SET scores in MSA classes was significantly higher than for non-MSA courses. These results were primarily driven by one cohort's evaluation of four instructors. Regarding questions 2 and 3, unstructured group interviews of 15 alumni were conducted (using two to five people per group from five cohorts). The current cohort was not used because of potential conflict of interest. Comments were coded as primary

(*n*=202), secondary (*n*=78), or tertiary (*n*=20) by two coders, and interrater reliability was assessed. The comments resulted in 17 categories combined into five themes: (1) common experience, (2) communication, (3) SET, (4) group process, and (5) student-instructor relationships. The article provided discussion of the responses grouped by theme.

Wygal, Stout, and Cunningham (2017) surveyed six recipients of the American Accounting Association's Cook Prize for teaching excellence about effective and ineffective teaching behaviors.[11] Cook Prize winners were asked to provide three to five behaviors that lead to effective teaching and three to five behaviors that may result in ineffective teaching. The positive behaviors were grouped into six categories: (1) class session learning environment, (2) student focus, (3) preparation and organization, (4) importance of the accounting practice environment, (5) passion/enthusiasm and dedication/commitment, and (6) course learning environment. The negative behaviors were grouped into five categories: (1) negative/uncaring attitudes about students in class, (2) improper course preparation/organization, (3) faculty/deficient course-delivery skills, (4) teaching/assessment mistakes, and (5) rigid/inflexible/inaccessible demeanor. Details about each positive and negative category were discussed, and the results were compared to Wygal and Stout (2015).

6.3. Other faculty issues

Smith and Emerson (2017) examined the professional credentials, work experience, and publication activity for all graduates of US accounting doctoral programs from 1994-2003 (with further separation into five-year sub-periods) using *Hasselback Accounting Faculty Directories* from 2014 and 2015, faculty vitae, department websites, and surveys. Schools were separated into top 75 accounting research institutions for (*n*=1,315), and 37 other schools (*n*=687) based on

[11] The survey instrument was taken from Stout and Wygal (2010) and Wygal and Stout (2015).

Glover et al. (2012).[12] The percentage of faculty who were CPA or inactive CPA at the top 75 schools was significantly lower than for faculty at other schools. For faculty with at least one professional credential, 57.41% of faculty at the top 75 schools had a least one professional/practice credential, while 75.98% at other schools had a least one professional credential; the difference was significant for the total period and each subperiod. Further, tax and auditing faculty had significantly higher percentages of at least one credential than faculty in cost/managerial, financial, and other areas. Faculty at non-top 75 schools had significantly more work experience than those at top 75 schools. Faculty with professional credentials had significantly more professional publications and significantly fewer top-tier publications than those without professional credentials, for both the total period and each of the sub-periods. Data for full-time non-tenure-track faculty were presented for the top 75 schools (percent with credentials, work experience, publications) and for adjunct faculty (credentials, work experience).

Showalter and Bodtke (2017) described how to successfully integrate professionally oriented faculty (POF) into accounting departments using the Pathways Commission's (AAA, 2014) principles to integrate professionally oriented faculty. Examples of how POF have made the transition to accounting departments were provided. The authors recommended that schools adopt the POF Integration Principles to maximize the numerous benefits.

Ellington and Williams (2017) examined the relationship between UK accounting programs and professional accountancy bodies (PABs). Seven different PABs, which have different standards for professional certification, accredit UK university undergraduate accounting programs (universities may be accredited by more than one PAB). Therefore, the PAB standards affect the accounting curriculum at accredited schools. Students who complete an

[12] Sample sizes for individual tests differ based upon data availability.

accredited accounting degree are exempt from some portions (topics) of professional exams. The authors used semi-structured interviews of faculty (*n*=18) at UK research and teaching universities to investigate the impact of PAB accreditation. Many topics were explored related to why the school sought accreditation (e.g., student recruitment, employment opportunities for graduates), perceived issues with accreditation (e.g., technical vs. academic training, relationship between university exams and professional exams), and what an accounting curriculum might be without accreditation.

7. Summary and suggestions for future scholarship

7.1. Summary

Apostolou et al. (2017b) analyzed accounting education journal article output for the 1997-2016 period. They reported that for the 10-year period ended in 2016, the average annual production was 115.0 total articles with 40.4 (36%) empirical and 37.1 (32%) descriptive. A total number of 103 articles were published in 2017 with 40 (39%) empirical and 21 (20%) descriptive. A comparison between the current review and the 10-year averages revealed a slight decline in the total number of articles, an average production of empirical articles, and a significant decline in descriptive articles (relative to the most recent 10-year period).

We tabulated empirical work (*n*=40) by content area for the current review (Tables 6, 7, and 8) and compared it against the accounting education journal article output reported by Apostolou et al. (2017b). We then computed the proportions of articles by content area for the 10-year period ended 2016 as 26% for curriculum and instruction, 14% for instruction by content area, 12% for educational technology, 31% for students, and 17% for faculty. We calculated the proportions of empirical work in 2017 (untabulated) and reported 30% for curriculum and instruction, 5% for instruction by content area, 13% for educational technology, 33% for

students, and 20% for faculty. We observed that the empirical article coverage in the current review is comparable to that over the last decade[13] except for the proportion of articles in instruction by content area. We echo the following observation (Apostolou et al., 2017b, 3):

> At this level of inspection, the persistent concentration of empirical work in areas of students and curricular issues indicates that researchers find that topics dealing with how students learn and how material is structured and delivered are the most important aspects furthering the accounting education discipline.

Nine instructional resource articles (9% of all articles published) were identified and tabulated in Appendix A. We defined an instructional resource as an article that provides specific ways to facilitate learning, but without providing a real or hypothetical situation requiring student analysis. The proportion of instructional resource articles was 9% for both 2016 and 2015. In addition, the proportion of instructional resource articles published in 2017 was consistent with the 7% average reported by Apostolou et al. (2017b) for the 1997-2016 period.

Cases included in this review are summarized in Appendix B by primary content area. Thirty-three cases were published in 2017, representing 32% of all articles published in the accounting education journals reviewed. The proportion of cases is an increase over the 21% published in both 2016 and 2015, and exceeds the proportion reported by Apostolou et al. (2017b) for the 20-year period ended 2016. Notably, the proportion of cases published in 2017 is larger than any proportion observed in any one year over the entire 1997-2016 timeframe.

The remainder of Section 7 is organized as follows. Section 7.2 discusses research rigor and recommendations for empirical methods for future scholarship. Section 7.3 provides recommended avenues of inquiry for future scholarship. We offer concluding comments in Section 7.4.

[13] Comparisons against the proportion of articles over the entire 20 years (1997-2016) from the data provided in Apostolou et al. (2017b) lead us to the same conclusion.

7.2. Research rigor

Table 7 reports the data acquisition methods for the empirical articles published in 2017. Survey remained the most popular method of data acquisition (53%), followed by course performance (15%), and published sources (15%). Quasi-experiment and interviews each represented 7%. We identified one article using a pure experimental data collection approach (3%) in the current review. Table 8 presents the analytical approaches used in the empirical articles. Regression was the most popular analysis approach (43%), followed by differences-in-means (30%), tabulation (17%), and analysis of variance (10%).

Apostolou et al. (2017b) examined the trends in accounting education from 1997-2016 and reported on, among other aspects of the literature, research rigor of the 20-year period. They observed a shift from the proportion of descriptive articles toward more empirical articles, suggesting an increase in the rigor with which accounting education inquiries are made. Apostolou et al. (2017a) observed a migration toward more rigorous analytical methods (i.e., regression, analysis of variance, path analysis) over the 2010-2016 period. They also reported that the use of rigorous data acquisition methods (i.e., experiment, quasi-experiment, and student course performance) demonstrated a slight decline over the same period. Consistent with Apostolou et al. (2017a, 2017b), we observe continued concentrated reliance on less rigorous data acquisition methods, with ongoing concentration in more rigorous analytics. As we have stated in prior reviews, as the knowledge base expands and the accounting education literature matures, we anticipate an overall migration toward greater rigor and an increased focus on explanatory, rather than descriptive, inquiry.

We encourage continued movement toward more rigorous methods and approaches. We identify two articles, one employing a quasi-experimental design and one experiment as

exemplars of the suggested migration in design and analysis. We highlight the Blay and Fennema (2017) study as an exemplary application of a longitudinal quasi-experimental study that directly assessed the conditioned effect of the academic treatment. We acknowledge that longitudinal studies such as this one are risky in terms sample attrition. In the specific case of this study, the secondary sample of 308 represents a 74% loss (from the original 1,110) in sample size; yet, the results are able to directly inform accounting educators regarding the efficacy of a specific educational approach. By strict definition, the study is not an experiment due to lack of randomization; however, due to the pre- post-test nature and inclusion of a non-randomized control group in the design, statistically valid and generalizable results are obtained.

We identify Philips (2017) as an exemplar of a fully randomized experimental design. Randomization is a core aspect in assessing causal relationships, and it was implemented well in this study with a relevant question and findings that contribute to the accounting education knowledge base. Because the specific educational treatment is experimentally isolated, the result is more likely to be causal to student outcomes.

As in prior literature reviews within this series, we advocate for an increase in generalizability through broader sampling (e.g., culture, instructor, course, institution). We continue to encourage inquiries designed to identify causes of observed and known outcomes rather than those that merely replicate prior work in new settings without incremental benefit to the knowledge base. Beginning with this review we also encourage the use of longitudinal approaches (e.g., panel data sets) to not only ascertain cross-sectional differences, but to inform how those difference (and treatments) affect, and in some cases cause, desired outcomes.

7.3. Suggestions for future research

7.3.1. Knowledge base in accounting education

Analysis of two decades of accounting education publication trends revealed the need to develop and refine knowledge bases (Apostolou et al., 2017b). *The Routledge Companion to Accounting Education* (Wilson, 2014) consists of 30 chapters that address a wide range of topics essential to appreciating current accounting education practice and research, including a historical perspective. We suggest this resource as a starting point to the development of future scholarship in accounting education. Education research should be implemented with a focus on furthering the knowledge bases as opposed to replicating known phenomena.

7.3.2. Cultural diversity

A need exists for diversity of sample represented in empirical and descriptive articles. Most samples are drawn predominantly from English-speaking nations (Table 8). Examples of articles from different cultures include Vietnam (Bui et al., 2017), Hispanic accountants in the US (Gabre et al., 2017), Belgian students (Everaert et al., 2017), and Portuguese students (Teixeira & Gomes, 2017). Faculty must teach to a more diverse student population as schools compete for international students to meet enrollment goals and as the US population becomes increasingly diverse. The need for research on how to adjust pedagogy for the culture shift is needed. In addition, understanding cultural barriers to employment and professional certification is important because placement and alumni success is essential to institutional missions.

7.3.3. Journal lists and research productivity metrics

At many institutions, journal lists are used both to measure the quality of faculty research productivity and to signal where faculty should target submissions. Research assessing the quality of journals and research productivity (e.g., Glover et al., 2012) has been developed by general surveys of faculty or of faculty at certain schools (e.g., doctoral granting). The process of constructing journal lists has resulted in great disparity in journal rankings by different

institutions, and this disparity is likely driven by the different types of institutions (e.g., national doctoral granting school versus regional teaching school). For example, an "A" journal at one school might be a "B" journal at another school, or a new administrator might impose changes to alter the composition of the journal list after the faculty have directed publication efforts to the supplanted list. Consistency of measurement is important to permit faculty mobility across institutions, and to encourage retention within a school. Journal quality in many cases is dynamic and may depend upon the editor, editorial board, acceptance rates, and impact factors.

Pressures on faculty to publish a sufficient quantity of articles have spawned the growth of so-called predatory journals. The proliferation of predatory journals suggests that, in part, faculty across all disciplines may be using them to meet tallies required for promotion and tenure or accreditation publication credentials. Kolata (2017) reported that 10,000 predatory journals exist across disciplines, approximately equal to the number of legitimate journals. Research is needed on how to address this growing problem and its infiltration into genuine scholarship.

7.3.4. The infrastructure of higher education

Institutions face significant financial pressures as existing sources of funding become constrained and as new sources of funding become scarce. Technology is continuously changing. Degree programs are offered in a variety of contexts to accommodate students who prefer online degrees. Artifacts of traditional classrooms include SET scores, the age-old tenure model, and teaching to the technical part of the CPA exam or other professional exams (as opposed to developing core competencies). Whether these features should/will remain or be enhanced should be addressed by future research.

7.3.5. Students

Students remain a popular area of research, and classrooms offer a rich environment to experiment with pedagogical techniques that should be shared with the academy. Researchers

have an opportunity to launch from the growing knowledge base of *what is*, and delve deeper in to *why* and *how*. For example, our knowledge about the incomplete connection that exists between student academic experiences and professional realities (e.g., work-life expectations, professional certifications) has been substantively established. The observed disconnection now requires action by the academy to incorporate learning tasks that close that gap. In particular, we now need to identify and evaluate the types of educational interventions that close this gap most effectively.

Additionally, much remains to learn regarding the innate characteristics and background knowledge students bring to the academic experience and how those factors interact in driving career choices and ultimate success in the profession. Notwithstanding the challenges associated with longitudinal studies (e.g., time to complete the study, participant retention), the value of such approaches is that the transformation from student to professional can be viewed in the context of the academic and professional experiences (e.g., Blay and Fennema, 2017).

7.4. Concluding comments

In the series of accounting education literature reviews, we have advocated for the study of multiple courses, instructors, and institutions to increase external validity. Extant research tends to be focused at one institution in a single course. We note Noga and Rupert (2017) studied pedagogical interventions in graduate tax classes at two universities as an example of a multi-institutional study. We continue to call for collaborative research of this nature. We acknowledge that it is more difficult to assess educational interventions across courses and institutions.

Table 1
Accounting education literature review series.

Reference	Time period covered
1. Apostolou, Dorminey, Hassell, and Rebele (2018)	2017
2. Apostolou, Dorminey, Hassell, and Rebele (2017a)	2016
3. Apostolou, Dorminey, Hassell, and Rebele (2016)	2015
4. Apostolou, Dorminey, Hassell, and Rebele (2015)	2013–2014
5. Apostolou, Dorminey, Hassell, and Watson (2013)	2010–2012
6. Apostolou, Hassell, Rebele, and Watson (2010)	2006–2009
7. Watson, Apostolou, Hassell, and Webber (2007)	2003–2005
8. Watson, Apostolou, Hassell, and Webber (2003)	2000–2002
9. Apostolou, Watson, Hassell, and Webber (2001)	1997–1999
10. Rebele, Apostolou, Buckless, Hassell, Paquette, and Stout (1998a)	1991–1997 (part I)
11. Rebele, Apostolou, Buckless, Hassell, Paquette, and Stout (1998b)	1991–1997 (part II)
12. Rebele, Stout, and Hassell (1991)	1985–1991
13. Rebele and Tiller (1986)	Prior to 1985

Table 2
Journals reviewed in the accounting education literature review series.

	Period covered by review:									
	1991-1997(a)	1997-1999	2000-2002	2003-2005	2006-2009	2010-2012	2013-2014	2015	2016	2017
Journal of Accounting Education	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Accounting Education	(b)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Advances in Accounting Education: Teaching and Curriculum Innovations	(c)	✓	✓	✓	(d)	✓	✓	✓	✓	✓
Global Perspectives on Accounting Education	(e)	(e)	(e)	✓	✓	✓	✓	✓	✓	✓
Issues in Accounting Education	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
The Accounting Educators' Journal	✓	(f)	(f)	(g)	✓	✓	✓	✓	✓	✓

(a) *Accounting Perspectives* is included in the 1991-1997 review, but is excluded thereafter because after 1997 its focus shifted away from education-related articles.
(b) Not reviewed prior to 1997.
(c) Known as *Accounting Education: A Journal of Theory, Practice, and Research* for the 1991-1997 review.
(d) No issue published in 2006.
(e) No issues published.
(f) Volumes 11, 12, 13, and 14 (1999-2002) not reviewed in this series.
(g) Included in the 2006-2009 review.

Table 3
Summary of common abbreviations.

Abbreviation	Definition
AAA	American Accounting Association
AACSB	The Association to Advance Collegiate Schools of Business
AIS	Accounting information systems
CIMA	Chartered Institute of Management Accountants
CPA	Certified Public Accountant
GNP	Government and not-for-profit accounting
GPA	Grade point average
IFRS	International Financial Reporting Standards
NASBA	National Association of State Boards of Accountancy (US)
IFRS	International financial reporting standards
PAB	Professional accountancy body (UK)
POF	Professionally oriented faculty
SET	Student evaluation of teaching
WCA	Written communication apprehension

Table 4
Summary of author count by article type.

Article type	Total articles	Author count per article: One author	Two coauthors	Three coauthors	Four coauthors	Five coauthors
Empirical	40	9	14	12	5	0
Descriptive	21	7	7	4	1	2
Instructional resource	9	2	4	3	0	0
Case	33	2	18	8	5	0
Total	103	20	43	27	11	2
Percentage of total	*100%*	*19%*	*42%*	*26%*	*11%*	*2%*

Note: 216 individual authors contributed to publishing the 103 empirical articles, descriptive articles, instructional resources, and cases.

Table 5
Article classification by journal.

Journal	Articles summarized: Empirical[a]	Descriptive[b]	Total	Appendix A: Instructional resources	Appendix B: Cases	Grand total
Journal of Accounting Education	5	5	10	3	9	22
Accounting Education	16	9	25	0	0	25
Advances in Accounting Education: Teaching and Curriculum Innovations	7	5	12	1	0	13
Global Perspectives on Accounting Education	1	0	1	1	3	5
Issues in Accounting Education	10	2	12	4	18	34
The Accounting Educators' Journal	1	0	1	0	3	4
Total	40	21	61	9	33	103
Percentage of total	*39%*	*20%*	*59%*	*9%*	*32%*	*100%*
Comparative data from prior year literature review (2016)	48	28	76	10	22	108
	44%	*26%*	*70%*	*9%*	*21%*	*100%*

(a) Empirical articles derive conclusions from an analysis of data.
(b) Descriptive articles discuss strategies, describe innovations, or report student perceptions without statistical analysis.
(c) Instructional resources are articles that provide guidance on how to implement teaching strategies or projects.
(d) Cases describe actual or hypothetical situations that require student analysis.

Table 6
Number of empirical (E) and descriptive (D) articles by section reference and subject area.

	Section reference and subject area:											
	2. Curriculum and instruction		3. Instruction by content area		4. Educational technology		5. Students		6. Faculty		Total summarized articles	
Journal	E	D	E	D	E	D	E	D	E	D	E	D
Journal of Accounting Education	0	2	0	2	1	0	2	0	2	1	5	5
Accounting Education	7	3	0	1	2	0	7	3	0	2	16	9
Advances in Accounting Education: Teaching and Curriculum Innovations	1	2	2	3	0	0	1	0	3	0	7	5
Global Perspectives on Accounting Education	1	0	0	0	0	0	0	0	0	0	1	0
Issues in Accounting Education	2	1	0	0	2	0	3		3	1	10	2
The Accounting Educators' Journal	1	0	0	0	0	0	0	0	0	0	1	0
Subtotal by article classification	12	8	2	6	5	0	13	3	8	4	40	21
Total by section reference and subject area		20		8		5		16		12		61
Percentage of total		*33%*		*13%*		*8%*		*26%*		*20%*		*100%*
Comparative data from prior year literature review (2016)		20 *26%*		10 *13%*		9 *12%*		25 *33%*		12 *16%*		76 *100%*

Note: Refer to Table 4 for an overview of article production by journal.

Table 7
Data collection method used in empirical articles (*by frequency count*).

Section reference and subject area	Survey	Course Performance	Published source	Quasi-experiment	Interview	Experiment	Total
2. Curriculum and instruction	5	2	1	2	1	1	12
3. Instruction by content area	1	0	0	1	0	0	2
4. Educational technology	2	1	1	0	1	0	5
5. Students	10	3	0	0	0	0	13
6. Faculty	3	0	4	0	1	0	8
Total	21	6	6	3	3	1	40
Percentage of total	*53%*	*15%*	*15%*	*7%*	*7%*	*3%*	*100%*
Comparative data from prior year literature review (2016)	24 *50%*	5 *10%*	11 *23%*	7 *15%*	1 *2%*	0 *0%*	48 *100%*

Table 8
Analysis approach used in empirical articles (*by frequency count*).

Section reference and subject area	Regression	Differences-in-means	Tabulation	Analysis of variance	Path Analysis	Total
2. Curriculum and instruction	4	3	3	2	0	12
3. Instruction by content area	0	1	0	1	0	2
4. Educational technology	2	1	1	1	0	5
5. Students	8	4	1	0	0	13
6. Faculty	3	3	2	0	0	8
Total	17	12	7	4	0	40
Percentage of total	*43%*	*30%*	*17%*	*10%*	*0%*	*100%*
Comparative data from prior year literature review (2016)	21 *44%*	11 *23%*	8 *17%*	6 *12%*	2 *4%*	48 *100%*

Table 9
Geographic location of sample used in empirical articles (*by frequency count*).

Section reference and subject area	US and Canada	Australia and New Zealand	Europe	Asia and Africa	Multinational	Total
2. Curriculum and instruction	8	0	3	1	0	12
3. Instruction by content area	2	0	0	0	0	2
4. Educational technology	2	3	0	0	0	5
5. Students	9	1	3	0	0	13
6. Faculty	8	0	0	0	0	8
Total	29	4	6	1	0	40
Percentage of total	*73%*	*10%*	*15%*	*2%*	*0%*	*100%*
Comparative data from prior year literature review (2016)	37 *77%*	5 *11%*	3 *6%*	2 *4%*	1 *2%*	48 *100%*

Table 10
Overview of curriculum and instruction articles (Section 2).

	Reference	Type*	Topic
2.1.	***Curricular issues***		
	Bui et al. (2017)	E	Vietnamese accounting curriculum
	Ellington (2017)	D	Need for programmatic curricular change in UK
	Fogarty & Lowensohn (2017)	D	Impact of CPA exam on teaching strategies
	Lawson et al. (2017)	D	Integrated accounting curriculum management
	Pincus et al. (2017)	D	Themes influencing higher education environment
	Sledgianowski et al. (2017)	D	Integration of big data into curriculum
	Soroosh & Krahel (2017)	E	Faculty perceptions of Pathways Commission's goals
2.2.	***Assurance of learning and assessment***		
	Cordis & Pierce (2017)	E	Association of class time on course grade
	Jonick et al. (2017)	E	Exam performance affected by question format
2.3.	***Core competencies***		
	Chaffer & Webb (2017)	E	Perceptions of professional skill competencies
	Howcroft (2017)	E	Ranking the importance of professional skills
	Shauki & Benzie (2017)	D	Oral presentations to promote communication skills
	Stephenson (2017)	E	Accounting Community of Practice (ACOP)
2.4.	***Instructional approaches***		
	Adelopo et al. (2017)	E	Group diversity and quality of group reflection
	Bay & Pacharn (2017)	E	Group exams in cooperative learning
	Blankley et al. (2017)	E	Survey of faculty on active learning pedagogy
	Huber et al. (2017)	D	Active learning tasks in financial accounting
	Phillips (2017)	E	Difficulty of practice directly related to course grade
	Riley & Ward (2017)	E	Active learning effectiveness
	Tucker (2017)	D	Using analogies to teach accounting concepts

*Empirical (E) or descriptive (D) article

Table 11
Overview of articles about instruction by content area (Section 3).

	Reference	Type*	Topic
3.1.	***Accounting information systems (AIS)***		
	Janvrin & Watson (2017)	D	Big Data teaching resources
	McKinney et al. (2017)	D	Big Data course
	Schneider et al. (2017)	D	Strategy to teach spreadsheet design
3.2.	***Ethics***		
	Blanthorne (2017)	D	Structure of accounting ethics course
	Kelly (2017)	D	Leadership topics in ethics courses
	Shaub (2017)	D	Accounting ethics course
3.3.	***Financial accounting***		
	Bergner & Brooks (2017)	E	Monopoly™ as a means to teach accounting cycle
3.4.	***Taxation***		
	Noga & Rupert (2017)	E	Student writing apprehension in taxation classes

*Empirical (E) or descriptive (D) article

Table 12

Overview of articles about educational technology (Section 4).

	Reference	Type*	Topic
4.1.	***Technology and curricular issues***		
	Taplin et al. (2017)	E	Student preferences for content delivery
4.2.	***Technology-based learning and assessment***		
	Grossman & Johnson (2017)	E	Employer perceptions of online accounting education
	Lento (2017)	E	Benefits of whiteboard voice-over videos
	Massoudi et al. (2017)	E	Online multiple choice questions impact course grade
	Mihret et al. (2017)	E	Student perceptions of ePortfolio assessments

*Empirical (E) or descriptive (D) article

Table 13
Overview of articles about students (Section 5).

	Reference	Type*	Topic
5.1.	***Academic major and career***		
	Anderson & Novakovic (2017)	D	Transition from internship back to class
	Crossman (2017)	E	Career path preferences
	Gabre et al. (2017)	E	Hispanic accountants pursuit of CPA credential
	Hart et al. (2017)	E	Career intentions of accounting interns
	Martin & Waymire (2017)	E	Student exposure to GNP creates career interest
	Murphy (2017)	D	Perceptions of continuing professional development
	Rowbottom (2017)	E	Under-represented student admits and success
	Schoenfeld et al. (2017)	E	Self-efficacy, outcome expectations, and CPA intentions
	Soileau et al. (2017)	E	CPA pass rates and educational requirements
5.2.	***Student skills and characteristics***		
	Bailey (2017)	E	Psychopathy levels in accounting students
	Blay & Fennema (2017)	E	Decision-making skills and career choice
	Holt et al. (2017)	E	Personality and interest in accounting career
5.3.	***Approaches to learning and assessment***		
	Abhayawansa et al. (2017)	E	Conceptions of learning
	Everaert et al. (2017)	E	Academic performance, motivation, and learning style
	Moilanen (2017)	E	Conceptions of learning
	Teixeira & Gomes (2017)	D	Learning profiles of Portuguese students

*Empirical (E) or descriptive (D) article

Table 14
Overview of articles about faculty (Section 6).

	Reference	Type*	Topic
6.1.	***Research***		
	Ameen & Guffey (2017)	E	Analysis of articles in accounting education
	Apostolou et al. (2017a)	D	Accounting education literature review (2016)
	Apostolou et al. (2017b)	E	Analysis of trends in accounting education literature
	Curtis (2017)	E	Using action research in accounting education
	Jones (2017)	D	Collaboration between academics and practitioners
	Reinstein & Apostolou (2017)	E	Journal list development process
	Zimmerman et al. (2017)	E	Faculty with practical experience and research output
6.2.	***Teaching***		
	Mortenson & Sathe (2017)	E	Effect of group processes on SET scores
	Wygal et al. (2017)	E	Effective teaching behaviors
6.3.	***Other faculty issues***		
	Ellington & Williams (2017)	D	UK curriculum and professional accountancy bodies
	Showalter & Bodtke (2017)	D	Integration of professionally oriented faculty
	Smith & Emerson (2017)	E	Credentials and publications of doctoral graduates

*Empirical (E) or descriptive (D) article

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Appendix A. Instructional resources organized by primary content area.

During 2017, the journals covered by this literature review published nine instructional resources, constituting 9% of the 103 articles published. These resources included creative ways to teach concepts. We identified the instructional resource articles in alphabetical order by six primary content areas: AIS, auditing, GNP, IFRS, managerial accounting, and taxation.

Instructional resources by primary content area

AIS

1. Frownfelter-Lohrke, C. (2017). Teaching good Excel design and skills: A three spreadsheet assignment project. *Journal of Accounting Education*, 39, 68-83.

Auditing

2. Bagwell, C., Quick, L. A., & Vandervelde, S. D. (2017). Analytical procedures: An in-class exercise. *Advances in Accounting Education: Teaching and Curriculum Innovations*, *20*, 51-78.
3. Dickins, D., & Fay, R. G. (2017). COSO 2013: Aligning internal controls and principles. *Issues in Accounting Education*, *32*(3), 117-127.

GNP

4. Kelly, P., & Rohland, C. (2017). The United States federal budget project. *Journal of Accounting Education*, *41*, 48-57.

IFRS

5. Hughes, S. B. (2017). Student-authored IFRS teaching cases based on European securities and markets authority reports: Experiences from case writing and subsequent classroom use. *Journal of Accounting Education*, *41*, 58-74.

Managerial accounting

6. Lafond, C. A., Leauby, B. A., & Wentzel, K. (2017). Lessons in managerial accounting from a service learning project at a local soup kitchen. *Global Perspectives on Accounting Education*, *14*, 29-43.
7. McGuigan, N., Sin, S., & Kern, T. (2017). Sourcing sustainable finance in a globally competitive market: An instructional case. *Issues in Accounting Education*, *32*(1), 43-58.
8. Samuels, J. A., & Sawers, K. M. (2017). SRS Educational Supply Company: An instructional budget project. *Issues in Accounting Education*, *32*(4), 51-59.

Taxation

9. Best, E. E., & Schafer, J. K. (2017). A corporate tax return simulation: Utilizing electronic work papers and resolving ambiguous issues. *Issues in Accounting Education*, *32*(4), 61-80.

Appendix B. Cases organized by primary content area.

During 2017, the journals covered by this literature review published 33 cases (32% of the 103 articles published). We identified the 33 cases in alphabetical order within eight primary content areas: AIS, auditing and assurance, data analytics, financial accounting, fraud and forensic accounting, GNP, managerial accounting, and taxation.[14] Data analytics appears as a separate topic for the first time in the accounting education literature.[15]

Cases by primary content area

AIS

1. Borthick, A. F., Schneider, G. P., & Viscelli, T. R. (2017). Analyzing data for decision making: Integrating spreadsheet modeling and database querying. *Issues in Accounting Education*, *32*(1), 59-66.

Auditing and assurance

2. Brasel, K. R., & Daugherty, B. E. (2017). Cook and Thomas, LLC: Balancing auditor liability, client confidentiality, and the public interest. *Issues in Accounting Education*, *32*(1), 17-32.
3. Brown, V. L., & Kohlbeck, M. J. (2017). Providing assurance for sustainability reports: An instructional case. *Issues in Accounting Education*, *32*(3), 95-102.
4. Elder, R. J., & Yebba, A. A. (2017). The Roslyn school district fraud: Improving school district internal control and financial oversight. *Issues in Accounting Education*, *32*(4), 25-39.
5. Gujarathi, M. R. (2017). Diamond Foods, Inc.: A comprehensive case in financial auditing. *Issues in Accounting Education*, *32*(1), 95-112.
6. Wright, G. B., & Cullinan, C. P. (2017). Sino-Forest Corporation: The case of the standing timber. *Global Perspectives on Accounting Education*, *14*, 10-22.

Data analytics

7. Enget, K., Saucedo, G. D., & Wright, N. S. (2017). Mystery, Inc.: A big data case. *Journal of Accounting Education*, *38*, 9-22.
8. Fay, R., & Negangard, E. M. (2017). Manual journal entry testing: Data analytics and the risk of fraud. *Journal of Accounting Education*, *38*, 37-49.

[14] The University of Notre Dame provides a searchable database that includes cases published in *Issues in Accounting Education*, the *IMA Educational Case Journal*, and the *Journal of Accounting Education*. (http://www.cases.ndacct.com).

[15] Three cases appeared in a special-themed issue of the *Journal of Accounting Education* (Vol. 38, 2017).

9. Kokina, J., Pachamanova, D., & Corbett, A. (2017). The role of data visualization and analytics in performance management: Guiding entrepreneurial growth decisions. *Journal of Accounting Education*, *38*, 50-62.

10. Riggins, F. J., & Klamm, B. K. (2017). Data governance case at KrauseMcMahon LLP in an era of self-service BI and big data. *Journal of Accounting Education*, *38*, 23-36.

Financial accounting

11. Caplan, D. H., Dutta, S. K., & Marcinko, D. J. (2017). Tempest in a k-cup: Red flags on Green Mountain. *Issues in Accounting Education*, *32*(1), 79-94.

12. Churyk, N. T., Yu, S., Gross, G. M., & Stoettner, R. (2017). Foreign currency translation and consolidation: A case study. *Global Perspectives on Accounting Education*, *14*, 1-9.

13. Harris, P., & Stahlin, W. A. (2017). US GAAP to IFRS income conversion case study: An examination of SEC noted accounting differences. *The Accounting Educators' Journal*, *27*, 43-73.

14. Kowalczyk, T. K., & Stallworth, H. L. (2017). Rex Seafood, Incorporated: Accounting for inventory transactions among related parties. *Issues in Accounting Education*, *32*(1), 33-41.

15. Kreuze, J., Burke, C., Penner, J., & Langsam, S. (2017). Really fast computers future environmental disposals: A present concern? *The Accounting Educators' Journal*, *27*, 75

16. Larson, M. P., Lewis, T. K., & Spilker, B. C. (2017). A case integrating financial and tax accounting using the balance sheet approach to account for income taxes. *Issues in Accounting Education*, *32*(4), 41-49.16

17. Tan, P., & Lim, C-Y. (2017). Heineken's acquisition of Asia Pacific Breweries: Accounting for business combinations and changes in ownership interests. *Issues in Accounting Education*, *32*(4), 101-127.

Fraud and forensic accounting

18. Durtschi, C., & Rufus, R. J. (2017). Arson or accident: A forensic accounting case requiring critical thinking and expert communication. *Issues in Accounting Education*, *32*(1), 113-122.

19. Lehmann, C. M., & Heagy, C. D. (2017). A case study of fraud concerns at a homeowners' association. *Issues in Accounting Education*, *32*(1), 67-77.

20. McKnight, C. A., Manly, T. S., Cochran, L., & Troboy, K. (2017). Broken trust: An expensive affair. *Global Perspectives on Accounting Education*, *14*, 23-28.

[16] This case is also useful for a taxation course.

Cases by primary content area

GNP

21. Stone, M. F., & Erickson, S. L. (2017). Hometown Community Church: Opportunities and challenges of continued growth. *Issues in Accounting Education*, *32*(3), 129-136.

Managerial accounting

22. Kohlmeyer III, J. M., & Samuels, J. A. (2017). Rebecca's Coffee and Tea House: A strategic mapping and balanced scorecard case study. *Issues in Accounting Education*, *32*(2), 73-81.

23. Rossing, C. P., Cools, M., & Rohde, C. (2017). International transfer pricing in multinational enterprises. *Journal of Accounting Education*, *39*, 55-67.

24. Stuebs, M., Bryant, S. M., Edison, C., & Reese, K. (2017). Brittney's Boutique: *Tailoring* a budget for function as well as fashion. *Journal of Accounting Education*, *39*, 32-47.

25. Vesty, G., & Brooks, A. (2017). St George Hospital: Flexible budgeting, volume variance, and balanced scorecard performance measurement. *Issues in Accounting Education*, *32*(3), 103-116.

26. Zahller, K. A. (2017). Truffle in paradise: Job costing for a small business. *Journal of Accounting Education*, *40*, 32-42.

Taxation

27. Adams, M. T., Inger, K. K., & Meckfessel, M. D. (2017). The not so pokey hokies. *Issues in Accounting Education*, *32*(4), 81-99.

28. Burke, M. J., Burke, M. M., & Gates, S. (2017). To amend or not to amend: A tax consulting case. *Journal of Accounting Education*, *40*, 55-62.

29. Burrus, M. F., & Martin, J. (2017). The corporate inversion of Medtronic Inc. and Covidien PLC. *The Accounting Educators' Journal*, *27*, 25-42.

30. Drnevich, D., & Sternburg, T. J. (2017). Taxes and organizational form: An activity in partnership and corporate entities. *Issues in Accounting Education*, *32*(2), 65-72.

31. Gross, A., Hemker, J., Hoelscher, J., & Reed, B. (2017). The role of secondary sources on the taxation of digital currency (Bitcoin) before IRS guidance was issued. *Journal of Accounting Education*, *39*, 48-54.

32. Gujarathi, M. R., & Comerford, D. R. (2017). Acquisition of Hutchison Essar (India) by Vodafone (U.K.): A case in international taxation of indirect transfer of shares. *Issues in Accounting Education*, *32*(2), 83-93.

33. Single, L., & Rosner, S. (2017). Tax confusion and form 1040 turmoil. *Issues in Accounting Education*, *32*(4), 19-24.