

Accounting education literature review (2020)

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Accounting education literature review (2020)
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Research Highlights

- We summarize articles published in five accounting education journals during 2020.
- The summaries are organized by five traditional lines of inquiry.
- Empirical analysis and data collection methods are reported.
- The literature presentation extends the knowledge base in accounting education.
- We offer suggestions for future accounting education research.

Accounting education literature review (2020)

ABSTRACT

This review of the accounting education literature includes 88 articles published during 2020 in five accounting education journals: (1) *Journal of Accounting Education*, (2) *Accounting Education*, (3) *Advances in Accounting Education: Teaching and Curriculum Innovations*, (4) *Issues in Accounting Education*, and (5) *The Accounting Educators' Journal*. We update 15 prior accounting education literature reviews by organizing and summarizing contributions to the accounting education literature made during 2020. 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. We summarize the research design of the empirical articles. Suggestions for research are presented. Articles classified as cases published in the same five journals during 2020 are tabulated in an appendix categorized by content area.

Keywords:

Assurance of learning
Curriculum and instruction
Educational technology
Faculty
Literature review
Students

Accounting education literature review (2020)

1. Introduction

This review of the accounting education literature includes 88 articles published during 2020 in five accounting education journals: (1) *Journal of Accounting Education*, (2) *Accounting Education*, (3) *Advances in Accounting Education: Teaching and Curriculum Innovations*, (4) *Issues in Accounting Education*, and (5) *The Accounting Educators' Journal*.¹ This review article is the 16th in a series of accounting education literature reviews first published in 1986 (references presented in Table 1). Table 2 reports the accounting education journals reviewed since 1991. We classify a published article as empirical, descriptive, instructional resource, or case. Empirical and descriptive articles are summarized in the body of the article. Cases are tabulated in Appendix A. No articles meeting the definition of instructional resource were published in 2020. Consistent with prior reviews, an empirical article is one in which conclusions are derived from statistical analysis of data to support conclusions. Articles that discuss a strategy, describe an innovation, or report student perceptions are classified as descriptive. Table 3 summarizes commonly used abbreviations and corresponding definitions used throughout this article. For readability, all percentages reported herein are rounded.

[insert Tables 1, 2, and 3 here]

Tabulated author count by article type is presented in Table 4. The 88 articles published in accounting education journals in 2020 reflect the work of 208 individual authors. Sole-authored articles constituted 17% of the articles; 33% of the articles had two authors; 33% had three authors; and 17% had four or more authors.

[insert Table 4 here]

¹ *Global Perspectives on Accounting Education* was included in prior accounting education literature reviews (Table 1) but has not published an issue since 2017.

Tables 5 and 6 provide a summary by article type and subject area for each of the five journals in this review. Table 5 presents the classification of the 88 articles as empirical ($n=36$, 41%), descriptive ($n=31$, 35%), or case ($n=21$, 24%) by each journal. The distribution of empirical and descriptive articles across the journals reviewed is reported in Table 6. Articles classified as curriculum and instruction ($n=25$, 37%) and faculty ($n=20$, 30%) constitute 67% of the summarized articles. The remainder of the empirical and descriptive articles are classified as students ($n=17$, 25%) and educational technology ($n=5$, 8%). No articles were classified as instruction by content area in 2020 or 2019.

[insert Tables 5 and 6 here]

Tables 7 reports the data collection method employed in the empirical articles, along with comparable statistics from 2017, 2018, and 2019. As reported in Table 7, survey ($n=18$, 50%) and course performance ($n=11$, 30%) were the most prevalent data collection methods used in 80% of the 36 empirical articles. The remainder of the articles used data from published sources ($n=2$, 6%), quasi-experiment ($n=2$, 6%), interviews ($n=2$, 6%) and experiment ($n=1$, 2%). Comparative data are presented for 2017, 2018, and 2019 in Table 7. In an untabulated analysis, we examined the composition of participants for those studies that employed a survey data collection method. Students who participated in treatments or surveys numbered approximately 16,653, and accounting faculty/accounting departments and accounting professionals numbered approximately 1,355 and 1,083, respectively (not tabulated). Not included in the 16,653, one study used 1,266 NASBA CPA exam results, and another used data for 14,691 accounting students from a large national survey of 442,250 college graduates.

[insert Table 7 here]

Table 8 summarizes the analysis approach used in the empirical articles, which reveals that differences-in-means ($n=13$, 36%) and regression ($n=11$, 31%) were the most used analysis approaches. The remainder of the articles employed analysis of variance ($n=7$, 19%), tabulation ($n=3$, 8%) and path analysis ($n=2$, 6%). In Table 9 we report the five geographic locations of the samples analyzed: (1) US and Canada ($n=23$, 64%), (2) Europe ($n=6$, 17%), (3) Asia and Africa ($n=3$, 8%), (4) multinational ($n=3$, 8%), and (5) Australia and New Zealand ($n=1$, 3%). Comparative data for 2017, 2018, and 2019 are presented for Tables 8 and 9.

[insert Tables 8 and 9 here]

We define a case as an article that presents actual or hypothetical information with questions and activities to encourage contextual learning. The listing of 21 articles (24% of 88 total articles) classified as cases appears in Appendix A, summarized in one of four general content areas to which the case relates.² As an example, Smith and Stephens (2020) presented case materials to assist in learning the use of analytical procedures in an auditing course.

Four of the five journals had special themes during 2020 as summarized in Table 10. A total of 28 articles (32% of all articles) were included in the seven special themed issues (13 descriptive articles, 12 empirical articles, and three cases). Nine of the 28 special themed articles focused on stimulating research in accounting education (Section 6.1), which appeared in a special issue of *Issues in Accounting Education* (Vol. 35, No. 4). *Accounting Education* (Vol. 29, No. 5) dedicated an issue to faculty perceptions of accounting education in a world with COVID-19. Editors continue to employ special editions with guest editors who specialize in the theme, or to organize articles around themes for readability.

² University of Notre Dame provides a searchable database that includes cases published in *Issues in Accounting Education*, the *IMA Educational Case Journal*, the *Journal of Accounting Education*, and *Accounting Perspectives* (<https://cases.ndacct.com/>).

[insert Table 10 here]

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

2. Curriculum and instruction

Table 11 provides an overview of 25 (37%) curriculum and instruction articles, fourteen empirical and eleven descriptive, published in 2020. Articles in this subject area in the prior three years constituted 42% (2019), 34% (2018), and 33% (2017). Topics in 2020 addressed curricular issues (five articles), core competencies (13 articles), and instructional approaches (seven articles).

[insert Table 11 here]

2.1. Curricular issues

Five articles, three empirical and two descriptive, addressed curricular issues. Kaminski, Golemon, and McEacharan (2020) examined the switch at one US university in the order of introductory accounting courses from financial first and managerial second to managerial first and financial second.³ Both courses were required for all business majors and some majors outside of business. Data for pre-switch (academic years 2014-2018, 1,617 students) and post-

³ Changing the order necessitated changing course numbers to signal that managerial accounting should be taken first. Additionally, financial accounting was dropped as a prerequisite for managerial accounting.

switch (academic years 2017-2019, 1,734 students) periods were used.⁴ Data for several items were used: success measures (average grade, percentage of students with A/B/C grades) and non-success measures (percentages of students with D/F/W grades, F/W grades, and W grades). Extensive descriptions of the measures with various sub-analyses were presented. For the financial accounting course, comparing the averages for pre- and post-switch courses (t-tests), post-switch courses had significantly higher GPA and percentage of A/B/C grades, and significantly lower percentages of D/F/W grades, F/W grades, and W grades. However, for the managerial accounting course, post-switch courses had significantly lower GPA and percentage of A/B/C grades, and significantly higher percentages of D/F/W grades, F/W grades, and W grades.⁵ Performance measures were analyzed for business and nonbusiness majors. When comparing the grades of the first course in the sequence (financial in the pre-switch period and managerial in the post-switch period), average GPA was significantly higher. Accounting educators will need to read the entire article to obtain a complete sense of the data and analysis.

Andiola, Masters, and Norman (2020) surveyed heads of AACSB-accredited accounting departments about integrating technology and data analytics into the curriculum. The sample was mixed geographically, with 177 US and 10 international departments ($n=69$, 37% response rate). The overall response was dominated by the US departments with 94% of the tabulated data.

AACSB Accounting Standards⁶ indicate that accredited accounting departments should achieve

⁴ For the pre-switch and post-switch periods, 35% and 41%, respectively, of the students took both courses.

⁵ When comparing the pre-switch grades for managerial accounting to the grades to the post-switch subperiod 2018-2019, averages for GPA, percentage of A/B/C grades, percentages of D/W/F grades were not significantly different. However, percentages of FW and of W grades were significantly higher.

⁶ AACSB (2018) Standard A5 addresses “Information Technology Skills, Agility, and Knowledge for Accounting Graduates (<https://www.aacsb.edu/accreditation/standards/accounting>). In the now superseded AACSB (2013) standards, the information technology standard was A7, which was in place during the reported study.

a minimum level of information technology and data analytic skills into the accounting curriculum. Five research topics with 17 specific questions were included: (1) impact and status of implementation compliance, (2) guidance used to integrate technology, (3) approaches used to integrate technology, (4) challenges faced and resources needed, and (5) what courses incorporated technology skills and which software programs were used. Descriptive data were presented for each of the 17 questions; interested faculty should read the article to understand those responses. For example, 62% indicated compliance with Standard A7 would be very (12%) or moderately (51%) challenging. Also, specific feedback comments from department heads were included. The authors concluded that Standard A7 significantly helped promote change in the accounting curriculum.

Daniels, Nix, and Morgan (2020) surveyed 93 US accounting educators about moving topics from intermediate accounting II to an intermediate III or a graduate accounting course. Descriptive information was presented about eight common intermediate II topics (e.g., derivatives and hedging activities, pensions, share-based compensation), and participants responded with agree, disagree, neither. For example, 69 (74%) indicated that the topic derivatives and hedging could be moved to intermediate III, and 47 (51%) indicated it could be moved to a graduate course. For moving topics to intermediate III, the mean response for the agree group was significantly higher than for the disagree group, and the mean response was significantly different for schools that did / did not offer intermediate III. Mean responses for the agree and disagree groups were significantly different for the costs/benefits of moving topics from intermediate II: positive impact on student learning, burden to students, and burden to school budgets.

Zekany (2020) reviewed accounting curricula at 175 US accounting programs that have separate AACSB accounting accreditation. Descriptive information was provided about undergraduate accounting courses required for an undergraduate degree. Across schools, the core curriculum consisted primarily of six courses (accounting information systems, auditing, cost/managerial, intermediate I and II, and tax) plus two additional courses. The most common other required courses were advanced accounting (30%), intermediate III (11%), and tax II (10%). Ten innovative courses and newly required courses were identified (e.g., accounting analytics, information systems security). Extensive discussion was included.

Felski and Empey (2020) surveyed US students ($n=167$), professionals ($n=32$), and instructors ($n=36$) regarding adding the topic of blockchain to accounting curricula. Extensive descriptive information was provided about several questions. For example, in which course should blockchain be taught; how easy would it be to add blockchain to the curriculum; and advantages of including blockchain.

2.2. Core competencies

Thirteen articles, nine empirical and four descriptive, addressed core competencies. Efrat and Plunkett (2020) were interested in whether attitudes of students who participated in providing pro bono tax services to low-income taxpayers through the Volunteer Income Tax Assistance (VITA) program were changed by the experience. Students ($n=288$) at one US university participated in a service-learning course in which they provided tax services in a VITA clinic. Some students ($n=172$, 60% response rate) completed a pretest before the VITA experience and later a posttest (labeled the pretest/posttest group). Other students ($n=116$, 41% response rate) did not complete the pretest before the VITA experience, but they completed a pretest and posttest after the experience (labeled the retrospective pretest/posttest group). Eight

questions were asked: (1-4) the students' motivation to volunteer (career, values, enhancement, and understanding); (5) the role of accounting education in assessing social issues; (6) attitudes toward helping others; (7) how competent does the student feeling in the ability to provide pro bono (free) tax preparation services; and (8) how motivated is the student to provide pro bono tax preparation to low-income taxpayers. The authors analyzed the data with paired sample t-tests. For the pretest/posttest group, posttest attitudes for five of the eight measures were significantly more favorable (all four motivation to volunteer variables plus feeling more confident). For the retrospective pretest/posttest group, all eight posttest measures were significantly more favorable.

Miller, Shawver, and Mintz (2020) employed a quasi-experimental approach to explore the effectiveness of the Giving Voice to Values curricular offering (Gentile, 2010) based on survey responses from students ($n=163$, 83% response rate) enrolled in an ethic courses at two US universities. The control group ($n=33$) received a traditional course delivery with group assignments. The treatment group ($n=130$) engaged in the same content delivery as the control group, but also had five individual assignments and one Giving Voice to Values group assignment in which each team member played a scripted role in addressing an ethical dilemma. All students completed the same five accounting-specific vignettes at the beginning of the semester and again at the end of the semester. The pre- and post- surveys were identical. Each vignette was followed by a set of questions dealing with ethical sensitivity, ethical judgment to comply, ethical judgment to report, ethical intent, ethical intent to confront, the ethical intent of peers to comply, and ethical intent to act. ANOVA results indicated significant increases in all seven areas of ethical judgment for the treatment group, and only two of the seven areas (ethical intent to conform and ethical intent to action) significantly increased for the control group.

Chen, Fang, Wang, and Zhou (2020) investigated the use of the pause method in an auditing course. Undergraduate auditing students in Hong Kong ($n=61$) and a graduate auditing class in mainland China ($n=38$) participated. In the pause method, lectures are stopped periodically, and a classroom activity is conducted during the pause. During the pause, half the class completes a written discussion of the topic, and the other half meets in small groups to discuss the topic. Students were assigned to one condition prior to the first exam and then the alternative condition prior to the second exam. Students chose their preferred method prior to the third exam. Student assessments of the pause method showed significant differences (t-tests compared to neutral responses) for five items for both university groups: communication skills (oral communication skills, written communication skills, interpersonal communication skills); beneficial to the learning process; and a more enjoyable learning experience. T-tests were used to compare assessment of the lecture-only method to the pause method. Assessments about the benefit and enjoyability of the pause method were significantly higher for the type of activity associated with the student's preferred pause method. Student scores were significantly higher for the exam following use of the preferred pause method. The authors concluded that the pause method, which was demonstrated to be effective by Braun and Simpson (2004) in a North American setting, was also effective in a different culture, China.

Stout (2020) reflected on the value of reading, beginning by discussing how retirement had afforded the opportunity to read extensively on a variety of topics. Noting that the ability to communicate effectively is an important quality in accountants, Stout's reflections discussed how to write with power, "the ability to communicate concisely and with precision" (Stout, 2020, 90), and issues in writing related to word choice. His recommendation for students and faculty was to read more and with more breadth.

Huber, Leach-López, Lee, and Mafi (2020) investigated the use of writing circles to improve accounting students' writing skill. Writing circles are small student groups who meet to provide feedback to each other (the method has a specific technique of evaluating key sentences). Students in three different classes (accounting information systems, tax, advanced accounting) participated at three US AACSB-accredited universities. Results were presented as three different studies. The writing assignments differed across the classes, and descriptions about the different projects and writing circles were presented. Independent evaluators were used at each university and scored pre-writing circle and post-writing circle assignments. In Study 1, at one university, writing in the writing circles ($n=16$) was compared to writing in the campus learning center ($n=18$), and students were scored on focus, style, and grammar. Writing circle posttest scores were significantly higher for grammar, but insignificant for focus and style. Measures of student satisfaction were reported, as were selected student comments. For Study 2 ($n=49$), writing circles were used to assess a tax memo. The instructor reported assessments of focus, style, grammar, for both pre- and post-writing circles, and whether the memo did not meet, met, or exceeded expectations. Measures of student satisfaction were reported. For Study 3 ($n=11$), students prepared a memo regarding a FASB Codification topic. Writing circles were used to critique the memos, and students resubmitted the memos. Faculty evaluators reported the percentage of students who improved.

Dolce, Emanuel, Cisi, and Ghislieri (2020) surveyed Italian student alumni ($n=251$, 15% response rate) from one university and Italian employers ($n=74$) about the alignment between perceptions of graduates and expectations of companies regarding skills that were needed to be successful accountants. Participants responded using a five-point scale regarding 12 soft skills (e.g., time management, emotional self-regulation), five technical skills (e.g., local knowledge,

international knowledge, ability to communicate in foreign language), and three generic skills (e.g., public speaking, ability to respect cultural norms). Students assessed the importance of soft skills and provided perceptions of how much they possessed the soft skills. Wilcoxon tests were used to compare the importance and perceptions. Significant differences were found for eight of 12 soft skills, three of five technical skills, and two of three generic skills. The perceptions of graduates and companies were compared using Mann-Whitney tests. For the 12 soft skills, the importance of the skills to graduates and employers was significantly different for only one item (teamwork); for technical skills significant differences were reported for two of five items, and for generic skills significant differences were reported for two of three items. In comparing the importance of the ten most important attributes, both graduates and companies ranked teamwork as most important, but rankings of other items varied considerably (e.g., public speaking ability ranked third by companies but was not ranked by graduates).

Ireland (2020) surveyed first-year students ($n=125$) at one British university about public speaking apprehension, which was measured using the Personal Report of Communication Apprehension (PRCA-24) attributed to McCroskey (1982). One research goal was to confirm previous findings of public speaking apprehension in a sample of business students, and the other goal was to test for differences across student groups. Students provided written responses about prior public speaking after taking the PRCA-24. Based upon PRCA-24 scores, students were separated into five groups: (1) negative (negative feelings toward oral presentation); (2) positive (students expressed positive feelings); (3) overcome (previous felt negative feelings, but no longer did so); (4) neutral (unable to classify in another group); and (5) no experience (students with no experience with public presentations). An ANOVA with PRCA-24 scores as the dependent variable was significant, indicating differences across the five groups. In a series of 20

planned comparisons, nine comparisons were significant. For example, the mean PRCA-24 score of the negative group was significantly higher than the mean score for the neutral, overcome, and positive groups, and the mean score for the positive groups was significantly lower than the no experience, overcome, and negative groups.

Uwizeyemungu, Bertrand, and Poba-Nzaou (2020) examined 171 online job ads for accounting positions advertised by Canadian companies during 2016-2017 to identify employer expectations. Content analysis and cluster analysis were used to classify the ads. Three clusters emerged, representing job profiles: (1) financial reporting ($n=12$), (2) tax aggressiveness ($n=66$), and (3) performance management ($n=93$). The largest cluster, performance management, was then separated into three perspectives: (1) investment center, (3) profit center, and (3) cost center. The authors discussed the Chartered Professional Accountant Competency Map (CPA Canada, 2012), which identified five broad competency and six technical competency areas, to which the authors added a seventh technical competency (information technology). Results for the requested technical competencies in the job ads were reported.

Baldauf, Graschitz, and Müller (2020) used one auditing case developed by the International Learning Platform for Accountancy (ILPA).⁷ The research addressed the quality and appropriateness of the ILPA auditing teaching materials. The case materials were used in three separate European university intensive study programs for accounting students, and the auditing case was one part of the entire program. The ILPA materials were evaluated using content analysis; an assessment of whether materials complied with Bloom's (1956) taxonomy of learning also was prepared. Students provided evaluations of the case materials. A questionnaire

⁷ Information about ILPA is available at <http://ilpa-accounting.eu/> and <https://ec.europa.eu/programmes/erasmus-plus/projects/eplus-project-details/#project/2014-1-AT01-KA203-000965>.

was completed by students ($n=173$) at the conclusion of the case administration process, and factor analysis applied to the 21 questions revealed five factors: (1) participant experience, (2) course organization, (3) student support, (4) learning resources, and (5) intellectual motivation. The authors concluded that the case materials were of high quality; the materials addressed high learning levels; and respondents had a high level of positive evaluation of the case materials. Therefore, the authors indicated that the goals of the ILPA project were achieved regarding the auditing case.

Berry and Routon (2020) investigated perceptions of accounting graduates with bachelors' degrees about soft skills and technical skills developed during their accounting education. Survey data were used from the Data Cooperative Institutional Research Program (CIRP) for 442,250 US college graduates, of which 14,691 were accounting majors, from 619 different institutions during 1994-2006.⁸ Data from two surveys were used: (1) the Freshman Survey (TFS) and (2) the College Senior Survey (CSS). The authors concentrated on 15 questions from the CSS in which graduates assessed their skills on a five-point scale from *much weaker* to *much stronger*.⁹ Accounting majors reported increased skills during college in 14 of the 15 categories, with the exception of foreign languages (no statistical analysis was used to measure the increase). Descriptive data for *much stronger* increased skills for the 15 questions were reported for accounting majors, other business majors, and nonbusiness majors. Individual regressions on each of the 15 questions were conducted, with the change in skill as the dependent

⁸ The CIRP is part of the Higher Education Research Institute housed at The University of California, Los Angeles (UCLA).

⁹ The 15 questions included (1) getting along with dissimilar people; (2) critical thinking; (3) working cooperatively; (4) analytical and problem solving skills; (5) computer skills; (6) foreign languages; (7) general knowledge; (8) interpersonal skills; (9) knowledge of field; (10) knowledge of other races and cultures; (11) leadership ability; (12) mathematical skills; (13) public speaking; (14) reading speed and comprehension; and (15) writing skills.

variable, accounting major as an independent variable, a large list of control variables,¹⁰ school fixed effects, and time. Odds ratios¹¹ were computed for two groups: (1) the entire sample and (2) business majors. The odds ratios were for the effect of the accounting degree, where a value greater than 1.0 indicated the accounting major reported higher skills compared to nonaccounting majors, while less than 1.0 indicated lower skills. Compared to all college majors, accounting majors showed significantly different increased skills for four skills (field knowledge, mathematical knowledge, computer knowledge, and working cooperatively), and significantly decreased skills for 10 skills. Compared to business majors only, accounting majors showed significantly different increased skills for two skills (field knowledge, mathematical knowledge), and significantly decreased skills for 13 skills. Results were consistent throughout the sample period.

van Rooyen (2020) conducted 22 structured interviews with representatives of South African accounting firms. The research was motivated by the Chartered Global Management Accountant Competency framework (CGMA, 2019). The research goal was to determine if the university curriculum adequately prepared graduates for workplace professional and ethical competencies. The author discussed ethics education in the curriculum and social media use. Interviews pertained to five fundamental principles: (1) integrity, (2) objectivity, (3) professional competence and due care, (4) confidentiality, and (5) professional behavior.

¹⁰ High school GPA, college GPA, SAT score, self-rated general academic ability, self-rated writing ability, self-rated mathematical ability, self-rated public speaking ability, self-rated ability for understanding of others, self-rated cooperatives ability, self-rated ability with computers, self-rated leadership ability, age at matriculation, father's years of schooling, mother's years of schooling, combined parental income in 2017 in USD, distance from home in miles, hours per week studying during high school, hours per week devoted to student clubs.

¹¹ An odds ratio quantifies the strength of the association between two events.

Fontaine and Khemakhem (2020) surveyed 27 Canadian accounting practitioners regarding the competencies of management accounting graduates. The authors described how the interviews were conducted and noted that two themes emerged from the interviews: (1) management accountants need to communicate in an understandable way, and (2) management accountants need to add value to information. Descriptive information was presented for each theme.

Karatzimas (2020), an accounting professor at a Cyprus university, proposed an educational model to promote and enhance democratic participation and citizenship. The theory presented was that educating students about government and nonprofit accounting (GNP) promotes literacy about governmental processes. Students would gain awareness of the community and how to participate by understanding the accounting behind the governmental process.

2.3. Instructional approaches

Seven articles, two empirical and five descriptive, addressed core competencies. Akaaboune, Blix, Daigle, and Quarles (2020) investigated the effect of an active learning assignment on exam performance in a financial statement audit course. Students (total $n=154$: control group $n=93$; experimental group $n=63$) at one US university participated. After the first of three exams, the experimental group completed a data analytics active learning assignment using IDEA[®] software.¹² Exam 1 score, before the experimental treatment was applied, for the experimental group was significantly higher than the control group. For the experimental group, both exam 2 score and exam 3 score were significantly higher than exam 1 score, and for the control group, exam 2 score and exam 3 score were significantly lower than exam 1 score. Using regression with exam 3 grade as the dependent variable, and several independent variables (grade

¹² <https://idea.caseware.com/>

on exam 1, grade on exam 2, GPA, course load, gender, race, and IDEA to denote the IDEA assignment), the experimental condition (IDEA) was significant, as were exam 1 and exam 2 scores. These results held when using the change in score from exam 1 to exam 2 as the dependent variable.

Shawver (2020) investigated the effect of student collaboration on learning outcomes using graduating senior accounting students enrolled in an advanced accounting course at a US university ($n=113$). Two cohorts, traditional and cooperative, received instruction from the same faculty member and met three days per week. The cooperative cohort was enrolled in the first year of the study, and the traditional cohort was enrolled in the second year. The traditional cohort ($n=58$) received in-person lectures on the first day. On the second and third days, students completed problems related to the lecture material individually via an online learning management system. Quizzes (total of 12 for the semester) were administered on the third day after class. The cooperative cohort ($n=55$) was required to view pre-recorded lecture material prior to the first day of class each week. Students completed chapter problems on the first and second day of class. On the third day, students cooperatively completed an in-class quiz. Students were permitted to self-select their cooperative group. Both cohorts received 12 quizzes and four exams. All exams were completed individually by both cohorts. ANOVA and ANCOVA indicated that the collaborative cohort had significantly higher quiz scores and that the traditional cohort had significantly higher exam scores. Additional tests for the associations between student performance and the number of lecture minutes and participation percentage were conducted. Lecture minutes were defined as the number of minutes students watched the pre-recorded lectures. Univariate and multivariate regressions failed to demonstrate a significant association between lecture minutes and quiz grade. Participation percentage was defined as the

percentage of total pre-recorded lecture minutes watched (cooperative cohort) and total attendance for class lecture (traditional cohort). Univariate and multivariate regressions indicated a significant positive association between participation percentage and scores on both exams and quizzes.

Powell, Lambert, McGuigan, Prasad, and Lin (2020) described an implementation in an audit context of a role-play assignment designed to encourage students to apply their interests and experiences in the audit realm. Students ($n=313$) at an Australian university in undergraduate and graduate auditing courses were placed in groups and required to create a storyline for a hypothetical audit firm and client, develop issues that would be faced in that audit engagement, and map how the audit firm would react to those issues. Students were given feedback on the story board and asked to revisit the hypothetical engagement and prepare for a 15-minute role-play at the end of the semester in which they acted out the revised storyboard. In a post-implementation survey, mean response to 40 survey questions were presented. The authors did not conduct statistical tests, but indicated that all mean scores were greater than 5.0 or a 7.0 scale, which they concluded reflected enhanced creativity, use of a broad range of human skills, an expanded understanding of audit procedures, and an opportunity to apply life experience. Comparisons of student responses for domestic and international students (z-tests) showed significant differences for 37 of 40 questions, with higher mean responses for international students on all 37 questions.

Alshurafat, Beattie, Jones, and Sands (2020) described the pedagogical approaches employed in Australian universities in forensic accounting curricula. They examined syllabi and curricula from 15 Australian universities and interviewed nine practitioners and nine educators. Four themes emerged: (1) learning activities and experimental learning, (2) hands-on forensic

accounting experience, (3) pedagogical tools, and (4) traditional learning approaches. The authors indicated that experiential approaches appeared to engage students and provide a realistic forensic foundation.

Schönfeldt, Hancock, and Birt (2020) used think aloud protocols in an advanced accounting class in an Australian University for both undergraduate and graduate students. Students ($n=12$, 83% international students) voluntarily participated over a five-week period and completed five protocols: (1) business combinations, (2) consolidations, (3-4) wholly owned entities, and (5) intragroup transactions. Extensive discussion about the think aloud protocol was included.

Gittings, Taplin, and Kerr (2020) reviewed and summarized 50 accounting education research articles addressing experiential learning activities published from 1993-2018. The most frequently identified benefits of experimental learning activities implementation were technical knowledge and comprehension, student attitude and satisfaction, and application of theory.

Freeman and Friedman (2020) reviewed the literature regarding the value of story writing in accounting education. The benefits and difficulties of story writing in general and in accounting classes were discussed. Story writing can be used as an active learning exercise. Examples of story writing in specific accounting courses were included.

3. Instruction by content area

No empirical or descriptive articles were published in the category of instruction by content area for the second consecutive year since the category has been included in these reviews. As a point of reference, the last time articles were summarized in this topical area was 2018 (9% of total) with 13% in 2017 (see Table 6). Appendix A tabulates 21 cases published in 2020 in four content areas.

4. Educational technology

Table 12 provides an overview of five (8%) educational technology articles, four empirical and one descriptive, published in 2020. Articles in this subject area in the prior three years constituted 9% (2019), 9% (2018), and 8% (2017). As technology becomes integral to teaching, the separation of educational topics is blurred, which results in the decline in this area. Topics in 2020 addressed the impact of online education on hiring decisions, gamification, and the use of specific vendor-based tools.

[insert Table 12 here]

4.1. *Technology and curricular issues*¹³

One empirical article addressed technology and curricular issues. Braun, Boldt, Mauldin, and Viosca (2020) investigated the association between online coursework and the impact on hiring decisions. The study was conducted in two phases. In the first phase, in the context of hiring an entry level accountant, licensed US CPAs ($n=546$, 3% response rate) were asked what percentage of online coursework would lower the candidate's evaluation (mean response was 46%, adjusted to 45% for use in phase 2). In the second phase, a survey was administered to a group of licensed US CPAs ($n=286$, 2% response rate) that asked for a likelihood (reported as a percentage) of hiring a candidate that had 45% of coursework online. Respondents were then given one of the following additional scenarios and asked for the likelihood (reported as a percentage) of hiring the candidate: (1) the candidate noted that all accounting courses were online; (2) the candidate noted that all nonaccounting business courses were online; (3) the candidate noted that all nonbusiness courses were online. An ANOVA with the mean responses and the three scenarios was significant, with the results being driven by a lower mean (Dunnnett's

¹³ Andiola et al. (2020) addressed incorporating technology in the curriculum to meet AACSB standards (Section 2.1).

T3 test) for the scenario in which accounting courses were taken online. When comparing the difference between the percentages in the first and second questions for each scenario, the responses were significantly different only for scenario one in which accounting courses were taken online (the likelihood of hire, 77% vs. 57%, was significantly lower). In a *post hoc* analysis, some skills were noted to be significantly different; e.g., the mean for oral communication skills, interpersonal skills, and preparation for an entry-level position were significantly lower for the accounting courses taken online.

4.2. Technology-based learning and assessment

Four articles, three empirical and one descriptive, addressed technology-based learning and assessment. Fan and Song (2020) examined the effect of alternative audience response systems (ARS) on exam performance by comparing clickers versus mobile response technology on multiple-choice quiz performance and measuring perceptions of student experiences with ARS. Financial accounting students ($n=170$) at a Canadian university in three different courses, each with two sections, participated in the study. Students completed a pretest, the course, and a course survey. For multiple-choice quizzes administered throughout the course, one section (46%) used clicker ARS and one section used mobile ARS (54%). In the quizzes, question order and numerical values were changed from the first section to the second section to reduce information sharing. The order of ARS use was altered in the various sections. Regression was used for analysis, with final exam grade as the dependent variable and several control variables.¹⁴ In univariate analysis, final grade, GPA, quiz scores, and ARS experience were all

¹⁴ Binary variables included ARS treatment (1 if mobile, 0 otherwise), ARS experience (scores from survey questions), quiz scores standardized, pretest scores standardized, gender, GPA (beginning of term), low course load, and high course load.

significantly higher for mobile ARS than clicker ARS. For four of 11 survey questions, student responses were significantly higher for mobile ARS than for clickers.

Beatson, Gabriel, Howell, Scott, van der Meer, and Wood (2020) were interested in the effect of using gamification for students in required introductory accounting ($n=500$) and management ($n=469$) classes in New Zealand. The mobile app Quitch¹⁵ was made available to students. Gamification employs various techniques such as awarding badges and using leader boards. The authors investigated students' behavioral engagement (Quitich opt-in, Quitich-use indicators, tutorial attendance, and use of the learning management system data) and academic performance (final grade). Stepwise hierarchical regression models were used for (1) all students and (2) students having a score on the New Zealand's national Certificate of Educational Achievement (NCEA) exam (overall score and accounting score). Course grade was used as the dependent variable, and various independent variables were employed in the stepwise models. In the most extensive model for all students, being Quitich active was significantly associated with course grade. Other significant associated variables included tutorial attendance, first-year student, living on campus, and international student. In the most extensive model for the subsample with NCEA scores, being Quitich active also was significantly associated with course grade, along with quiz timing, number of tutorials attended, NCEA weighted score, and NCEA accounting weighted score. The authors concluded that opting-in and using Quitich was associated with academic success.

Shehata, Mitry, Shawki, and El-Helaly (2020) employed classroom action research to investigate the effectiveness of using a student engagement platform called Nearpod.¹⁶ During class, students used Nearpod to access quizzes, answer quiz multiple-choice questions, and

¹⁵ Vendor information is available at <https://quitch.com/>

¹⁶ Vendor information is available at <https://nearpod.com/>

immediately upon submission received a model answer. Students ($n=44$) in an introductory accounting course at one Egyptian university participated in a survey and focus group regarding their experiences. Survey questions were used to compare the effectiveness of Nearpod versus paper and pen quizzes. The authors indicated the results supported student preference for using Nearpod in comparison to the paper and pen method to answer quiz questions.

Ramanau, Hughes, and Grayson (2020) investigated the use of computer-marked assignments (CMAs). UK students ($n=1,127$) participated in two consecutive terms of an online financial accounting course, in which students ($n=813$) completed at least one CMA. Three types of assessment were used: (1) three CMAs, (2) two instructor-marked assignments, and (3) an instructor-marked final exam. Using the three CMA scores as dependent variables, MANOVA with nine demographic variables showed significant differences for gender, age group, highest previous education, ethnic group, and introductory bookkeeping. Completing all three CMAs was significantly associated with completing the final exam, higher instructor marked assignment scores, and instructor marked final exam score.

5. Students

Table 13 identifies 17 articles (14 empirical and three descriptive) about students, classified by academic major and career, student skills and characteristics, and approaches to learning and assessment. This section includes 25% of the articles published in 2020. Comparable production for 2019 (31%), 2018 (19%), and 2017 (26%) reveals a continued interest in empirical examination of student issues. Topics include CPA exam, value of student organizations to career success, ethical attitudes, student compassion, and learning strategies. Articles on students commonly investigate and report gender differences.

[insert Table 13 here]

5.1. Academic major and career

Seven articles, six empirical and one descriptive, addressed academic major and career. Smith, Haight, Emerson, Mauldin, and Wood (2020) investigated whether individual resilience reduces the effects of role stressors on student intentions to change major. Accounting students ($n=443$) from four US universities completed surveys that captured seven primary constructs of interest: role conflict, role ambiguity, role overload, resilience, psychological health, academic burnout, and departure intentions. Control variables included school, gender, age, academic level, semester hours, study hours, GPA, and marital status. The structural equation model performance statistics indicated a good fit with the data. The model posited (1) a link between academic burnout and departure intentions and (2) links between role conflict, role ambiguity, and role overload with academic burnout, mediated by resilience and psychology health.¹⁷ Results indicated that resilience significantly varied directly with psychological health and inversely with academic burnout. Additionally, resilience and psychological health were significantly indirectly associated with lower departure intentions. In concluding remarks, the authors indicated that resilience is effective, directly and indirectly, in reducing the negative effect of roles stress on academic burnout and intent to depart.

Murphy and Hassall (2020) interviewed 23 members of Chartered Accountants Ireland (CAI) regarding their perceptions of professional competence and how professionals engage in continuing professional development (CPD). Questions were asked about the focus, expected competence levels, and CPD orientation across four experience stages: (1) novice, (2) competent,

¹⁷ Role conflict, role ambiguity and role overload were each significantly positively associated with each other. Role conflict was significantly negatively associated with resilience. Role ambiguity was significantly negatively associated with resilience and psychology health and was significantly associated with academic burnout. Role overload was significantly negatively associated with psychological health. Resilience and psychological health were significantly negatively associated with academic burnout. Academic burnout was significantly associated with departure intentions.

(3) proficient, and (4) expert. A phenomenographic approach¹⁸ was used to classify responses, and the authors concluded that (1) the focus at the novice level is learning to be a professional as a role taker; (2) the competent level is characterized as increased responsibility and concentration on skill development; (3) the proficient professional is focused on managing internal stakeholders and team efforts; and (4) the expert level is expected to manage internal and external stakeholders with ability to handle broad matters. In regard to CPD, the authors concluded that novice practitioners rely on formal learning such as acquiring prescribed technical knowledge; competent professionals are expected to self-select as a subject matter expert and initiate learning from colleagues; professionals at the proficient level focus on informal learning and engage in consultation within professional networks; and expert professionals are expected to emphasize informal learning with expanded consultation within professional networks and engagement in intuitive and experimental learning.

Shin, Lacina, Lee, and Pan (2020) examined the association between student success on the CPA exam and the type of review course based on the CPA exam results in 2013 ($n=639$) and 2014 ($n=627$) as reported by NASBA. The authors indicated that results of the regression analyses suggested that success on the CPA examination was higher where the review course was a programmatic requirement, as opposed to the conditions where the review course was for credit or administered through a continuing education center. The authors noted that results of a subsequent Heckman analysis suggested that the results were not the result of a self-selection bias.

Schafer, Cleaveland, and Schafer (2020) surveyed students ($n=195$), faculty ($n=44$), and professionals ($n=64$) regarding the benefits of US accounting student organizations in providing

¹⁸ A phenomenographic approach is used to describe the different ways that a group of people experience and understand phenomena.

career placement, skill development, networking, and community service opportunities for students. Responses to a total of 21 questions on a four-point scale (1=not at all; 4=extensive) were used to assess the four functional areas. Differences-in-means showed that average responses on 19 of the 21 measures were significantly above the midpoint value of 2.5, which the authors indicated meant that student organizations provided enhanced career placement, skill development, networking events, and community service opportunities. A second differences-in-means analysis compared results depending on whether respondents had participated in an accounting student organization. Accounting student organization participants reported significantly higher mean responses than nonparticipants for nine of 22 questions (e.g., increase exposure to firm culture, expanded discussion of technical accounting topics, networking with firm professionals, and help the local community). Tabulated data about the barriers to accounting student organization participation were reported (e.g., schedule conflict, time requirement, qualifications (e.g., GPA), cost, effort, lack of awareness, and a lack of matching of interests).

Enget, Garcia, and Webinger (2020) investigated the effects of gender, discipline difficulty, career opportunities, and the imposter phenomenon on student choice to major in accounting based on survey responses from students ($n=232$, 9% response rate) at two US universities who completed two surveys. The first survey was the 20-item Mini-IPIP Scale (Donnellan, Oswald, Baird, & Lucas, 2006) used to assess personality characteristics (extraversion, agreeableness, conscientiousness, neuroticism, and intellect/imagination) based upon a self-assessment reported on a five-point scale. The second survey was the Clance (1985) Imposter Phenomenon Scale (IP) used to assess the degree to which students felt that they lacked competency in their academic pursuits, also based upon a self-assessment reported on a five-

point scale. Respondents' scores on the IP instrument ranged from 20 to 100, with a score above 62 being designated as representing feelings of lacking competence or being an imposter. Descriptive information regarding the personality characteristics and IP score were presented. A total of five logistic regression models were estimated. Perceived opportunities in the accounting profession were significantly positively associated with choice of accounting major across all models. Difficulty of the discipline was significant in one of five logistic regressions. IP was significant, and women had significantly higher IP scores.

Calderon and Nagy (2020), two US accounting educators, reviewed academic research related to the CPA exam. They discussed research related to educational requirements, determinants of CPA exam success, institutional characteristics, and candidate characteristics. The regulatory environment surrounding the licensure was also discussed. Opportunities for future research were identified.

Mellado, Parte, and Villanueva (2020) explored the perceptions that final-year undergraduate students ($n=140$) enrolled in a Spanish University held about the accounting profession and their role as students based on an interpretation of student selected metaphors. In addition to basic demographic information, students were asked two questions: (1) what metaphor or metaphors would you use to identify yourself as a professional accountant? and (2) what metaphor or metaphors would you use to identify yourself as a student? Three variables were extracted: (1) professional metaphor choices were classified as traditional or contemporary; (2) student metaphor choices were classified as cognitive or behavioral, and (3) participants' combined metaphor choices were classified as having positive or negative imagery. Tabulated data documented the metaphors selected to describe perceptions of a professional accountant; 70% (30%) were traditional (contemporary), and 82% (18%) were positive (negative) in

imagery. Of the metaphors selected to describe perceptions of the student role, 51% (49%) were behavioral (cognitive) and 78% (22%) were positive (negative) in imagery. Other results (chi square tests) reported metaphors classified by role and perception were by gender, age, nationality, accounting versus non-accounting, and job preference, with only one of 18 differences being significant.

5.2. Student skills and characteristics

Four articles, three empirical and one descriptive, addressed student skills and characteristics. Driskill and Rankin (2020) investigated the reasoning skills among business students ($n=128$, 81% response rate) enrolled in 2017 in one cost accounting course at a public US university, two introductory courses at a private US university, and four undergraduate business courses at a Chinese university. The authors discussed five fundamental cultural dimensions (Hofstede, 1991): (1) power distance, (2) individualism/collectivism, (3) uncertainty avoidance, (4) masculinity, and (5) Confucian dynamism. The Accounting Ethical Dilemma Instrument (AEDI) was used to assess students' ethical reasoning skills (Thorne, 2000). The AEDI presents ethical dilemmas across four dimensions: (1) conflict between a supervisor and subordinate, (2) conflict of interest between auditor and client, (3) client confidentiality, and (4) transparency in accounting. Students read each scenario and then reported how they expected the accountant in the case would likely respond. Higher scores indicated more advanced ethical reasoning skills. The ANOVA model included the dependent variable (AEDI score), and the independent variables were institution (private US, Public US), student age, and whether a student was an upperclassman. Results showed that public US university was significant. For one dilemma, a conflict between supervisor and subordinate, dubbed the Alice dilemma, student age was significant.

Cheng, Flasher, and Schenck (2020) surveyed undergraduate and graduate students ($n=172$) at two US universities in 2017 about ethical attitudes and compared those results to prior studies published in 1997, 2004, and 2007 to assess potential shifts in ethical attitudes. The survey instrument consisted of 16 vignettes, each with a unique ethical proposition, and the dependent variable was ethical tolerance for the behavior described in the vignette.¹⁹ Students evaluated each vignette on a six-point scale (1=never acceptable; 6=always acceptable). The 2017 results were significantly different for 14 of 15 vignettes than each of the 2004 and 2007 studies, and significantly different for 16 of 16 vignettes for the 1997 study. Students were separated into those with CPA aspirations and other aspirations, and mean responses were significantly different for four of the 16 vignettes. Additionally, results of ordered probit regressions estimated for each vignette indicated that age and CPA aspiration were significant in a small number of vignettes (three of 16 for CPA and one of 16 for age), but gender (male) was significant in 10 of the 16 vignettes, with males having a higher ethical tolerance score.

Russell, Ariail, Smith, and Smith (2020) investigated the association between compassion characteristics of business students and gender based on survey responses from US business students ($n=278$). Students completed the 21-item compassionate love for humanity (CLFH) instrument (Sprecher & Fehr, 2005), which uses a seven-point scale to measure self-reported compassion. A differences-in-means test demonstrated that females reported significantly higher CLFH measures than males for 20 of the 21 items.

Lee, Evans, and Downen (2020) described the shortfall in female participation in golfing events at one US university and the consequential forfeiture of professional networking opportunities. The linkage to accounting was that accounting students who did not play golf

¹⁹ The 2017 survey was comparable to the instruments employed in the prior studies.

might miss out on networking opportunities in public accounting. The authors described Golf Links, which is a program designed to develop interest and encourage participation in golfing activities. In an implementation of the program, the authors observed that female participation in golfing events increased. The authors noted that overall, participants reported enjoyment from the program and reported an increased intent to participate in future golfing activities.

5.3. Approaches to learning and assessment

Six articles, five empirical and one descriptive, addressed approaches to learning and assessment. Nsor-Ambala (2020) investigated the effect of exam type on exam scores, anxiety, and knowledge retention based on three course sections in a cost and management accounting class of second year business students ($n=198$) enrolled at a Ghanaese university. The same lecturer taught all three sections using the same course outline and study materials. Each section was administered three exams and three quizzes in the course in the same sequence. Each of the three exams was given in a different format: open-book (OB), closed book (CB), and with the use of a cheat-sheet (CS). The order was different for each exam across the three different classes. Before each exam, students were asked to report their level of anxiety on a five-point scale ranging from “not anxious at all” to “extremely anxious.” Unannounced, closed-book quizzes were used to assess knowledge retention and were the same across all three sections. An ANOVA indicated the mean percentage scores on each type of exam were significantly different (51% closed book, 48% open book, 65% cheat sheet). Additionally, an ANOVA indicated that pre-exam anxiety (highest anxiety in closed book exam condition) and knowledge retention (highest retention in cheat sheet condition) were significantly different across exam type. ANCOVA (covariates: gender, age, marital status, religion, and cumulative GPA) were separately estimated for exam score, pre-exam anxiety, and knowledge retention, with age

significant for each measure for exam score, knowledge retention, and pre-exam anxiety. Descriptive information about preferred exam type was presented. The authors concluded that the use of a cheat sheet led to higher exam scores, lower pre-exam anxiety, and higher knowledge retention.

Phillips, Lobdell, and Neigum (2020) conducted three separate studies to investigate whether question placement in reading assignments results in different learning outcomes. Questions about the reading were either interspersed with the reading or presented at the end of the reading (block questioning). Participating students were enrolled in at a Canadian university. In the first study, students ($n=139$) were asked about their approach for completing course-assigned questions (QA) in the financial accounting course, either before or after the class was conducted. ANOVA analysis confirmed differences among the four conditions (blocked versus interspersed, reading before versus after), with a significant interaction of question type and reading approach. Students reading before class had significantly higher exam scores in the interspersed condition (79% vs. 70%), and students reading after class had significantly higher exam scores in the blocked condition (75% vs. 65%). In the second study, business students ($n=59$) participated in a study to assess the effect of reading efficacy. Reading efficacy was assessed by students' self-report on three questions about their reading habits. Students were randomly assigned a reading assignment, had a distractor task, and then answered questions about the assignment (delayed recall score). ANOVA results confirmed significant differences among the four conditions (interspersed vs. blocked, higher vs. lower reading self-efficacy), with a significant interaction. Students with higher reading self-efficacy had significantly higher scores in the interspersed condition (4.65 vs. 3.66), and students with lower self-efficacy had significantly higher scores in the blocked condition (4.00 vs. 3.18). In the third study, business

students ($n=84$) enrolled in an undergraduate introduction to business course participated in a study to examine the effect of mind-wandering on learning outcomes. The introduction to the study included a random assignment where half of the participants were told they would be asked to write about a highly emotional situation that happened to them at the university, thereby inducing a higher mind-wandering condition for that group. The reading and question-answer passage explained the five-step revenue recognition model. Half of the students were asked to respond to the questions only after reading the entire passage, and the other half to answer the questions in an interspersed fashion. The simulated test included six-multiple choice questions and two problem-solving questions related to the reading assignment (dependent variable). ANOVA results confirmed significant differences among the four conditions (interspersed vs. blocked, lower vs. higher mind-wandering), with a significant interaction. Students in the higher mind-wandering condition had significantly higher scores in the blocked condition (41.0 vs. 26.7), and students in the lower mind-wandering condition had significantly higher scores in the interspersed condition (35.6 vs. 32.4).

Papageorgiou and Callaghan (2020) surveyed first-year accounting students ($n=4,745$, 72% response rate) at a South African university during the period 2011-2017 to assess the change in the associations between skills and attributes and student performance (course grade). A questionnaire collected data on demographic attributes and on skills: six questions on intellectual skills, two questions on personal skills, two questions on technical skills, two questions on interpersonal and communication skills, and three questions on organization and business management skills. Responses to all questions were on a four-point scale (1=excellent to 4=poor). Factor analysis of the 15 questions revealed four factors: (1) discipline-specific skills, (2) generic skills, (3) group-oriented skills, (4) practical and applied skills. Regression

models were estimated separately for each of the seven years in the sample. The dependent variable was course grade with the 15 question responses as the independent variables.²⁰

Regression results indicated that the discipline-specific skills were significantly associated with course performance from 2011-2014; generic skills were significantly associated with course performance in 2011, 2013, and 2017; group-oriented skills were not significantly associated with course performance in any of the years studied; and practical and applied skills were significantly associated with course performance in 2014 and 2015.

Malan (2020) presented an engagement framework for a module in an online accounting course in South Africa. The framework was designed to encourage engagement across five dimensions: (1) social (interaction with peers); (2) cognitive (ease of learning); (3) behavioral (self-discipline/self-directed learning); (4) collaborative (team participation); and (5) emotional (comfort with the module) aspects of learning. Descriptive information for student assessments of each dimension was presented. The author suggested that online delivery with engagement initiatives was effective.

Stice, Stice, and Albrecht (2020) explored the efficacy of alternative learning modes (reading text, watching video) based on the course performance of undergraduate and graduate business students ($n=1,369$) enrolled in four different accounting courses (principles I, principles II, introductory managerial, and MBA financial) at universities located in Hong Kong and the US. All students were afforded access to an online learning tool that provided the opportunity to read text from a traditional textbook and watch instructional videos online. Use of the online learning tool was not required. In all classes, the material was delivered via the online learning

²⁰ An additional five demographic factors were included as binary independent variables for accounting major, male, black, native English speaking, and National Student Financial Aid Scheme (NSFAS) supported.

tool, and application activities were conducted in an in-class, group environment. Regression models were estimated using the z-score of student course average as the dependent variable. Variables were READ, WATCH, EFFORT, WATCHRATIO, EXAM, MAJOR, and CLASS.²¹ Regression with exam score as the dependent variable and EFFORT, WATCHRATIO, MAJOR, and CLASS as independent variables indicated that all four independent variables were significant. Other analysis was conducted. For example, both EFFORT and WATCHRATIO were significantly associated with EXAM for each of the four classes.

O’Haver (2020) conducted a quasi-experiment at a US university to determine if a pre-lecture assignment in an introductory management accounting course was effective in improving students’ ($n=60$) course performance. Students in the treatment group were assigned supplemental videos before attending class and were awarded 10% of the course grade based on their performance on the related quizzes. Differences-in-means analysis showed that the treatment group significantly outperformed the control group on the final examination. Results from a post-course survey were discussed

6. Faculty

Table 14 identifies 20 articles, 16 descriptive and four empirical, related to faculty classified as research initiatives in accounting education, general research topics, teaching, and other faculty issues. This section contains 30% of the articles reviewed for 2020. Prior year proportions of articles on faculty were as follows: 2019 (18%), 2018 (29%), 2017 (20%). Nine articles provide research ideas for accounting education. Other topics include strategies to

²¹ READ (number of paragraphs read divided by total paragraphs available), WATCH (number of video segments watched divided by total video segments available), EFFORT (sum of read and watch), WATCHRATIO (watch divided by sum of read and watch), EXAM (average exam percent score), MAJOR (quantitative major selected), and CLASS (freshman or otherwise).

publish in practitioner publications, student cheating, faculty credentials, and the impact of the pandemic on accounting education.

[insert Table 14 here]

6.1. Research initiatives in accounting education

Nine articles, all descriptive, addressed research initiatives in accounting education. Pasewark (2020) introduced a special issue of *Issues in Accounting Education* (Table 10),²² which contained essays by accounting educators regarding research initiatives for accounting education research. The eight themes included (1) improving learning effectiveness, (2) toward a more inclusive accounting academy, (3) serving and enhancing the profession, (4) transforming today's students into professionals, (5) providing access to education and obtaining credentials, (6) managing academic programs, (7) developing and utilizing faculty, and (8) research relevance and productivity. Each of these topics is briefly summarized separately herein.

Jordan and Samuels (2020) discussed five changes in accounting education that affect learning effectiveness: (1) changing content and curriculum, (2) changing content delivery modes, (3) changing classroom environments, (4) changing student demographics, and (5) changing measures of learning and performance. Brink and Reichert (2020) discussed how accounting research could be conducted related to the accounting profession: (1) factors affecting the entry-level process, (2) technology and professional interactions, (3) accountants' professional identity, (4) continuing professional education, and (5) academic collaboration with the profession.

Kremin and Pasewark (2020) discussed accounting education research initiatives related to the value proposition of an undergraduate accounting degree and obtaining professional

²² November 2020 (Vol. 35, No. 4).

credentials: (1) value of tuition, (2) value of the educational product and of professional certifications, and (3) barriers to entry. Topics included the 150-hour requirement, challenges to teaching core competencies, costs/benefits of earning a degree in accounting, and costs/regulations that may present barriers to the profession.

Albring and Elder (2020) examined the management of an academic program across the spectrum of student quality and quantity, curriculum, funding, assessment, and accreditation. The interrelationship of the topics and observed output measures of program quality were discussed. Boyle and Hermanson (2020) discussed the need for research related to five areas of developing and using faculty: (1) faculty development, (2) faculty management, (3) faculty portfolio, (4) department culture, and (5) academic freedom. Brown-Liburd and Joe (2020) discussed and provided extensive descriptive information about the state of under-represented accounting doctoral faculty. Recommendations for recruiting and retaining under-represented accounting faculty were included.

Moon and Wood (2020) discussed new areas for research regarding research relevance and productivity, including faculty performance evaluation and the consequences associated with using journal lists. The authors emphasized the need for empirical data for decision making. Madsen (2020) introduced a selection/transformation framework and provided examples on how the framework can generate accounting education research questions. Examples included materialistic values among students, communication skills, and underrepresentation of Black persons in the auditing profession.

6.2. General research topics

Five articles, all descriptive, addressed general research topics. Apostolou, Dorminey, and Hassell (2020) summarized articles published in five accounting education journals during

2019: (1) *Journal of Accounting Education*, (2) *Accounting Education*, (3) *Advances in Accounting Education: Teaching and Curriculum Innovations*, (4) *Issues in Accounting Education*, and (5) *The Accounting Educators' Journal*. Articles were categorized as empirical, descriptive, instructional resource, or case. The authors presented an analysis of research rigor and offered suggestions for future research.

Tucker and Scully (2020) investigated the relationship between academic research and teaching, and academic research and practice. Executive MBA students ($n=47$) at two Australian universities voluntarily participated in non-randomly selected focus groups, one focus group at each university. The focus groups addressed six questions related to using academic research in accounting courses. Selected comments for each of the six questions were presented and discussed.

Lindsay (2020) explored the movement of accounting professionals into academia. Thirteen accounting academics who had made the transition from professional practice into academia were interviewed. The author noted the proportion of professionally qualified accountants in academia is decreasing and discussed the mid-career transition of professionally qualified accountants into academia. From the interviews, nine themes emerged, which were organized into three groups, each with three themes: developing research knowledge and skills, changing yourself, changing our world. Figures 1 and 2 in the article, based upon Kegan's (2009) three learning dimensions (cognitive, interpersonal, and intrapersonal), provided a useful visual of the nine themes. Each group and theme was discussed. Lindsay also discussed the Research Accountant Development Framework (RADF),²³ created by The Institute of Chartered Accountants in England and Wales, that addressed the transition of professional accountants into

²³ <https://www.icaew.com/groups-and-networks/communities/academia-and-education-community/researching-accountant-development-framework>.

academia, and provided guidance about academic research. The article and RADF would be useful to anyone in practice who is considering moving into academia, and also for academic colleagues to understand the difficulty in transitioning from professional practice into academia.

Boyle, Boyle, and Hermanson (2020a) provided advice on how to publish in practitioner journals. The authors are among the top academic contributors to practitioner research (see Boyle, Boyle, and Hermanson, 2020b). They provided an overview of issues related to publishing in practitioner journals: impediments, finding topics, writing, use of statistics, and implications. Types of publications (small literature reviews, empirical papers, thought pieces, skills papers, and current topics debates) were discussed. Educational opportunities and issues were examined. Faculty interested in publication in practitioner journals should find this article useful and informative.

Boyle, Boyle, and Hermanson (2020b) were interested in (1) who published articles in the top practitioner journals and (2) the motivations to publish in practitioner journals. They examined 1,003 articles published during 2013-2017 in five of the top practitioner journals: (1) *Journal of Accountancy* (JOA), (2) *The CPA Journal* (CPAJ), (3) *Strategic Finance* (SF), (4) *Management Accounting Quarterly* (MAQ), and (5) *Internal Auditor* (IA). The authors of the articles were identified along with extensive descriptive information. Academics published 63% of the articles. The top 36 schools for academic faculty publications were ranked (e.g., for The University of Scranton faculty, ranked number 1, nine faculty published 25 articles).²⁴ The top 15 non-academic institutions associated with publications were identified (e.g., Transition Advisors, LLC had 18 publications). Leading academic authors were identified (e.g., Douglas Boyle and Brian Carpenter, both at The University of Scranton, were the top two authors).

²⁴ For comparison, the BYU six-year research all methods ranking and six-year overall education rankings for 2011-2017 were presented: <https://www.byuaccounting.net/rankings/univrank/rankings.php>

Boyle, Boyle, and Hermanson also surveyed 22 of the leading academic faculty who published in practitioner journals. Descriptive data presented included motivations for publishing, types of articles, authors' time allocation, recognition, and rewards.

6.3. Teaching

Three articles, all empirical, addressed teaching. Khayati and Ariail (2020) examined the perceptions of US and Tunisia business students regarding the importance of faculty teaching, professional experience, research, service, and degree affiliation. The US and Tunisia have different educational systems and cultures. A survey instrument was developed in English and then translated into French for use in Tunisia. The survey contained 10 questions regarding students' perceptions (five-point scale) of the primary attributes (four questions related to teaching and business experience) and secondary attributes (six questions related to research, service, and college degree affiliation) of their business school faculty. Survey responses were obtained from students over four semesters ($n=284$ US, one institution; $n=152$ Tunisia, two institutions) across different course levels. Analysis using z-tests and ANOVA revealed significant differences for six of the 10 questions. US students rated three faculty attributes significantly higher: (1) knowledge of the material, (2) application of real-world cases, and (3) communicate information effectively. Tunisian students rated three faculty attributes significantly higher: (1) association with the business community, (2) association with practice/trade associations, and (3) university granting the faculty degree.²⁵ Using exploratory factor analysis, three factors were identified for the entire sample. For US students, two factors were identified: (1) three attributes related to teaching effectiveness, (2) remaining seven attributes. For Tunisian students, four factors were identified: (1) two attributes related to

²⁵ Of the four attributes not significantly different for the two groups, two attributes were ranked as least important by both groups (publications in scientific journals and publication in practice/trade journals).

publications, (2) communicate effectively, association with business community, and participation in academic organization, (3) association with professional organizations, university granting faculty degree, and application to real-world cases, and (4) business experience and knowledge of the materials.

Golden and Kohlbeck (2020) investigated the effect of using paraphrased questions in place of test bank questions as an approach to reduce the benefits of cheating on online exams using students enrolled in an online auditing course at two US universities ($n=117$). The premise was that test bank questions are more readily found through internet search than paraphrased questions. Therefore, the use of paraphrased questions was hypothesized to reduce the benefit to the student of cheating during an exam. Three time-restricted exams were administered during the semester. All three exams contained both test bank questions and paraphrased questions. On exam two, there was the addition of a randomly assigned honor code policy that the student was required to affirm before proceeding to the exam. On the third exam, proctoring technology was used. ANOVA and ANCOVA results showed that the percentage correct of paraphrased questions was significantly lower than test bank questions. When honor code was added to one of the three exams, paraphrase, honor code, and the paraphrase and honor code interaction were significant. The proctoring software used in the two institutions was different, and paraphrase was significant across proctoring software. The authors noted that use of paraphrased questions can reduce cheating on online examinations.

Bernardi and Higgins (2020) surveyed students ($n=218$) at one US private university about cheating on in-class examinations. Questions about the general attitude toward cheating were included as were specific questions.²⁶ For example, have you observed cheating; do you

²⁶ Survey questions were adapted from Bernardi et al. (2012).

know anyone who routinely cheats on exams; and have you ever cheated on a major exam?

Responses were separated into three groups based upon self-reporting: (1) never cheated, (2) cheated on only minor exams, and (3) cheated on both minor and major exams. The impression management subscale from Paulhus (1991) was used to measure social desirability response bias. The data revealed four independent variables: (1) having observed cheating, (2) social desirability response bias (SDRB), (3) students' belief that cheating is wrong, and (4) the belief more should be done about cheating. Extensive descriptive information and several analyses were reported. For example, significant differences for six of seven questions were reported when split on low and high SDRB scores. Regression results were reported for cheating on minor exams, cheating on major exams, and intention to cheat in the future, as were comparison results from Bernardi, Banzhoff, Martino, and Savasta (2012). The authors made three suggestions to reduce cheating: (1) separate students, (2) use different examinations, and (3) closely monitor students.

6.4. Other faculty issues

6.4.1. The impact of COVID-19 on accounting education

Two articles, both descriptive, addressed COVID19. Sangster, Stoner, and Flood (2020) solicited personal reflections in short essays (750-1,000 words) from 66 faculty around the world regarding the impact of COVID-19 and their responses to COVID-19.²⁷ The article was the only one that appeared in a special issue of *Accounting Education* (Table 10).²⁸ The many faculty who contributed to the article identified 71 separate topics raised in the reflections, including 45 stress-inducing factors. The personal reflections may inform readers who are experiencing

²⁷ The article includes contributions from 66 individuals representing 45 different countries. The authors who submitted narratives are not listed in this literature review.

²⁸ October 2020 (Vol. 29, No. 5).

similar challenges. The article documented the academic response to COVID-19 in real time. Interested faculty would need to read the entire group of essays to achieve a fuller understanding of the collective work.

Fogarty (2020) reflected on Sangster et al. (2020) in an essay that addressed several themes: (1) technology pros and cons, (2) a fundamental reconsideration of teaching, grades and their purpose, (3) the continued mysteries of student behavior, (4) changes to faculty, and (5) the organizational view. A reference to the *Mirror of Erised* (Rowling, 2015), which allows the observer to see one's real desire, was used by Fogarty (2020, 570) to summarize his perspective:

Once one discounts the ability of the past to continue into perpetuity, we find our way through the uncertain future where physical presence is a luxury and we learn how to imagine the unimaginable. We did not know that this is what we wanted. Perhaps we need to want what we have, and separate the essential from the fluff.

6.4.2. Faculty qualifications

One empirical article addressed faculty qualifications. Bergner, Chen, and Simerly (2020) surveyed US accounting faculty ($n=642$, 11% response rate) selected from the *Hasselback* (2021) directory. The authors had 10 research questions associated with (1) the current state of accounting faculty and professional certifications, (2) faculty school type and professional certifications, and (3) motivations, benefits, and obstacles of obtaining professional certification. When separated into decades (1961-2017), possession of certification and year of tenure-track faculty hired were significant. Results indicated that faculty with terminal degrees hired most recently (2001-2010, 2011-2017) were significantly more likely to have no professional certification; the percentage of faculty with professional certification was significantly associated with undergraduate degree (accounting vs. nonaccounting) and primary teaching area; the percentage of faculty with certification was significantly associated with the type of school (defined by highest degree offered), with doctoral-granting schools having the

lowest percentage; and no significant difference for faculty with professional certification across school type. Analysis also was presented regarding when professional certification was obtained (prior or after employment). Descriptive information was presented regarding motivation to pursue or complete professional certification; reasons for not pursuing professional certification; obstacles to pursuing or completing professional certification; perceptions of the teaching benefits associated with professional certification; and perceptions of the research benefits associated with professional certification.

7. Summary and suggestions for future scholarship

7.1. Summary

A summary of publications by article type for the period 1991-2020 appears in Table 15. We observe a decline in article production of all types in 2019 and 2020 with 81 articles in 2019 and 88 articles in 2020. These total numbers are the lowest since 2006 (Apostolou et al. 2017b). The observed reversion in the volume of literature addressing accounting education is in stark contrast to the expanding importance of the topic. The COVID-19 crisis undoubtedly exacerbated the impact in 2020 and it was extraordinarily difficult to remain on task as editors, referees, and authors. Kudos to those individuals who have maintained forward movement in generating and publishing quality accounting education research as individuals and institutions grapple with extraordinary events. Sangster et al. (2020) presents a rich story about the response to the pandemic in real time.

[insert Table 15 here]

We are concerned about the declining body of accounting education work and contributions to the knowledge base. The trend started before the pandemic altered the way teachers engage with their students. One concern is that education or pedagogy is viewed

negatively by some institutions to the point of discouragement. As individuals involved in the mainstream of accounting education research for many years, we are concerned that the scholarship of teaching is falling by the wayside, perhaps because it is not rewarded by many academic institutions. In fact, accounting education research is needed more than ever with the global shift in educational paradigms. Pasewark (2020) remarked that articles appearing in the special issue on research initiatives in accounting deliberately teamed experienced faculty with emerging scholars to encourage engagement with continuously improving accounting education, and retaining lessons learned. Rebele and St. Pierre (2015, 136) analyzed accounting education research for the period 1991-2015:

... accounting education research should be important to those of us who are responsible for providing our students with the best education possible. We should not tolerate or accept stagnation in our literature.

We commend Boyle et al. (2020a) for their documentation about publishing in practitioner journals. The article has an objective and focus, and it executes its promise of offering advice on publishing. Many institutions continue to reward publications in practitioner journals, and this article offers advice from those who have been successful. Gittings et al. (2020) is a nice example of research that summarizes the variety of activities implemented by faculty over a period of time (experiential learning during 1993-2018).

In prior literature reviews, we noted the need to conduct research across multiple universities. For 2020, 15 (22%) of 67 empirical and descriptive articles were conducted across multiple universities, with several of those across various countries. Conducting research across multiple locations enhances the generalizability of the reported results because the idiosyncrasies of a single location are less likely to drive the results. Additionally, many of the articles reported using different courses, with 13% of 67 empirical and descriptive articles explicitly reporting

results across multiple courses. The variety of course content offers confidence that results obtained were not course specific.

We identified five empirical articles that may serve as models for faculty engaging in empirical accounting education work. Shawver (2020) is an example of a well-communicated and solidly executed empirical study. The topic has general appeal of learning outcomes for group versus individual activities. Control and treatment groups were clearly articulated and *post hoc* sensitivity tests were conducted. Phillips et al. (2020) reported the results of three studies about assessment question placement and learning outcomes, all very well implemented, and rich in context and coverage. Smith et al. (2020) is an example of a nicely executed empirical analysis on student resilience and intent to remain an accounting major. Berry and Routon (2020) used a huge extant data set for US college graduates and used a subset of the data for accounting majors in the analysis. Driskill and Rankin (2020) examined cultural differences between US and Chinese students for accounting profession scenarios.

7.2. Suggestions for future scholarship

Our parting comment in our review of the 2019 accounting education research was “Indeed, it may be time for the profession to develop an agenda for future research that connects past, present, and future of the profession” Apostolou et al. (2020, 20). The editors and contributors to the special issue of *Issues in Accounting Education*²⁹ expressed the same idea; their project to address the suggestion was already underway. The articles in that special issue are summarized in Section 6.1, and we will not restate the summaries here. However, the authors cover the spectrum of accounting education, and bring forward extant knowledge about the

²⁹ Vol. 35, No. 4 (November 2020).

topics. Our summary comment about future scholarship is to use those articles as they relate to a topic of interest because they are rich with ideas.

Table 1
Accounting education literature review series.

Reference	Time period covered
1. Apostolou, Dorminey, and Hassell (2021)	2020
2. Apostolou, Dorminey, and Hassell (2020)	2019
3. Apostolou, Dorminey, Hassell, and Hickey (2019)	2018
4. Apostolou, Dorminey, Hassell, and Rebele (2018)	2017
5. Apostolou, Dorminey, Hassell, and Rebele (2017a)	2016
6. Apostolou, Dorminey, Hassell, and Rebele (2016)	2015
7. Apostolou, Dorminey, Hassell, and Rebele (2015)	2013-2014
8. Apostolou, Dorminey, Hassell, and Watson (2013)	2010-2012
9. Apostolou, Hassell, Rebele, and Watson (2010)	2006-2009
10. Watson, Apostolou, Hassell, and Webber (2007)	2003-2005
11. Watson, Apostolou, Hassell, and Webber (2003)	2000-2002
12. Apostolou, Watson, Hassell, and Webber (2001)	1997-1999
13. Rebele, Apostolou, Buckless, Hassell, Paquette, and Stout (1998a)	1991-1997 (part I)
14. Rebele, Apostolou, Buckless, Hassell, Paquette, and Stout (1998b)	1991-1997 (part II)
15. Rebele, Stout, and Hassell (1991)	1985-1991
16. 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	2018	2019	2020
<i>Journal of Accounting Education</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<i>Accounting Education</i>	(b)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<i>Advances in Accounting Education: Teaching and Curriculum Innovations</i>	(c)	✓	✓	✓	(d)	✓	✓	✓	✓	✓	✓	✓	✓
<i>Global Perspectives on Accounting Education</i>	(e)	(e)	(e)	✓	✓	✓	✓	✓	✓	✓	(e)	(e)	(e)
<i>Issues in Accounting Education</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<i>The Accounting Educators' Journal</i>	✓	(f)	(f)	(g)	✓	✓	✓	✓	✓	✓	✓	✓	✓

(a) *Accounting Perspectives* was included in the 1991-1997 review; excluded thereafter because 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
AACSB	The Association to Advance Collegiate Schools of Business
AIS	Accounting information systems
ARS	Audience response system
CAI	Chartered Accountants Ireland
CPA	Certified Public Accountant
CGMA	Chartered Global Management Accountant
CMA	Computer-marked assignment
CPD	Continuing professional development
ELA	Experiential learning activities
GNP	Government and nonprofit accounting
GPA	Grade point average
IFRS	International Financial Reporting Standards
ILPA	International Learning Platform for Accountancy
NASBA	National Association of State Boards of Accountancy (US)
VITA	Volunteer Income Tax Assistance

Table 4
 Summary of author count by article type.

Article type	Author count per article:				
	Total articles	One author	Two coauthors	Three coauthors	Four or more coauthors
Empirical	36	4	9	14	9
Descriptive	31	9	12	7	3
Case	21	2	8	8	3
Total	88	15	29	29	15
<i>Percentage of total</i>	<i>100%</i>	<i>17%</i>	<i>33%</i>	<i>33%</i>	<i>17%</i>

Note: 208 individual authors contributed to publishing the 88 articles published in 2020.

Table 5

Article classification by journal.

Journal	Articles summarized:			Instructional resources (c)	Cases (d)	Grand total
	Empirical (a)	Descriptive (b)	Total			
<i>Journal of Accounting Education</i>	11	4	15		7	22
<i>Accounting Education</i>	13	10	23			23
<i>Advances in Accounting Education: Teaching and Curriculum Innovations</i>	7	1	8		3	11
<i>Global Perspectives on Accounting Education</i> (e)						
<i>Issues in Accounting Education</i>	1	11	12		10	22
<i>The Accounting Educators' Journal</i>	4	5	9		1	10
Totals	36	31	67	0	21	88
<i>Percentage of grand total</i>	41%	35%	76%	0%	24%	100%
Comparative prior year data:						
2019 totals	31	24	55	8	18	81
<i>Percentage of grand total</i>	38%	30%	68%	10%	22%	100%
2018 totals	46	22	68	8	25	101
<i>Percentage of grand total</i>	45%	22%	67%	8%	25%	100%
2017 totals	40	21	61	9	33	103
<i>Percentage of grand total</i>	39%	20%	59%	9%	32%	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.

(e) Not published in 2018, 2019, or 2020; included here because comparative data includes 2017 articles.

Table 6

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

Journal	Section reference and subject area:										Total summarized articles	
	2. Curriculum and instruction		3. Instruction by content area		4. Educational technology		5. Students		6. Faculty			
	E	D	E	D	E	D	E	D	E	D	E	D
<i>Journal of Accounting Education</i>	4	2			2		4	1	1	1	11	4
<i>Accounting Education</i>	5	4			1	1	6	1	1	4	13	10
<i>Advances in Accounting Education: Teaching and Curriculum Innovations</i>	2				1		3	1	1		7	1
<i>Global Perspectives on Accounting Education</i> (a)												
<i>Issues in Accounting Education</i>							1			11	1	11
<i>The Accounting Educators' Journal</i>	3	5							1		4	5
Subtotal by article classification	14	11	0	0	4	1	14	3	4	16	36	31
Total by section reference and subject area		25		0		5		17		20		67
<i>Percentage of total</i>		37%		0%		8%		25%		30%		100%
Comparative prior year data:												
2019 totals		23		0		5		17		10		55
<i>Percentage of total</i>		42%		0%		9%		31%		18%		100%
2018 totals		23		6		6		13		20		68
<i>Percentage of total</i>		34%		9%		9%		19%		29%		100%
2017 totals		20		8		5		16		12		61
<i>Percentage of total</i>		33%		13%		8%		26%		20%		100%

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

(a) Not published in 2018, 2019, or 2020; included here because comparative data includes 2017 articles.

Table 7Data 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	8	3	1	1		1	14
3. Instruction by content area							
4. Educational technology	1	3					4
5. Students	7	3	1	1	2		14
6. Faculty	2	2					4
Totals	18	11	2	2	2	1	36
<i>Percentage of total</i>	<i>50%</i>	<i>30%</i>	<i>6%</i>	<i>6%</i>	<i>6%</i>	<i>2%</i>	<i>100%</i>
Comparative prior year data:							
2019 totals	22	1	3	5	0	0	31
<i>Percentage of total</i>	<i>71%</i>	<i>3%</i>	<i>10%</i>	<i>16%</i>	<i>0%</i>	<i>0%</i>	<i>100%</i>
2018 totals	28	9	3	1	2	3	46
<i>Percentage of total</i>	<i>61%</i>	<i>19%</i>	<i>7%</i>	<i>2%</i>	<i>4%</i>	<i>7%</i>	<i>100%</i>
2017 totals	21	6	6	3	3	1	40
<i>Percentage of total</i>	<i>53%</i>	<i>15%</i>	<i>15%</i>	<i>7%</i>	<i>7%</i>	<i>3%</i>	<i>100%</i>

Table 8Analysis 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	3	8	1	2		14
3. Instruction by content area						
4. Educational technology	2			2		4
5. Students	5	3	2	2	2	14
6. Faculty	1	2		1		4
Totals	11	13	3	7	2	36
<i>Percentage of total</i>	<i>31%</i>	<i>36%</i>	<i>8%</i>	<i>19%</i>	<i>6%</i>	<i>100%</i>
Comparative prior year data:						
2019 totals	14	4	4	6	3	31
<i>Percentage of total</i>	<i>45%</i>	<i>13%</i>	<i>13%</i>	<i>19%</i>	<i>10%</i>	<i>100%</i>
2018 totals	19	11	8	8	0	46
<i>Percentage of total</i>	<i>42%</i>	<i>24%</i>	<i>17%</i>	<i>17%</i>	<i>0%</i>	<i>100%</i>
2017 totals	17	12	7	4	0	40
<i>Percentage of total</i>	<i>43%</i>	<i>30%</i>	<i>17%</i>	<i>10%</i>	<i>0%</i>	<i>100%</i>

Table 9Geographic 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	10		3	1		14
3. Instruction by content area						
4. Educational technology	2	1	1			4
5. Students	8		2	2	2	14
6. Faculty	3				1	4
Totals	23	1	6	3	3	36
<i>Percentage of total</i>	<i>64%</i>	<i>3%</i>	<i>17%</i>	<i>8%</i>	<i>8%</i>	<i>100%</i>
Comparative prior year data:						
2019 totals	16	3	4	5	3	31
<i>Percentage of total</i>	<i>51%</i>	<i>10%</i>	<i>13%</i>	<i>16%</i>	<i>10%</i>	<i>100%</i>
2018 totals	25	6	7	7	1	46
<i>Percentage of total</i>	<i>55%</i>	<i>13%</i>	<i>15%</i>	<i>15%</i>	<i>2%</i>	<i>100%</i>
2017 totals	29	4	6	1	0	40
<i>Percentage of total</i>	<i>73%</i>	<i>10%</i>	<i>15%</i>	<i>2%</i>	<i>0%</i>	<i>100%</i>

Table 10
Summary of issues with special themes

Journal	Theme	Number of articles
<i>Accounting Education</i> (Vol. 29, No.5)	1. Insights into accounting education in a COVID-19 world	1
<i>Advances in Accounting Education: Teaching and Curriculum Innovations</i> (Vol. 24)	2. Research on student attitudes and behavior	2
	3. Cases and pedagogical approaches in tax	3
	4. Financial reporting and introductory accounting	2
	5. Research about the CPA exam	2
	6. International	2
<i>Issues in Accounting Education</i> (Vol. 35, No. 4)	7. Research initiatives in accounting education	9
<i>Journal of Accounting Education</i> (Vol. 50)	8. Special issue with the 2018 RMIT Accounting Educators' Conference	1
<i>Journal of Accounting Education</i> (Vol. 50)	9. Special issue on preparing accounting students for careers using big data	1
<i>Journal of Accounting Education</i> (Vol. 52 and 53)	10. Special issue on gender issues and work-life balance in accounting education	3
<i>Journal of Accounting Education</i> (Vol. 53)	11. Special issue on developing accounting students' soft skills versus technical competency	2
Total articles		28

Table 11

Overview of curriculum and instruction articles (Section 2).

Reference	Type*	Topic
2.1. Curricular issues		
Andiola et al. (2020)	E	Technology integration in the curriculum
Daniels et al. (2020)	E	Intermediate accounting III course in the curriculum
Felski & Empey (2020)	D	Perceptions of adding blockchain to the curriculum
Kaminski et al. (2020)	E	Revising order of introductory accounting courses
Zekany (2020)	D	Core courses for a generalist accounting degree
2.2. Core competencies		
Baldauf et al. (2020)	E	Learning from case evaluation
Berry & Routon (2020)	E	Alumni perceptions of soft skill development
Chen et al. (2020)	E	Pause method to improve soft skills and learning
Dolce et al. (2020)	E	Perceptions of soft skills by graduates and employers
Efrat & Plunkett (2020)	E	VITA program effect on future volunteerism
Fontaine & Khemakhem (2020)	D	Perceptions of alumni competencies
Huber et al. (2020)	E	Using writing circles to improve writing skills
Ireland (2020)	E	Communication apprehension
Karatzimas (2020)	D	Teaching GNP to promote community engagement
Miller et al. (2020)	E	Adding GVV to a standalone ethics course
Stout (2020)	D	Reading to improve communication
Uwizeyemungu et al. (2020)	E	Competencies requested by employers
van Rooyen (2020)	D	Professional and ethical competencies
2.3. Instructional approaches		
Akaaboune et al. (2020)	E	Active learning using data analytics
Alshurafat et al. (2020)	D	Teaching strategies in forensic accounting curricula
Freeman & Friedman (2020)	D	Story writing as a teaching strategy
Gittings et al. (2020)	D	Experiential learning literature review
Powell et al. (2020)	D	Use of co-created role playing to foster creativity
Schönfeldt et al. (2020)	D	Think aloud protocols
Shawver (2020)	E	Cooperative vs. traditional study

*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		
Braun et al. (2020)	E	Impact of online education on hiring decisions
4.2. Technology-based learning and assessment		
Beatson et al. (2020)	E	Technology engagement and academic performance
Fan & Song (2020)	E	Mobile technology and audience response systems
Ramanau et al. (2020)	E	Computer-marked assignments
Shehata et al. (2020)	D	Use of Nearpod for quizzes

*Empirical (E) or descriptive (D) article

Table 13

Overview of articles about students (Section 5).

Reference	Type*	Topic
5.1. Academic major and career issues		
Calderon & Nagy (2020)	D	Literature review on CPA exam success
Enget et al. (2020)	E	Accounting major characteristics
Mellado et al. (2020)	E	Perceptions of profession using metaphor analysis
Murphy & Hassall (2020)	E	Employer perceptions of professional competencies
Schafer et al. (2020)	E	Value of accounting student organizations to career
Shin et al. (2020)	E	CPA review course and success outcomes
Smith et al. (2020)	E	Individual resilience and career intentions
5.2. Student skills and characteristics		
Cheng et al. (2020)	E	Longitudinal shifts in ethical attitudes
Driskill & Rankin (2020)	E	Ethical reasoning skills in Chinese and US students
Lee et al. (2020)	D	Inclusion of females in golf as networking
Russell et al. (2020)	E	Student compassion
5.3. Approaches to learning and assessment		
Malan (2020)	D	Student engagement in an online accounting degree
Nsor-Ambala (2020)	E	Effect of exam type on anxiety and knowledge gains
O'Haver (2020)	E	Pre-lecture videos to promote learning
Papageorgiou & Callaghan (2020)	E	Student learning skills and academic success
Phillips et al. (2020)	E	Assessment question placement and learning outcomes
Stice et al. (2020)	E	The effect of study choices on learning

*Empirical (E) or descriptive (D) article

Table 14

Overview of articles about faculty (Section 6).

Reference	Type*	Topic
6.1. Research initiatives in accounting education		
Albring & Elder (2020)	D	Aspects of managing an academic program
Boyle & Hermanson (2020)	D	Developing and using faculty
Brink & Reichert (2020)	D	Research related to the accounting profession
Brown-Liburd & Joe (2020)	D	Under-represented accounting Ph.D. faculty
Jordan & Samuels (2020)	D	Changes that affect learning effectiveness
Kremin & Pasewark (2020)	D	Access to education and obtaining credentials
Madsen (2020)	D	Framework to generate research questions
Moon & Wood (2020)	D	Research relevance and productivity
Pasewark (2020)	D	Overview of research initiatives in accounting education
6.2. General research topics		
Apostolou et al. (2020)	D	Accounting education literature review (2019)
Boyle et al. (2020a)	D	Strategies to publish in practitioner journals
Boyle et al. (2020b)	D	Analysis of practitioner publications
Lindsay (2019)	D	Professionals moving to academe doing research
Tucker & Scully (2020)	D	MBA student perceptions of academic research
6.3. Teaching		
Bernardi & Higgins (2020)	E	Ways to reduce classroom cheating
Golden & Kohlbeck (2020)	E	Reduce online test cheating
Khayati & Ariail (2020)	E	Student perceptions of teaching in US and Tunisia
6.4. Other faculty issues		
Bergner et al. (2020)	E	Faculty credentials
Fogarty (2020)	D	Post-COVID accounting education
Sangster et al. (2020)	D	Faculty perceptions on impact of COVID-19

*Empirical (E) or descriptive (D) article

Table 15

Publications by article type (1991-2020)

Year	Total articles	Empirical articles		Nonempirical articles (d)	
		#	%	#	%
2020 (a)	88	36	41%	52	59%
2019 (a)	81	31	38%	50	62%
2018 (a)	101	46	45%	55	55%
2017 (a)	103	40	39%	63	61%
2016 (b)	108	48	44%	60	56%
1991-2015 (c)	1,580	792	50%	788	50%
Total (1991-2019)	1,973	957	49%	1,016	51%

(a) Refer to Table 5 for details.

(b) Apostolou et al. (2017b)

(c) Rebele and St. Pierre (2015, 130)

(d) Includes descriptive articles, instructional resources, and cases.

References

- Akaaboune, O., Blix, L., Daigle, R., & Quarles, R. (2020). Data analytics in the financial statement audit: Assessing its active learning effects on student performance. *The Accounting Educators' Journal*, 30, 115-135.
- Albring, S. M., & Elder, R. J. (2020). Research initiatives in accounting education: Managing academic programs. *Issues in Accounting Education*, 35(4), 61-74.
- Alshurafat, H., Beattie, C., Jones, G., & Sands, J. (2020). Perceptions of the usefulness of various teaching methods in forensic accounting education. *Accounting Education*, 29(2), 177-204.
- Andiola, L. M., Masters, E., & Norman, C. (2020). Integrating technology and data analytic skills into the accounting curriculum: Accounting department leaders' experiences and insights. *Journal of Accounting Education*, 50, 100655.
- Apostolou, B., Dorminey, J. W., & Hassell, J. M. (2021). Accounting education literature review (2020). *Journal of Accounting Education*, under review.
- Apostolou, B., Dorminey, J. W., & Hassell, J. M. (2020). Accounting education literature review (2019). *Journal of Accounting Education*, 51, 100670.
- Apostolou, B., Dorminey, J. W., Hassell, J. M., & Hickey, A. (2019). Accounting education literature review (2018). *Journal of Accounting Education*, 47, 1-27.
- Apostolou, B., Dorminey, J. W., Hassell, J. M., & Rebele, J. E. (2015). Accounting education literature review (2013-2014). *Journal of Accounting Education*, 33(2), 69-127.
- Apostolou, B., Dorminey, J. W., Hassell, J. M., & Rebele, J. E. (2016). Accounting education literature review (2015). *Journal of Accounting Education*, 35, 20-55.
- Apostolou, B., Dorminey, J. W., Hassell, J. M., & Rebele, J. E. (2017a). Accounting education literature review (2016). *Journal of Accounting Education*, 39, 1-31.
- Apostolou, B., Dorminey, J. W., Hassell, J. M., & Rebele, J. E. (2017b). Analysis of trends in the accounting education literature (1997-2016). *Journal of Accounting Education*, 41, 1-14.
- Apostolou, B., Dorminey, J. W., Hassell, J. M., & Rebele, J. E. (2018). Accounting education literature review (2017). *Journal of Accounting Education*, 43, 1-23.
- Apostolou, B., Dorminey, J. W., Hassell, J. M., & Watson, S. F. (2013). Accounting education literature review (2010-2012). *Journal of Accounting Education*, 31(2), 107-161.
- Apostolou, B., Hassell, J. M., Rebele, J. E., & Watson, S. F. (2010). Accounting education literature review (2006-2009). *Journal of Accounting Education*, 28(3-4), 145-197.

- Apostolou, B., Watson, S. F., Hassell, J. M., & Webber, S. A. (2001). Accounting education literature review (1997-1999). *Journal of Accounting Education*, 19(1), 1-61.
- Association to Advance Collegiate Schools of Business (AACSB). (2018). *Accounting Standards* available at: <https://www.aacsb.edu/accreditation/standards/accounting>.
- Baldauf, J., Graszitz, & Müller, C. (2020). A teaching concept for auditing—Evaluation of the ILPA case. *Accounting Education*, 29(4), 372-408.
- Beatson, N., Gabriel, C., Howell, A., Scott, S., van der Meer, J., & Wood, L. C. (2020). Just opt in: How choosing to engage with technology impacts business students' academic performance. *Journal of Accounting Education*, 50, 100641.
- Bergner, J., Chen, Y., & Simerly, M. (2020). Accounting faculty and professional certifications: Experiences and perceptions. *Advances in Accounting Education: Teaching and Curriculum Innovations*, 24, 143-164.
- Bernardi, R. A., & Higgins, K. M. (2020). Factors associated with college cheating and suggestions for reducing classroom cheating. *The Accounting Educators' Journal*, 30, 1-25.
- Bernardi, R.A., Banzhoff, C.A., Martino, A.M., & Savasta, K.J. (2012). Challenges to academic integrity: Identifying the factors associated with the cheating chain. *Accounting Education*, 26(3), 247-263.
- Berry, R., & Routon, W. (2020). Soft skill change perceptions of accounting majors: Current practitioner views versus their own reality. *Journal of Accounting Education*, 53, 100691.
- Bloom, B. S. (1956). Taxonomy of educational objectives: The classification of educational goals. In M. D. Engelhart, E. J. Furst, W. H. Hill, & D. R. Krathwohl (eds.), *Taxonomy of educational objectives: The classification of educational goals (Handbook I: Cognitive domain)*. New York: David McKay Company, Inc.
- Boyle, D. M., Boyle, J. F., & Hermanson, D. R. (2020a). How to publish in peer-reviewed practitioner accounting journals. *Issues in Accounting Education*, 35(2), 19-30.
- Boyle, D. M., Boyle, J. F., & Hermanson, D. R. (2020b). The intersection of academia and practice: Publishing in leading U.S. accounting organizations' journals. *Issues in Accounting Education*, 35(2), 1-17.
- Boyle, D. M., & Hermanson, D. R. (2020). Research initiatives in accounting education: Developing and utilizing faculty. *Issues in Accounting Education*, 35(4), 75-86.

- Braun, R. L., Boldt, M. N., Mauldin, S., & Viosca, C. (2020). Accounting graduates with both online and traditional coursework: Impact on hiring decisions. *Accounting Education*, 29(4), 340-355.
- Braun, R. L., & Simpson, W. R. (2004). The pause method in undergraduate auditing: An analysis of student assessments and relative effectiveness. *Advances in Accounting Education: Teaching and Curriculum Innovations*, 6, 69-85.
- Brink, A. G., & Reichert, B. E. (2020). Research initiatives in accounting education: Serving and enhancing the profession. *Issues in Accounting Education*, 35(4), 25-33.
- Brown-Liburd, H., & Joe, J. R. (2020). Research initiatives in accounting education: Toward a more inclusive accounting academy. *Issues in Accounting Education*, 35(4), 87-110.
- Calderon, T. G., & Nagy, A. L. (2020). A closer look at research on CPA exam success. *Advances in Accounting Education: Teaching and Curriculum Innovations*, 24, 165-178.
- Chartered Global Management Accountant (CGMA). (2019). *CGMA Competency Framework 2019 edition* (<https://www.cgma.org/resources/tools/cgma-competency-framework.html>).
- Chen, T. T. Y., Fang, H., Wang, Y., & Zhou, Q. (2020). Is the pause method in teaching auditing applicable in a different educational environment: A replication study. *Advances in Accounting Education: Teaching and Curriculum Innovations*, 24, 181-194.
- Cheng, C., Flasher, R. & Schenck, K. (2020). Decade comparisons: Do students' ethical attitudes shift? *Advances in Accounting Education: Teaching and Curriculum Innovations*, 24, 31-45.
- Clance, P. R. (1985). *The Impostor Phenomenon: When Success Makes You Feel Like a Fake*. Toronto: Bantam Books.
- CPA Canada. (2012). The chartered professional accountant competency map—Understanding the competencies a candidate must demonstrate to become a CPA (p. 95). <https://www.cpacanada.ca/en/become-a-cpa/pathways-to-becoming-a-cpa/national-education-resources/the-cpa-competency-map>.
- Daniels, B., Nix, W., & Morgan, M. (2020). Revising the content of intermediate accounting: An analysis of perceptions of accounting educators. *The Accounting Educators' Journal*, 30, 27-43.
- Dolce, V., Emanuel, F., Cisi, M., & Ghislieri, C. (2020). The soft skills of accounting graduates: Perceptions versus expectations. *Accounting Education*, 29(1), 57-76.
- Donnellan, M. B., Oswald, F. L., Baird, B. M., & Lucas, R. E. (2006). The mini-IPIP scales: Tiny-yet-effective measures of the big five factors of personality. *Psychological Assessment*, 18(2), 192-203.

- Driskill, T., & Rankin, R. (2020). Cross-cultural comparison of ethical reasoning of students in China and the United States. *Accounting Education*, 29(3), 291-304.
- Efrat, R., & Plunkett, S. W. (2020). Evaluating the impact of the VITA program on attitudes and motives regarding volunteering and civic engagement. *Advances in Accounting Education: Teaching and Curriculum Innovations*, 24, 89-106.
- Enget, K., Garcia, J. L., & Webinger, M. (2020). Majoring in accounting: Effects of gender, difficulty, career opportunities, and the imposter phenomenon on student choice. *Journal of Accounting Education*, 53, 100693.
- Fan, H., & Song, X. (2020). The advantages of combining mobile technology and audience response systems. *Journal of Accounting Education*, 50, 100657.
- Felski, E. A., & Empey, T. B. (2020). Should blockchain be added to the accounting curriculum? Evidence from a survey of students, professionals and academics. *The Accounting Educators' Journal*, 30, 201-218.
- Fogarty, T. J. (2020). Accounting education in the post-COVID world: Looking into the Mirror of Erised. *Accounting Education*, 29(6), 563-571.
- Fontaine, R., & Khemakhem, H. (2020). A practitioner's perspective on management accounting graduates' competencies: A Canadian field study. *The Accounting Educators' Journal*, 30, 157-171.
- Freeman, M. S., & Friedman, M. (2020). Story writing in the accounting classroom. *The Accounting Educators' Journal*, 30, 67-86.
- Kaminski, K. A., Golemon, D. L., & McEacharn, E. M. (2020). The switch: A study of promoting introductory managerial accounting as the first accounting course for business and non-business majors. *The Accounting Educators' Journal*, 30, 173-200.
- Gentile, M. C. (2010). *Giving voice to values: How to speak your mind when you know what's right*. New Haven, CT: Yale University Press.
- Gittings, L., Taplin, R., & Kerr, R. (2020). Experiential learning activities in university accounting education: A systematic literature review. *Journal of Accounting Education*, 52, 100680.
- Golden, J., & Kohlbeck, M. (2020). Addressing cheating when using test bank questions in online classes. *Journal of Accounting Education*, 52, 100671.
- Hasselback, J. R. (2021). Accounting faculty directory. Supported by the American Accounting Association and available at <http://www.accountingfacultydirectory.org/>.

- Hofstede, G. (1991). *Cultures and organizations: Software of the mind*. London: McGraw-Hill.
- Huber, M. M., Leach-López, M. A., Lee, E., & Mafi, S. L. (2020). Improving accounting student writing skills using writing circles. *Journal of Accounting Education*, 53, 100694.
- Ireland, C. (2020). Apprehension felt towards delivering oral presentations: A case study of accountancy students. *Accounting Education*, 29(3), 305-320.
- Jordan, E. E., & Samuels, J. A. (2020). Research initiatives in accounting education: Improving learning effectiveness. *Issues in Accounting Education*, 35(4), 9-24.
- Kaminski, K. A, Golemon, D. L., & McEacharn, E. M. (2020). The switch: A study of promoting introductory managerial accounting as the first accounting course for business and non-business majors. *The Accounting Educators' Journal*, 30, 173-200.
- Karatzimas, S. (2020). The beneficial role of government accounting literacy in developing participatory citizens. *Accounting Education*, 29(3), 229-246.
- Kegan, R. (2009). What “form” Transforms? A constructive-developmental approach to transformative learning. In K. Illeris (Ed.), *Contemporary theories of learning* (pp. 35-52). Routledge.
- Khayati, A., & Ariail, D. L. (2020). Business students' perceptions of faculty attributes: A two-country cross-cultural comparison. *Accounting Education*, 29(2), 153-176.
- Kremin, J., & Pasewark, W. R. (2020). Research initiatives in accounting education: Providing access to education and obtaining credentials. *Issues in Accounting Education*, 35(4), 47-60.
- Lee, L., Evans, A., & Downen, T. (2020). Golf, networking, and accounting education: A gendered approach. *Journal of Accounting Education*, 52, 100681.
- Lindsay, H. (2020). From fledgling to fledged: How accountants in academia develop their research capabilities. *Accounting Education*, 29(4), 409-430.
- Madsen, P. E. (2020). Research initiatives in accounting education: Transforming today's students into accounting professionals. *Issues in Accounting Education*, 35(4), 35-46.
- Malan, M. (2020). Engaging students in a fully online accounting degree: An action research study. *Accounting Education*, 29(4), 321-339.
- McCroskey, J. C. (1982). *An introduction to rhetorical communication* (4th Ed). Englewood Cliffs, NJ.: Prentice-Hall.

- Mellado, L., Parte, L., & Villanueva, E. (2020). Perceptions of the accounting profession based on an analysis of metaphors by undergraduate accounting students. *Accounting Education, 29*(6), 572-604.
- Miller, W. F., Shawver, T. J., & Mintz, S. M. (2020). Measuring the value of integrating GVV into a standalone accounting ethics course. *Journal of Accounting Education, 51*, 100669.
- Moon, J. S., & Wood, D. A. (2020). Research initiatives in accounting education: Research relevance and research productivity. *Issues in Accounting Education, 35*(4), 111-124.
- Murphy, B., & Hassall, T. (2020). Developing accountants: From novice to expert. *Accounting Education, 29*(1), 1-31.
- Nsor-Ambala, R. (2020). Impact of exam type on exam scores, anxiety, and knowledge retention in a cost and management accounting course. *Accounting Education, 29*(1), 32-56.
- O'Haver, R. (2020). The importance of supplemental resources in accounting education. *Advances in Accounting Education: Teaching and Curriculum Innovations, 24*, 129-140.
- Papageorgiou, E., & Callaghan, C. W. (2020). Accountancy learning skills and student performance in accounting education: Evidence from the South African context. *Accounting Education, 29*(2), 205-228.
- Pasewark, W. R. (2020). Research initiatives in accounting education: A proposed agenda for accounting education research. *Issues in Accounting Education, 35*(4), 3-7.
- Paulhus, D. L. (1991). Measurement and control of response bias. In J.P. Robinson, P.R. Shaver, & L.S. Wrightsman (eds.), *Measures of personality and psychological attitudes* (pp. 17-59). San Diego: Academic Press.
- Phillips, F., Lobdell, B., & Neigum, J. (2020). Does the effectiveness of interspersed and blocked questions vary across readers? *Issues in Accounting Education, 35*(1), 1-12.
- Powell, L., Lambert, D., McGuigan, N., Prasad, A., & Lin, J. (2020). Fostering creativity in audit through co-created role-play. *Accounting Education, 29*(6), 605-639.
- Ramanau, R., Hughes, J., & Grayson, P. (2020). Introducing computer-marked tests in an online financial accounting course: Patterns in academic performance and approaches to assessment design. *Advances in Accounting Education: Teaching and Curriculum Innovations, 24*, 195-214.
- Rebele, J. E., Apostolou, B. A., Buckless, F. A., Hassell, J. M., Paquette, L. R., & Stout, D. E. (1998a). Accounting education literature review (1991-1997), part I: Curriculum and instructional approaches. *Journal of Accounting Education, 16*(1), 1-51.

- Rebele, J. E., Apostolou, B. A., Buckless, F. A., Hassell, J. M., Paquette, L. R., & Stout, D. E. (1998b). Accounting education literature review (1991-1997), part II: Students, educational technology, assessment, and faculty issues. *Journal of Accounting Education*, 16(2), 179-245.
- Rebele, J. E., Stout, D. E., & Hassell, J. M. (1991). A review of empirical research in accounting education: 1985-1991. *Journal of Accounting Education*, 9(2), 167-231.
- Rebele, J. E., & St. Pierre, E. K. (2015). Stagnation in accounting education research. *Journal of Accounting Education*, 99(2), 128-137.
- Rebele, J. E., & Tiller, M. G. (1986). Empirical research in accounting education: A review and evaluation. In A. C. Bishop, E. K. St Pierre, and R. L. Benke (eds.), *Research in accounting education* (pp. 1–54). Harrisonburg, VA: Center for Research in Accounting Education, James Madison University.
- Rowling, J. K. (2015). *Harry Potter and the Philosopher's Stone (Vol. 1)*. Bloomsbury Publishing.
- Russell, H. M., Ariail, D. L., Smith, K. T., & Smith, L. M. (2020). Analysis of compassion in accounting and business students, overall and by gender. *Journal of Accounting Education*, 53, 100684.
- Sangster, A., Stoner, G., & Flood, B. (2020). Insights into accounting education in a COVID-19 world. *Accounting Education*, 29(5), 431-562.
- Schafer, B. A., Cleaveland, C., & Schafer, J. B. (2020). Stakeholder perceptions of the value of accounting student organizations. *Journal of Accounting Education*, 50, 100656.
- Schönfeldt, N., Hancock, P., & Birt, J. (2020). Consolidating the student voice using think aloud protocols. *Journal of Accounting Education*, 53, 100683.
- Shawver, T. J. (2020). An experimental study of cooperative learning in advanced financial accounting courses. *Accounting Education*, 29(3), 247-262.
- Shehata, N., Mitry, C., Shawki, M., & El-Helaly, M. (2020). Incorporating Nearpod in undergraduate financial accounting classes in Egypt. *Accounting Education*, 29(2), 137-152.
- Shin, H., Lacina, M., Lee, B. B., & Pan, S. (2020). Schools' CPA review course affiliations and success on the uniform CPA examination. *Journal of Accounting Education*, 50, 100642.
- Smith, K. J., Haight, T. D., Emerson, D. J., Mauldin, S., & Wood, B. G. (2020). Resilience as a coping strategy for reducing departure intentions of accounting students. *Accounting Education*, 29(1), 77-108.

- Smith, J. L., & Stephens, N. M. (2020). The Reel Wheel: Using analytical procedures as substantive tests of account balances. *Issues in Accounting Education*, 35(1), 13-24.
- Sprecher, S., & Fehr, B. (2005). Compassionate love for close others and humanity. *Journal of Social and Personal Relationships*, 22(5), 629-651.
- Stice, E. K., Stice, J. D., & Albrecht, C. (2020). Study choices by introductory accounting students: Those who study more do better and text readers outperform video watchers. *Advances in Accounting Education: Teaching and Curriculum Innovations*, 24, 3-29.
- Stout, D. E. (2020). On the value of reading and reading more: A personal reflection and educational resource. *The Accounting Educators' Journal*, 30, 87-113.
- Thorne, L. (2000). The development of two measures to assess accountants' prescriptive and deliberative moral reasoning. *Behavioral Research in Accounting*, 12, 139-169.
- Tucker, B. P., & Scully, G. (2020). Fun while it lasted: Executive MBA student perceptions of the value of academic research. *Accounting Education*, 29(3), 263-290.
- Uwizeyemungu, S., Bertrand, J., & Poba-Nzaou, P. (2020). Patterns underlying required competencies for CPA professionals: A content and cluster analysis of job ads. *Accounting Education*, 29(2), 109-136.
- van Rooyen, A. A. (2020). Social media is so easy to share. *Accounting Education*, 29(4), 356-371.
- Watson, S. F., Apostolou, B., Hassell, J. M., & Webber, S. A. (2003). Accounting education literature review (2000-2002). *Journal of Accounting Education*, 21(4), 267-325.
- Watson, S. F., Apostolou, B., Hassell, J. M., & Webber, S. A. (2007). Accounting education literature review (2003-2005). *Journal of Accounting Education*, 25(1-2), 1-58.
- Zekany, K. E. (2020). Curricular study of AACSB accounting programs: What core accounting courses are required to earn an accounting generalist degree? *The Accounting Educators' Journal*, 30, 137-156.

Appendix A. Cases organized by primary content area.

During 2020, the five journals covered by this literature review published 21 cases (24% of the 88 articles published). We identified the cases in alphabetical order within four general content areas: (1) auditing and forensic accounting, (2) financial accounting (includes IFRS), (3) managerial and sustainability accounting, and (4) taxation. As a service to the profession, University of Notre Dame hosts a site that permits faculty to search all cases published in *Issues in Accounting Education*, the *IMA Educational Case Journal*, the *Journal of Accounting Education*, and *Accounting Perspectives*.³⁰

Cases by content area
<i>Auditing and forensic accounting</i>
1. Gross, A., Hoelscher, J., Reed, B. J., & Sierra, G. E. (2020). The new nuts and bolts of auditing: Technological innovation in inventorying inventory. <i>Journal of Accounting Education</i> , 52, 100679.
2. Holtzblatt, M. A., Foltin, C., & Tschakert, N. (2020). Learning from ethical violations in public accounting: A South African audit scandal and a firm’s transformation. <i>Issues in Accounting Education</i> , 35(2), 37-63.
3. Negangard, E. M. (2020). Electronic discovery (eDiscovery): Performing the early stages of the Enron investigation. <i>Issues in Accounting Education</i> , 35(1), 43-58.
4. Ozlanski, M. E., Negangard, E. M., & Fay, R. G. (2020). Kabbage: A fresh approach to understanding fundamental auditing concepts and the effects of disruptive technology. <i>Issues in Accounting Education</i> , 35(2), 77-86.
5. Saadullah, S. M., & Elsayed, N. (2020). An audit simulation of the substantive procedures in the revenue process—A teaching case incorporating Bloom’s taxonomy. <i>Journal of Accounting Education</i> , 52, 100678.
6. Smith, J. L., & Stephens, N. M. (2020). The Reel Wheel: Using analytical procedures as substantive tests of account balances. <i>Issues in Accounting Education</i> , 35(1), 13-24.
<i>Financial accounting (includes IFRS)</i>
7. Albritton, B. R., & Holmes, A. F. (2020). Blue Gilia Construction, Inc.: A revenue recognition case study. <i>The Accounting Educators’ Journal</i> , 30, 45-66.

³⁰ <https://cases.ndacct.com/>

Cases by content area
8. Collier, D. M., & Rozen, H. (2020). An instructional case: Making the case for unlimited vacation days at Altech. <i>Advances in Accounting Education: Teaching and Curriculum Innovations</i> , 24, 109-127.
9. Gujarathi, M. R., & Dugar, A. (2020). Channel-stuffing reinvented: Earnings management in Toshiba's personal computers division. <i>Issues in Accounting Education</i> , 35(3), 25-38.
10. Long, J. H., & Nothhelfer, R. (2020). Chemotech International, Inc.: Accounting for international differences in the measurement of raw material and work-in-process inventories. <i>Issues in Accounting Education</i> , 35(3), 57-67.
11. McNellis, C. J., Barone, G. J., & Herbold, J. (2020). Larson Industries: A case on identifying and researching revenue recognition issues. <i>Issues in Accounting Education</i> , 35(2), 65-75.
12. Mueller, M. A., Stott, F. A., & Wilson, A. B. (2020). Bonus depreciation and its effect on net present value in relation to capital purchases. <i>Advances in Accounting Education: Teaching and Curriculum Innovations</i> , 24, 67-87.
<i>Managerial and sustainability accounting</i>
13. Anctil, R., Grimm, S. D., & Maloney, M. M. (2020). Atlas managerial accounting case: Examining joint products in the international scrap metal recycling industry. <i>Journal of Accounting Education</i> , 51, 100660.
14. Brennan, N. M. (2020). Directors' responsibilities, accountability, and business judgment: The Pierce Contracting case. <i>Issues in Accounting Education</i> , 35(1), 25-41.
15. Hoozée, S., Maussen, S., Bruggeman, W., & Scheipers, G. (2020). Fitting responsibility center structures to strategy: Bakery Products International. <i>Journal of Accounting Education</i> , 53, 100692.
16. Krawczyk, K., & Showalter, D. S. (2020). Utilizing environmental remediation to teach research skills: An instructional case. <i>Journal of Accounting Education</i> , 51, 100659.
17. Maloney, M. M., Grimm, S. D., & Anctil, R. (2020). Atlas international business case: Examining globalization and economic indicators for the scrap metal recycling industry. <i>Journal of Accounting Education</i> , 51, 100661.
18. Robinson, M. A., Stuebs, M., Wilfong, L., & Beard, H. (2020). The costs to bus go round and round: Charting a route to a decision. <i>Journal of Accounting Education</i> , 50, 100654.
<i>Taxation</i>
19. Adams, M. T., Inger, K. K., & Meckfessel, M. D. (2020). Meeting the demands of the accounting curriculum: An integrated approach using a tax research case assignment. <i>Advances in Accounting Education: Teaching and Curriculum Innovations</i> , 24, 49-66.
20. Borthick, A. F., & Smeal, L. N. (2020). Data analytics in tax research: Analyzing worker agreements and compensation data to distinguish between independent contractors and employees using IRS factors. <i>Issues in Accounting Education</i> , 35(3), 1-23.
21. Lee, L. S., Hansen, V., & Brink, W. (2020). Tax retirement savings decisions using an Excel spreadsheet approach. <i>Issues in Accounting Education</i> , 35(3), 39-55.