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Main article

Accounting education literature review (2015)

Barbara Apostolou [a,*], Jack W. Dorminey [a], John M. Hassell [b], James E. Rebele [c]

[a] Department of Accounting, College of Business and Economics, West Virginia University, Morgantown, WV 26506-6025, USA
[b] Kelley School of Business Indianapolis, Indiana University, BS4012, 801 W. Michigan Street, Indianapolis, IN 46202-5151, USA
[c] School of Business, Robert Morris University, 6001 University Boulevard, Moon Township, PA 15108, USA

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ABSTRACT

This review of the accounting education literature includes 97 articles published during 2015 in six journals: (1) *Journal of Accounting Education*, (2) *Accounting Education*, (3) *Advances in Accounting Education*, (4) *Global Perspectives on Accounting Education*, (5) *Issues in Accounting Education*, and (6) *The Accounting Educators' Journal*. This article updates prior accounting education literature reviews by organizing and summarizing recent contributions to the accounting education literature. Articles are categorized into five sections corresponding to traditional lines of inquiry: (1) curriculum and instruction, (2) instruction by content area, (3) educational technology, (4) students, and (5) faculty. Suggestions for research in all areas are presented. Articles presenting instructional resources and cases published in the same six journals during 2015 are listed in appendices categorized by the appropriate content area.

1. Introduction

This review of the accounting education literature includes 97 articles: 68 empirical or descriptive articles, 9 instructional resources, and 20 cases appearing in six journals during 2015.[1] The journals

* Corresponding author. Tel.: +1 304 293 0091; fax: +1 304 293 0635.
E-mail address: barbara.apostolou@mail.wvu.edu (B. Apostolou).

[1] Previous accounting education literature reviews have covered multiple years, with most reviews covering a three-year period. This is the first review for a one-year period. Using a one-year period allows accounting educators more timely access to the reviews. However, using a one-year period makes it more difficult to discuss trends.

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included in this review are (1) *Journal of Accounting Education*, (2) *Accounting Education*, (3) *Advances in Accounting Education*, (4) *Global Perspectives on Accounting Education*, (5) *Issues in Accounting Education,* and (6) *The Accounting Educators' Journal*. As summarized in Table 1, Panel A, this article is the 11th in a series of reviews first published in 1986. The journals reviewed since 1991 are presented in Table 1, Panel B, according to time period with reference to the Table 1, Panel A citation.[2] For ease of presentation, Table 2 summarizes commonly used abbreviations and corresponding definitions used throughout this article.

Eighteen issues of the six accounting education journals are reviewed for 2015. Three of the 18 issues incorporated special themes. *Accounting Education* dedicated issues to two topics: (1) journal rankings and (2) the Royal Melbourne Institute of Technology (RMIT) Accounting Educators' Conference[3] (Volume 24, Issues 3 and 6, respectively). *Advances in Accounting Education* included a special section on teaching the statement of cash flows (Volume 17). Seventeen percent of the journal issues reviewed for 2015 were special issues or had special sections as compared to 31% of journal issues reviewed for the previous five years being special issues or including special sections.

We classify a published article as empirical, descriptive, instructional resource, or case. Consistent with prior reviews, an empirical article is one in which conclusions are derived from an analysis of data. An article that discusses a strategy, describes an innovation, or reports student perceptions without statistical analysis generally is classified as descriptive.

Tables 3 and 4 provide data about each journal in our review with regard to type of article and subject areas corresponding to the organization of this review. Table 3 presents a classification of the 97 articles as empirical or descriptive ($n = 68$, 70.1%), instructional resources ($n = 9$, 9.3%), and cases ($n = 20$, 20.6%). More empirical ($n = 49$) than descriptive ($n = 19$) articles were published in 2015. Table 4 provides an overview of the number of empirical and descriptive articles allocated to each subject area for each of the six journals. Two subject areas, student issues ($n = 19$, 27.9%) and faculty ($n = 16$, 23.5%), account for half of the articles summarized. The remaining articles address curriculum ($n = 15$, 22.1%), instruction by content area ($n = 12$, 17.7%), and educational technology ($n = 6$, 8.8%).

Our reviews of empirical articles identify the data collection method, analysis approach, and geographic location of the sample studied. Three tables summarize the empirical articles along these dimensions. In Table 5, we report the frequency of data collection method by section reference and subject area for the 49 empirical articles reviewed.[4] Of the 49 empirical articles, most ($n = 26$, 53.0%) are based on data collected via survey, followed by student or course performance ($n = 7$, 14.3%), and quasi-experimental ($n = 7$, 14.3%). The more rigorous experimental approach was used only one time ($n = 1$, 2.0%). We also discuss and critique the research rigor of empirical accounting education articles, which continues to be an important part of the literature reviews.

Table 6 reports the analysis approaches employed in the empirical articles.[5] The most common analysis approaches are regression ($n = 16$, 32.7%), differences-in-means ($n = 15$, 30.6%), and tabulation ($n = 13$, 26.5%). The geographic location of the sample is reported in Table 7. The majority of the studies occurred in the US and Canada ($n = 27$, 55.1%), Australia and New Zealand ($n = 9$, 18.3%), followed by multinational ($n = 5$, 10.2%), Europe ($n = 4$, 8.2%), and Asia and Africa ($n = 4$, 8.2%).

An instructional resource article describes a specific mode of delivery that can facilitate both teaching and learning of content. We tabulate the nine instructional resource articles published in 2015 by applicable content area(s) for convenience (Appendix A). As an example of an instructional resource, Sheehan and Schmidt (2015) present a resource to prepare undergraduate and graduate students to become ethical decision makers by having them explore their own personal values.

A case presents an actual or hypothetical set of information followed by a set of questions or activities that encourage students to understand complexities of a topic or topics. The listing of 20 articles

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

[3] Includes six articles based on presentations at the RMIT University Accounting Educators' Conference in 2014 on a variety of topics that we have classified in Section 2 (curriculum and instruction) or Section 5 (students).

[4] For studies that employed more than one data collection method, we tally and discuss the most rigorous.

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

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Table 1
Accounting education literature review series and journals reviewed.

Panel A: Accounting education literature review series

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

Panel B: Journals reviewed since 1991

	1991–1997(a)	1997–1999	2000–2002	2003–2005	2006–2009	2010–2012	2013–2014	2015
Journal of Accounting Education	✓	✓	✓	✓	✓	✓	✓	✓
Accounting Education	(b)	✓	✓	✓	✓	✓	✓	✓
Advances in Accounting Education	(c)	✓	✓	✓	(d)	✓	✓	✓
Global Perspectives on Accounting Education	(e)	(e)	(e)	✓	✓	✓	✓	✓
Issues in Accounting Education	✓	✓	✓	✓	✓	✓	✓	✓
The Accounting Educators' Journal	✓	(f)	(f)	(g)	✓	✓	✓	✓

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

Table 2
Summary of common abbreviations.

Abbreviation	Definition
AAA	American Accounting Association
AACSB	The Association to Advance Collegiate Schools of Business
AICPA	American Institute of Certified Public Accountants
AIS	Accounting information systems
CPA	Certified Public Accountant
CPD	Continuing professional development
CPE	Continuing professional education
FCPA	Foreign Corrupt Practices Act
GAAP	Generally accepted accounting principles (US)
GNP	Government and nonprofit accounting
GPA	Grade point average
IFRS	International financial reporting standards
NASBA	National Association of State Boards of Accountancy (US)
NFP	Not-for-profit organizations
RMIT	Royal Melbourne Institute of Technology, Australia
SCF	Statement of cash flows
SET	Student evaluation of teaching

Table 3
Article classification by journal.

Journal	Summarized articles			Appendices		
	Empirical[a]	Descriptive[b]	Total	Instructional resources[c]	Cases[d]	Total
Journal of Accounting Education	5	4	9	4	4	17
Accounting Education	22	9	31	1		32
Advances in Accounting Education	5	5	10	3	1	14
Global Perspectives on Accounting Education	8		8			8
Issues in Accounting Education	4	1	5		14	19
The Accounting Educators' Journal	5		5	1	1	7
Total	49	19	68	9	20	97
Percentage of total	*50.5%*	*19.6%*	*70.1%*	*9.3%*	*20.6%*	*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.

classified as cases appears in Appendix B, identified by content area or areas to which the case best relates.[6] As an example of our classification scheme, Gujarathi (2015) uses factual corporate information to facilitate study of the structure and motivation for earnings manipulation for auditing, forensic accounting, or financial accounting classes, which is an example of how one case may apply to multiple content areas.

Our review is organized in five major sections that correspond to traditional lines of inquiry. Each section begins with an overview of themes. Section 2 summarizes articles on curriculum and instruction, curricular issues, assurance of learning and assessment, core competencies, and instructional approaches. Section 3 includes articles on instruction by content area, and Section 4 summarizes articles on educational technology. Section 5 reviews articles related to the student perspective of accounting education, including academic major and career issues, skills and characteristics, and

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

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Table 4
Number of empirical (E) and descriptive (D) articles by section reference and subject area.

Journal	Section reference and subject area											
	2. Curriculum and instruction		3. Instruction by content area		4. Educational technology		5.Students		6. Faculty		Total summarized articles	
	E	D	E	D	E	D	E	D	E	D	E	D
Journal of Accounting Education	2	1		1					3	2	5	4
Accounting Education	4	2	2	3	1		11	2	4	2	22	9
Advances in Accounting Education	2	1	1	3	2	1					5	5
Global Perspectives on Accounting Education	1				1		4		2		8	
Issues in Accounting Education	1	1	1						2		4	1
The Accounting Educators' Journal			1		1		2		1		5	
Subtotal by article classification	10	5	5	7	5	1	17	2	12	4	49	19
Total by section reference and subject area		15		12		6		19		16		68
Percentage of total		*22.1%*		*17.7%*		*8.8%*		*27.9%*		*23.5%*		*100%*

Note: Refer to Table 3 for an overview of article production by journal.

Table 5
Data collection method used in empirical articles (*by frequency count*).

Section reference and subject area	Survey	Quasi-experiment	Published source	Performance	Interview	Experiment	Total
2. Curriculum and instruction	4	4		1	1		10
3. Instruction by content area		2	1	1		1	5
4. Educational technology	4			1			5
5. Students	12	1	1	1	2		17
6. Faculty	6		5		1		12
Total	26	7	7	4	4	1	49
Percentage of total	*53.0%*	*14.3%*	*14.3%*	*8.2%*	*8.2%*	*2.0%*	*100.0%*

Table 6
Analysis approach used in empirical articles (*by frequency count*).

Section reference and subject area	Regression	Differences-in-means	Tabulation	Analysis of variance	Path analysis	Total
2. Curriculum and instruction	2	4	4			10
3. Instruction by content area	3			1	1	5
4. Educational technology	3	1			1	5
5. Students	7	5	3	1	1	17
6. Faculty	1	5	6			12
Total	16	15	13	2	3	49
Percentage of total	*32.7%*	*30.6%*	*26.5%*	*4.1%*	*6.1%*	*100.0%*

Table 7
Geographic location of sample used in empirical articles (*by frequency count*).

Section reference and subject area	US and Canada	Australia and New Zealand	Multinational	Asia and Africa	Europe	Total
2. Curriculum and instruction	7	1			2	10
3. Instruction by content area	3	1	1			5
4. Educational technology	4			1		5
5. Students	6	7	1	2	1	17
6. Faculty	7		3	1	1	12
Total	27	9	5	4	4	49
Percentage of total	*55.1%*	*18.3%*	*10.2%*	*8.2%*	*8.2%*	*100.0%*

perspectives about and approaches to learning. Section 6 summarizes articles on faculty research, teaching, and other issues. Section 7 offers conclusions and reflections, along with suggestions for future accounting education scholarship.

2. Curriculum and instruction

This section summarizes articles on the process of curriculum change, curricular issues, assurance of learning and assessment, core competencies, and instructional approaches. The 15 articles (ten empirical, five descriptive) represent 22.1% of all empirical and descriptive articles published during 2015, which is consistent with prior years. An overview of the articles published appears in Table 8. One empirical article describes and tests the process of a major curriculum change. Two articles (one empirical, one descriptive) are related to curricular issues and reflect two distinctly different topics: (1) integration of information literacy in the curriculum and (2) importance of emphasizing the Foreign Corrupt Practices Act (FCPA). For the first time since the inception of the accounting education literature review articles, no published article addresses the 150-hour requirement. Two empirical articles address assurance of learning and assessment. Three articles on core competencies (two empirical, one descriptive) relate to integration of all competencies, with one each on communication and technology skills. Within the area of instructional approaches, seven articles (four empirical, three descriptive)

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Table 8
Overview of curriculum and instruction articles (Section 2).

	Reference	Type*	Topic
2.1.	*Process of curriculum change*		
	Spiceland et al. (2015)	E	Effect of introductory course redesign on retention and performance
2.2.	*Curricular issues*		
	Holtzblatt et al. (2015)	D	Integration of FCPA coverage in the curriculum
	Joseph et al. (2015)	E	Integration of information literacy in the curriculum
2.3.	*Assurance of learning and assessment*		
	Camp et al. (2015)	E	Alternative quiz formats to motivate learning
	Grimm (2015)	E	Learning logs enhance understanding
2.4.	*Core competencies*		
	Lawson et al. (2015)	D	Integration of communication, quantitative, analytical thinking, problem solving, interpersonal, and technological competencies in the curriculum
	Siriwardane et al. (2015)	E	Singapore accountants' communication skills
	Spraakman et al. (2015)	E	New Zealand technology skill expectations
2.5.	*Instructional approaches*		
	Akindayomi (2015)	E	Small group learning
	Capelo et al. (2015)	E	Simulation to learn balanced scorecard
	Dellaportas (2015)	D	Introduction of cognitive dissonance into learning
	Dunn and Hooks (2015)	E	Compressed classes are as effective as regular length
	Ellis et al. (2015)	D	Group project with peer feedback
	Marriott et al. (2015)	E	Use of simulations in finance courses
	Simon (2015)	D	Concept maps to assist in learning

* Empirical (E) or descriptive (D) article.

offer instructor perspectives on a variety of teaching strategies, including group learning, concept maps, and simulations.[7]

2.1. The process of curriculum change

We provide an in-depth review of Spiceland, Spiceland, and Schaeffer (2015), which reported the results of redesigning a financial accounting course required of all business majors at the University of Memphis. Motivated by declining retention and decline in students majoring in accounting, the multi-year review and redesign was based upon the educational literature and The National Center for Academic Transformation approach.[8] The process described and the assessment provided will be useful to accounting educators who are interested in redesigning the first accounting course.

A faculty committee charged with redesigning the financial accounting course had two primary goals: (1) increase success in the accounting principles course, and concurrently (2) enhance the preparation needed for success in upper-level accounting and business courses. The committee used three steps in the redesign process (Spiceland et al., 2015, 52):

1. Derive a list of core competencies and develop a syllabus consistent with achieving those proficiencies.
2. Design a multifaceted process of continual review conducive to students developing and retaining a deep-seated comprehension of the specified set of core competencies.
3. Identify the type, sources, and sequencing of appropriate technological components that enhance the learning environment.

The committee relied upon extant accounting education literature in the areas of core competency, repetition and performance, and technology in the classroom. The literature review contained in the Spiceland et al. (2015) article will be useful to accounting educators who are contemplating course redesign. Accounting and non-accounting faculty reviewed topics in the introductory course with the

[7] Articles that examine or describe student perspectives about pedagogy and assessment are summarized in Section 5.
[8] The National Center for Academic Transformation (http://www.thencat.org).

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purpose of identifying those topics deemed most important. The faculty achieved consensus on the necessity of a strong foundational knowledge (Spiceland et al., 2015, 54):

> A consensus was that a strong foundational knowledge of the early chapters outlining accounting as a measurement/communication process, the financial statements, the concepts of financial accounting, and adjusting entries were deemed imperative.

Also, the faculty chose to deemphasize some time-consuming topics (e.g., sum-of-the-years digits depreciation method) that accounting majors will cover in advanced courses. The accounting faculty chose to keep the debit/credit orientation of the course because it has pedagogical benefits to both accounting and non-accounting majors. However, in the redesign, some debit/credit examples were eliminated. Exhibit A in the article identifies topics that were covered prior to and after redesign. This exhibit will be useful to accounting faculty who might conduct a similar review/redesign.

Given the emphasis on developing fundamental skills, the new introductory financial accounting course devoted seven of fifteen weeks to fundamentals (e.g., the first four chapters of the textbook used, which correspond to accrual accounting, the accounting cycle, and internal controls; the relative emphasis before the change is not provided in the article). To provide repetition, each exam tested previous material as well as new material. After determining topic coverage, the faculty considered the objectives for developing and incorporating learning technology (Spiceland et al., 2015, 58):

1. To align content delivery more closely with contemporary students' learning styles.
2. To put greater emphasis on alternate learning styles by providing a multidimensional delivery approach that routinely includes current event videos, interactive Excel spreadsheets, animated videos, adaptive learning systems, online quizzes, interactive PowerPoint presentations, and learning quizzes.
3. To design exercises that have the potential to develop and enhance critical thinking skills essential for professional success.

The result of the course redesign is a process that has the following components:

- Prior to class, students complete a graded "did you read the chapter?" quiz that closes when class starts. The quizzes can be administered by a university course management system or publisher website. The purpose is to have students read the chapter before class.
- The class begins with a short video related to the day's topic. PowerPoint slides include link to introductory video.
- The instructor lectures on the topic and includes examples.
- Integrated Excel spreadsheets, usually one per chapter, are used. The instructor creates or uses textbook publisher website. It appears these assignments are completed outside of class, but may be discussed in class.
- Use of animated videos. The authors describe preparing animated videos to illustrate topics.[9]
- Use of interactive PowerPoint presentations; e.g., propose a question in a multiple choice format, allow students to answer, and then reveal answer and computation.
- Administer an end-of-class quiz. Students complete a short problem quiz before leaving class that pertains to that day's material. These problems are graded.
- Students use adaptive learning software outside of class to provide personalized learning. These assignments use the textbook publisher's software and are graded (about 5% of the course grade).

Data[10] for 2007–2013 (included 5932 students, 2498 pre-implementation and 3434 post-implementation, 16 semesters, 103 classes, and 21 instructors) were used to assess the effectiveness of the course redesign. Due to institutional data limitations, the authors noted that they were unable to control for SAT and student GPA before the course, variables which the accounting education literature have found to be significantly associated with performance in the introductory financial ac-

[9] Spiceland et al. (2015) used GoAnimate™ (www.goanimate.com).
[10] Data included course enrollment information, withdrawal rates, and student academic performance.

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counting course. The following were compared pre- and post-curriculum design: (1) success (percent of students earning a grade of "C" or better), (2) average class GPA, and (3) average withdrawal percent. Average class enrollment was used as a control in statistical tests.

Two comparisons were reported: (1) all instructors ($n = 21$) and (2) only those instructors teaching before and after the course redesign ($n = 8$). For both groups after redesign, the percent of students receiving a grade of "C" or better significantly increased, the average withdrawal percent significantly decreased, and the average course GPA significantly increased. Further, the average enrollment in intermediate accounting II significantly increased, after controlling for total college enrollment. The authors concluded that redesigning the introductory financial accounting course enhanced student retention and learning and increased the number of accounting majors.

2.2. Curricular issues

Joseph, George, and Strickland (2015) recommended that information literacy[11] be developed through an integrated course curriculum. They examined how faculty, employers, students, and alumni perceive the importance of the five steps of information literacy: (1) identifying information needs and sources, (2) accessing information sources, (3) evaluating sources, (4) integrating information, and (5) communicating information. Survey results showed that alumni ($n = 42$), employers ($n = 9$), and faculty ($n = 6$) placed high importance on all five steps in the information literacy process. Employers noted that information literacy skills become increasingly important throughout an individual's career. Although no statistical tests were conducted, survey results indicated that a class project was effective in improving students' ($n = 46$) understanding of some parts of the information literacy process.

Holtzblatt, Needles, Tschakert, Wong, and Klink (2015) observed that recent increases in Foreign Corrupt Practices Act (FCPA) prosecutions support expanding the coverage of the FCPA in the accounting curriculum. The article describes several ways that FCPA material can be integrated into the accounting curriculum, including role-playing, having expert guest speakers, and case analyses. The article also describes a standalone FCPA and anti-corruption course developed and taught by one of the authors.

2.3. Assurance of learning and assessment

Camp, Earley, and Morse (2015) reported on a classroom intervention at one US university where alternative quiz formats were used to motivate student learning. Alternative quiz formats included allowing students to retake a quiz at home or allowing students in-class time to discuss the quiz with classmates before submitting it for grading. Students ($n = 147$) enrolled in six sections of introductory financial accounting over three semesters participated in the intervention. Regardless of format, students perceived quizzes as effective for motivating learning. Students expressed a preference for the alternative quiz formats over the standard quiz format, with in-class discussions preferred to redoing the quiz as a take-home assignment.

Grimm (2015) gathered students' perceptions about the use of learning logs and assessed whether using learning logs affected content comprehension and exam performance. A learning log is a short paper that requires students to interpret and apply an accounting concept. Students ($n = 100$) enrolled in an introductory financial accounting class at a private university in the US completed learning logs on topics including overview of financial statements, internal controls and fraud, bond issues, and accrual accounting. Survey results showed that students perceived learning logs to be useful for understanding course concepts. After controlling for GPA, regression results indicated that learning logs containing problems closely related to course content (e.g., inventory accounting and bond issues) were significantly positively associated with increased exam scores, while learning logs on topics less connected to course content (e.g., internal controls and fraud) were not significantly associated with improved exam scores. Students completing introductory financial accounting in earlier semesters took quizzes instead of completing learning logs. A comparison of exam scores for students taking quizzes with

[11] Guthrie and Nicholls (2015) prepared a case to teach financial literacy using a personal budget (Appendix B).

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students completing learning logs showed that both achieved similar results, suggesting that quizzes and learning logs are equally effective in helping students learn course content.

2.4. Core competencies[12]

Lawson et al. (2015) discussed integration issues across four types of competencies: (1) foundation (e.g., communication, problem-solving), (2) topics (subject matter), (3) accounting (e.g., external reporting, information systems, assurance), and (4) broad management (e.g., leadership, ethics, governance).[13] The authors illustrated how competency integration might be achieved using capital investment decision analysis and inventory management as examples. Challenges to competency integration, including defining a set of integrated learning objectives and defining the scope of curricular integration, were also discussed. The authors provided selected resources for integrating communication, quantitative, analytical thinking and problem solving, interpersonal, and technology competencies.

Siriwardane, Low, and Blietz (2015) surveyed 53 practitioners in Singapore (public accounting $n = 22$, corporate accounting $n = 31$, response rates not reported) regarding the importance and performance of communication tasks by entry-level accountants. From an analysis of mean responses (no statistical tests conducted), the following seven findings regarding communication skills for entry-level accountants were reported: (1) communication is more frequently written than oral, (2) the most important communication skill is listening, (3) oral communication is high on the importance list, (4) informal speaking tasks are performed frequently, (5) formal writing tasks are performed least often, (6) clarity is the most important attribute of communication, and (7) the greatest gaps in importance and performance relate to listening attentiveness, listening responsiveness, reading comprehension, paraphrasing, and formal writing.

Spraakman, O'Grady, Askarany, and Akroyd (2015) interviewed 39 chief financial officers, controllers, and management accountants at 20 New Zealand companies regarding the information technology knowledge and skills management accounting graduates need when hired. Results of semi-structured interviews revealed that Excel is the most important information technology skill requirement for management accounting positions. More specifically, respondents indicated that management accounting graduates should be able to use filters, functions, pivot tables, graphs, charts, and data sorting functions in Excel. Respondents also indicated that it was crucial that new management accountants be able to use Excel to extract data from databases. A working knowledge of other Microsoft Office tools, such as Word, PowerPoint, and Outlook, also was perceived to be important, although knowledge of Access and Excel macros was not viewed as necessary for new management accountants. Modest exposure to an enterprise resource planning system was perceived to be important, although no specific system was identified.

2.5. Instructional approaches

Capelo, Lopes, and Mata (2015) used a business simulation to help students learn fundamental concepts of the balanced scorecard (BSC). Using a business simulator from Capelo and Dias (2009), participants ($n = 24$ in control group, $n = 95$ in experimental group) from two Portuguese universities made hypothetical business decisions every six months for a seven-year period. Students from both groups attended traditional BSC lectures and completed a survey regarding BSC. The experimental group participated in a computer-aided simulation where they individually made strategic decisions in the context of the BSC and then completed the same questionnaire. Dependent variables included two measures of understanding based on correct responses, and two levels of relevance measures based on students' self-reported perceptions of their understanding. Pre-test scores on the four variables between control and experimental were not significantly different. Comparing pre- and post-test scores,

[12] One of the articles classified as an instructional resource (Appendix A) uses mini-cases to aid in learning core competencies (Brenner, Jeancola, & Watkins, 2015).

[13] This article extended previous work by the same authors (Lawson et al., 2014), which was part of a joint project of the AAA's Management Accounting Section and the Institute of Management Accountants.

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the experimental group showed significantly higher scores on both measures of understanding and one measure of relevance.

Marriott, Tan, and Marriott (2015) surveyed UK universities ($n = 76$, 78% response rate) offering accounting and finance programs regarding the use of simulations in the finance curriculum. About 65% reported using simulations in the undergraduate program, graduate program, or both. The authors also described the use of a simulation regarding stock market trading in a graduate finance class.

Simon (2015) discussed the use of concept maps[14] to help students learn accounting. In contrast to PowerPoint, which may lead students to view knowledge and learning as linear, concept maps demonstrate knowledge and learning in a nonlinear and interconnected way, which may help students understand the various linkages among accounting topics. Recommendations regarding how concept maps could be used by accounting educators were presented.

Akindayomi (2015) investigated the use of the Customized Assessment Group Initiative (CAGI) small grouping technique on student ($n = 76$) performance in introductory accounting.[15] Students completed assignments in the following five stages: (1) two assignments individually; (2) two assignments using 15 conventional groups; (3) one assignment individually; (4) two assignments using 15 CAGI groups; and (5) one assignment individually. The dependent variable was the mean grade on each assignment. Using a Wilcoxon Signed-Ranks test, mean grades were significantly higher for stage 2 versus stage 1 scores and significantly higher for stage 4 versus stage 2 scores. Additionally, scores on individual assignments were significantly different: (1) stage 3 versus stage 1, and (2) stage 5 versus stage 3. The authors concluded that CAGI leads to improved performance over conventional team composition.

Ellis, Riley, and Shortridge (2015) described a teaching approach where students working on a group project in a graduate accounting course provide each other with performance and developmental feedback. Students (1) attended an instructional class session about types of feedback and effective feedback processes, and (2) provided fellow group members with performance and developmental feedback during and after the project was completed. Students were encouraged to focus their feedback on what fellow group members did well and on areas where they should attempt to improve. Survey responses collected over three semesters showed that students perceived the teaching strategy to be effective for preparing them to receive and use feedback in a professional setting. Additionally, instructors evaluated the quality of student performance on five dimensions before (after feedback session 1) and after (after feedback session 2) completion of the project. For all five dimensions, evaluations were significantly higher after completion of the project and feedback session 2. The authors provided tips for other faculty members who may want to use their approach while making less of a time commitment to developing students' ability to give and receive feedback.

Dunn and Hooks (2015) examined whether class time or term length is associated with student performance in a principles of accounting I course taught at one US private university for 6, 12, or 16 weeks and meeting either during the day or at night. Data were collected from students ($n = 1579$) enrolled in 11 course sections taught over five semesters. Course instructor, textbook, and content were all held constant. Results showed that students enrolled in a compressed term (6 or 12 weeks) significantly outperformed students enrolled in a 16-week term on a comprehensive final exam. Whether students took the course during the day or at night was not significantly associated with performance on the final examination. These results held after controlling for age, gender, and GPA. The authors concluded that offering courses in a compressed term or at night does not negatively affect student performance.

Dellaportas (2015) provided an essay about teaching accounting as purely a technical process using the positivistic neo-classical model of decision making. She advocated introducing cognitive dissonance as an explicit goal of the learning process as a way of encouraging students to challenge the underlying logic and thinking behind accounting. The author also described types of learning activities that may facilitate student learning.

[14] Novak and Gowin (1984).

[15] CAGI was developed by Katzenbach and Smith (1993).

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Table 9
Overview of articles about instruction by content area (Section 3).

	Reference	Type*	Topic
3.1.	*Ethics and professional responsibility*		
	Cameron and O'Leary (2015)	E	Ethical training for auditing students
	Larrán Jorge et al. (2015)	E	Type of ethics instruction at different types of institutions
3.2.	*Financial accounting (includes IFRS)*		
	Davis (2015)	D	Reviews statement of cash flows research and pedagogy
	Entwistle (2015)	D	Financial statement analysis
	Gallagher (2015)	D	Increase student engagement in advanced accounting
	Glover and Werner (2015)	D	Development of IFRS course at a US university
	McNellis (2015)	E	Statement of cash flows effective teaching strategies
	Phillips (2015)	E	Accounting majors earn higher grades in introductory financial accounting
	Ryack et al. (2015)	E	Comparison of US GAAP and IFRS teaching challenges
3.3.	*Managerial accounting*		
	Berg (2015)	D	Framework to teach enterprise governance
	Greenberg and Wilner (2015)	D	Concept map for managerial accounting course
	Zeigler (2015)	D	Simulation for undergraduate managerial accounting course

* Empirical (E) or descriptive (D) article.

3. Instruction by content area

An overview of the 12 articles on content area (five empirical, seven descriptive) appears in Table 9. The emphasis in 2015 was on ethics and financial responsibility, financial accounting (including IFRS), and managerial accounting. No articles appeared on AIS,[16] auditing, governmental or nonprofit accounting, or taxation during 2015. *Advances in Accounting Education* designated a special section on teaching the statement of cash flows (Volume 17); those three articles are referenced in Section 3.2.

3.1. Ethics and professional responsibility

Cameron and O'Leary (2015) implemented a pre- and post-test design to investigate the efficacy of ethical training for a cohort of final-year undergraduate auditing students (pre-test $n = 48$, post-test $n = 37$) at an Australian university. In the first week of class, students were asked to evaluate the ethical behavior of the accountant described in six vignettes: three present a *legal and moral* situation (includes an illegal act) and three are *moral* situations only (no obvious illegality). Student evaluation was on a five-point scale (1 = very unethical, 5 = very ethical). Five weeks into the semester and subsequent to coverage of ethical decision making in class, students were asked to re-evaluate the same six vignettes. Analysis of variance results revealed that students' ethical awareness of two of the three *legal and moral* situations showed significant increases after the ethical instruction. Evaluations of the three *moral* situations showed no significant increase. The authors concluded that the current approaches to teaching ethics may not influence moral attitudes of students as intended, and that prior work demonstrating the effectiveness of ethics training may be due to the use of strong legal implications imbedded in the evaluative instrument used.

Larrán Jorge, Andrades Peña, and Muriel de los Reyes (2015) examined web sites for global accounting and auditing masters' programs ($n = 188$) to determine whether ethics and corporate social responsibility standalone courses were associated with university size, university type as public or private, dean's gender, accreditation status, or cultural influence. Programs were classified into nine geographic regions (e.g., Western Europe, North America, Oceana, and Africa). Results of logistical regression analyses showed that offering standalone ethics or corporate social responsibility courses was partially explained by university size and cultural influence. Specifically, university size was significantly negatively associated with ethics and corporate social responsibility course offerings; national

[16] *AIS Educator Journal* publishes articles and cases on AIS not reviewed in the current paper (http://www.aisej.com/).

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business system was significantly positively associated with ethics and corporate social responsibility course offerings; and schools in North America were significantly more likely to offer these courses than were schools in other parts of the world. Whether a school was public or private, accreditation status, and dean's gender were not found to be significantly associated with standalone ethics and corporate social responsibility course offerings.

3.2. Financial accounting (includes IFRS)

Ryack, Mastilak, Hodgdon, and Allen (2015) explored the challenges of teaching GAAP and IFRS in two sections of the second intermediate financial accounting course at two private universities in the US. The primary research question dealt with the tendency for students to 'anchor' on GAAP bright-line rules when classifying leases under IFRS, particularly when the IFRS guidance is less prescriptive. To address a primacy effect, one course section at each university was first exposed to lease accounting under IFRS and then GAAP, and the other section of the course at each university covered GAAP first. Following the in-class coverage of both sets of standards, students in all four course sections ($n = 62$, 100% response rate) were asked to classify three leases (one under GAAP and two under IFRS). The ordering of the leases in the experimental task was randomized. Subsequent to completion of the task, students self-reported significant reliance (anchoring) on GAAP guidance when classifying under the IFRS rules. An analysis of differences-in-means indicated that the order in which GAAP and IFRS were presented was not significantly associated with the lease classification decision. However, results of a moderation analysis revealed that classification was significantly associated with the interaction between anchoring and teaching order. The authors recommended that instructors present IFRS prior to GAAP to offset the tendency for anchoring.

Glover and Werner (2015) described their experiences in developing a dedicated IFRS course at Drexel University. Alternative delivery options were presented and best practices were identified.

Phillips (2015) found that being an accounting major at one US institution was associated with significantly higher grades in introductory financial accounting ($n = 398$). The professor, textbook, teaching, and exam format were held constant over the five-year period of the study. GPA and mathematical competency were found to be significant predictors of the introductory accounting grade. Being a transfer student was not a significant predictor of introductory accounting grade, and students retaking the course received significantly lower grades than students who did not have to retake the course.

Entwistle (2015) reflected on his experiences teaching financial statement analysis and provided suggestions for contextualizing the topic to enhance teaching effectiveness. He identified the relative lack of regulatory structure in financial statement analysis in contrast to other accounting topics as a significant challenge in demonstrating its relevance. As an example, Entwistle observed the inability for financial statement analysis to qualitatively distinguish between certain, uncertain, and estimated amounts. He believed that the relevance of financial statement analysis is discovered when the analysis includes continual deconstruction and reconstruction of the financial information with an emphasis on articulation.

McNellis (2015) investigated the efficacy of alternative instructional approaches for delivering statement of cash flows (SCF) content across three semesters at a public US university. Efficacy was evaluated based on the students' ($n = 121$, 77.6% response rate) performance on a SCF task that was part of the final exam. The same instructor taught three consecutive semesters of Intermediate I. The CONTROL (first semester, $n = 52$) group received textbook-based instruction with no supplemental SCF content. The MASS (second semester, $n = 30$) and SPACED (third semester, $n = 39$) groups received textbook-based instruction as did the CONTROL, but these groups also received supplemental SCF content. Supplemental content was concentrated in the last two weeks of the course for the MASS group and spread throughout the semester for the SPACED group. The task also included basic material (e.g., changes in current assets and liabilities, depreciation, sale of common stock) and new material (e.g., changes in installment sales, net allowances, stock repurchases). Analysis of student performance on the SCF task found no significant difference between the CONTROL and MASS groups. Students in the SPACED group significantly outperformed both the CONTROL and MASS groups on the SCF task.

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Davis (2015) discussed the importance of the SCF in practice. Pedagogical research on the topic was briefly reviewed, and opportunities for expanded classroom coverage were discussed.[17]

Gallagher (2015) described an initiative to increase student engagement in an advanced accounting course at an Irish institution. Students were asked to provide suggestions on how to increase their involvement in the course, which included (1) the order of activities and (2) collaborative assignments during the class sessions. In the revised class sessions, theory was presented first with collaborative/group activities in the afternoon for students to apply and implement the theory. Students self-reported greater engagement and improved learning as a result of the revision.

3.3. Managerial accounting

Zeigler (2015) reported on the implementation of a vendor-provided simulation[18] in an undergraduate managerial accounting course at one US university. The simulation was intended to increase student engagement and improve student learning. The simulation required students to make decisions related to research and development, marketing, production, finance and accounting, human resources, and total quality management. Despite the simulation requiring a large commitment of instructor and student time, the author provided limited evidence that its use improves either engagement or learning. Student responses to a 13-question survey about engagement and learning were all less than four on a five-point scale. The instructor's comparison of his students' scores on a vendor-supplied exam to means provided by the vendor showed marginally better results for some questions.

Berg (2015) presented a framework for teaching enterprise governance. The framework identified four core aspects of enterprise governance: (1) looking up – corporate governance; (2) looking back – performance measurement; (3) looking ahead – management control; and (4) looking inside – management accounting. Students reported that assuming the mindset of a CFO and applying the enterprise governance framework enabled them to understand why certain processes and controls are implemented in organizations.

Greenberg and Wilner (2015) presented a hierarchal concept map framework for integrating concepts in a managerial or cost accounting course. They provided implementation guidance and include an example.

4. Educational technology

Articles summarized in this section focus on technologies used to support teaching and learning, both in traditional and online settings. Of the six articles (five empirical, one descriptive) published on educational technology, five are focused on course delivery choices and perceptions. Table 10 provides an overview of the educational technology articles.

4.1. Online course management systems

Jackson and Cossitt (2015) examined whether using online tutoring software could benefit intermediate accounting I students with a weak knowledge of introductory accounting. Data were collected from students over a ten-year period: the pre-adoption period of 2000–2003 ($n = 391$) and the post-adoption period of 2004–2010 ($n = 888$, where 672 students used online tutoring software and 216 students did not). Regression analysis results for post-adoption students showed that using online tutoring software was useful in mitigating the negative effects on intermediate accounting I performance of a long time period between taking introductory and intermediate accounting, taking introductory accounting at a two-year college, and having to repeat introductory accounting. Comparing data for pre-and post-adoption students showed similar results. The authors concluded that using online

[17] One of the articles classified as an instructional resource (Appendix A) presents a strategy to teach the statement of cash flows and free cash flow estimation when non-articulation is present (Frischmann, Pumphrey, & Santhanakrishnan, 2015).

[18] http://www.capsim.com/.

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Table 10
Overview of articles about educational technology (Section 4).

	Reference	Type*	Topic
4.1.	*Online course management systems*		
	Jackson and Cossitt (2015)	E	Online tutoring software for students with weak preparation
4.2.	*Course delivery*		
	Aldamen et al. (2015)	E	Recorded lectures to augment class
	Khanlarian and Singh (2015)	E	Web-based homework influence on homework and exams
	Kohlmeyer et al. (2015)	E	Employers prefer not to hire online accounting degree graduates
	Morris et al. (2015)	E	Comparison of online and traditional pedagogy in introductory financial accounting course
4.3.	*Technology-based assessment*		
	Menk and Malone (2015)	D	Create unique assignments with a 10-digit code

* Empirical (E) or descriptive (D) article.

tutoring software can be a useful review tool for intermediate accounting students, especially for those students with a weak knowledge of introductory accounting.

4.2. Course delivery

Kohlmeyer, Seese, and Sincich (2015) reported how accountants employed by nonpublic accounting organizations perceive the hiring of accounting graduates from face-to-face and fully online accounting degree programs. Accountants ($n = 67$) in the US from governmental, NFP, and nonmanufacturing organizations completed a survey on hiring preferences. In general, the results indicated a strong preference for hiring face-to-face accounting program graduates over graduates from online programs. This result held regardless of type of employing organization and whether graduates had passed the CPA examination. The main reasons for not hiring graduates of online accounting degree programs were (1) perceived inferior reputation and quality of such programs (referred to as diploma mills), (2) students not having interpersonal experiences while in school, and (3) concerns about academic rigor and cheating.

Khanlarian and Singh (2015) examined whether using web-based homework software affected students' perceptions of technology use and performance on quizzes and examinations. Online students ($n = 111$) and face-to-face students ($n = 257$) taking a principles of accounting course at a large public university in the Southeastern US were required to use publisher-provided, web-based software to complete homework assignments. Student responses to surveys administered three times during the semester and homework and exam grades from different points in the semester were used for analysis. Online and face-to-face students reported similar levels of frustration with the software. By the third survey, no significant differences between online and face-to-face students were found for frustration, usefulness, self-efficacy, and technical-efficacy. Some significant differences were reported for the first survey (e.g., face-to-face students significantly less in frustration and significantly more in usefulness). Overall, using the software was not associated with students' performance on homework and exams, although frustration with the software was associated with performance for lower-scoring online students.

Aldamen, Al-Esmail, and Hollindale (2015) investigated the effect of using recorded lectures on course performance and attendance for first-year students ($n = 254$, 100% response rate) enrolled in a financial accounting course at a university in Qatar. Using analysis of variance and regression, they found that after controlling for GPA, gender, and attendance, students' course performance was significantly positively associated with the number of times the recorded lectures were viewed. Students reported that the recorded lectures were a beneficial learning tool and increased their interest in the course.

Morris, Burnett, Skousen, and Akaaboune (2015) examined whether using a technology-based pedagogy affected student performance in an introductory financial accounting course. Students at a large public US university were assigned to either a control ($n = 118$ students) or test ($n = 64$ students) group.

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Students in the control group followed the traditional pedagogy, which focused on in-class lectures and problem solving. Students in the test group were required to use an online instructional platform with minimal in-class lectures. Three exams were given in the course, and the dependent variable in various regression models was change in exam performance (e.g., exam 2 compared to exam 1 performance; exam 3 compared to exam 1 performance). Using a technology-based pedagogy was significantly positively associated with long-term performance in the introductory financial accounting course; students in the test group showed greater exam score improvement during the semester than did students in the control group.

4.3. *Technology-based assessment*

Menk and Malone (2015) described an approach to preparing individualized assignments that involves using a 10-digit code unique to each student. Codes were created based on students' answers to a series of questions about their personal lives. Students then used their codes to create individualized assignments, including exams. The authors demonstrated the use of code-based assignments in a taxation course and provide supplementary materials for other faculty members who want to use this method of generating individualized assignments.

5. Students

A summary of the 19 articles (17 empirical, two descriptive) related to students appears in Table 11. Included are eight empirical articles related to academic major and career issues, six articles about student skills and characteristics (four empirical, two descriptive), and five empirical articles addressing student perspectives about approaches to learning and assessment. The topics cover a range of issues that inform faculty of considerations and perceptions that affect how students learn and prepare for successful careers. Students are studied in a variety of geographical contexts.

Table 11
Overview of articles about students (Section 5).

	Reference	Type*	Topic
5.1.	*Academic major and career issues*		
	Brody et al. (2015)	E	Analysis of gender equity issues in accounting
	de Lange et al. (2015)	E	Analysis of CPE practices in five countries
	Djatej et al. (2015)	E	Behavioral intentions to pursue accounting as a major
	Halabi (2015)	E	Differences in Australian CPE courses in rural and metropolitan areas
	Lento and Sayed (2015)	E	GPA and faculty intuition as predictors of certification exam pass rates
	Nouri and Miller (2015)	E	Association of AACSB status with CPA exam pass rates
	Wells (2015)	E	New Zealand high school student perceptions about accounting profession
	Wen et al. (2015)	E	Chinese student intent to pursue CPA
5.2.	*Student skills and characteristics*		
	Barac (2015)	D	Challenges to professional success in post-apartheid South Africa
	Chand et al. (2015)	E	Chinese and Australian academic performance comparison
	Daly et al. (2015)	E	Cultural diversity in class increases cultural learning and awareness
	Landry and Bernardi (2015)	E	Work and family orientation
	Luke (2015)	D	Faculty responsibility for classroom attendance
	Parry and Jackling (2015)	E	Culture fit in Australian accounting firms
5.3.	*Perspectives about and approaches to learning and assessment*		
	Dull et al. (2015)	E	Mastery and performance goals
	McDowall et al. (2015)	E	Vocational dimensions associated with learning approach
	Tan and Laswad (2015)	E	New Zealand accounting students analyzed by learning style
	Teixeira et al. (2015)	E	Motives for studying accounting in Portugal
	Wong et al. (2015)	E	Chinese student perceptions of learning in Australia

* Empirical (E) or descriptive (D) article.

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5.1. Academic major and career issues

Nouri and Miller (2015) investigated the association between AACSB accreditation status and computerized CPA exam pass rates from 2005 through 2008. Pass rate information for the CPA exam was obtained from NASBA. The number of schools analyzed ranges from 721 in 2005 to 829 in 2008. Differences in pass rates were examined for three accreditation conditions: (1) business only accreditation, (2) accounting accreditation, and (3) no AACSB accreditation. Regression results indicated that graduates from schools with accounting accreditation significantly outperformed graduates from business-only accredited schools on the CPA exam. Additionally, graduates from unaccredited schools significantly underperformed students from accredited schools.

Lento and Sayed (2015) investigated if faculty intuition about a student's ability[19] or GPA is a better indicator of a student's performance on professional certification exams. The first-trial pass rates of students from a Canadian university ($n = 38$) on three professional certification exams were studied. In addition to overall GPA, separate GPA variables were computed for topical clusters in financial accounting, auditing, managerial accounting, taxation, strategy, and accounting theory. Logistic regression results (pass = 1 or not pass = 0) indicated that overall GPA, topically clustered GPA, and faculty intuition were all significantly associated with professional certification exam pass rates. The GPA metrics were found to be superior in predictive ability.

Wen, Hao, and Bu (2015) surveyed undergraduate and graduate accounting students ($n = 288$, 100% response rate) at a Chinese university regarding their intent to pursue the CPA designation. In a logistic regression, perceived marketability of the certification, personal interest in the accounting profession, and influence of others in encouraging pursuit of the certification were positively associated with students' intent to seek certification. Two variables, attitude about autonomy in the work environment and difficulty in maintaining the certification, were negatively associated with intent. The model correctly classified 85.8% of the students' self-reported intent to pursue the CPA designation.

Halabi (2015) surveyed Australian accountants ($n = 156$, 40.4% response rate) regarding their satisfaction with face-to-face continuing professional education (CPE) being delivered in rural areas versus metropolitan areas. Respondents indicated the various ways that CPE was completed, with face-to-face being the most popular, although demand for online CPE is likely to increase. Seven survey questions dealt with participants' satisfaction regarding CPE offered in rural and metropolitan areas (e.g., relevance, quality, cost). Significant differences (Mann–Whitney test) were reported for only one of seven questions; participants' were significantly more satisfied with the cost of rural CPE.

de Lange, Jackling and Suwardy (2015) surveyed accounting practitioners in Australia, China, Hong Kong, Malaysia, and Singapore ($n = 1310$) regarding continuing professional development (CPD) practices. A differences-in-means analysis showed that satisfaction with the global CPD requirements was significantly lower for practitioners in emerging economies than for those in developed economies. The authors concluded that the current global CPD requirements are not meeting the expectations of emerging economy accounting practitioners and may require more varied forms of delivery.

Djatej, Chen, Eriksen, and Zhou (2015) surveyed 1207 students at three US universities to explore the association between behavioral measures and behavioral intentions to pursue studies in accounting. Five latent constructs (soft skills efficacy, technical skills efficacy, image of accounting professionals, social influence, and personal interest) and one measured outcome variable (intent to major in accounting) were identified. Results of a structural equation model showed that technical skills efficacy, image of the accounting profession, and social influence all significantly contribute to a personal interest in accounting. The soft skills efficacy path was not significant. Personal interest in accounting and social influence were significantly associated with intent to major in accounting and explained approximately 66% of the variability in that construct. The authors suggested that the career choice model they presented may help recruiters and educators attract students to the profession.

Wells (2015) used the Perceptions of the Accounting Profession Instrument (PAPI) developed by Saemann and Crooker (1999) to measure perceptions of New Zealand high school students about the

[19] Intuition was defined as faculty assessment of the student's potential for success on five metrics used in a professional accounting exam.

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accounting profession. The PAPI contains 36 pairs of adjectives (e.g., creative versus cut and dried) from which participants choose the preferred adjective for each pair. Two focus groups were conducted, one with students who had studied accounting (n = seven) and one with students who had not studied accounting (n = six). PAPI findings and the results of open-ended discussions are presented.

Brody, Cox, and Kern (2015) surveyed graduate and undergraduate students (n = 140, 100% response rate) at a US university regarding gender issues. Participants reported their disagreement (low score) or agreement (high score) with six statements on a seven-point scale: (1) accounting is a male-dominated profession, (2) in the field of accounting, women are likely to be judged less competent than their male counterparts, (3) having a family or family commitments will not affect my career success, (4) women in accounting can expect to have similar opportunities for promotions and raises as their male counterparts, (5) women in accounting can expect to have similar quality job assignments as their male peers, and (6) women in accounting can expect to have similar salaries as their male peers throughout their careers. A test for differences in means showed that females scored significantly higher than males on statement #2, and males scored significantly higher than females on statements #4, #5, and #6. No significant differences between males and females were found for questions #1 and #3.

5.2. Student skills and characteristics

Parry and Jackling (2015) investigated cultural fit of the recruitment practices of Australian accounting firms. The data are part of a larger project regarding how Australian professional service firms understand their needs for certain skills and their recruitment practices. From an original survey of 550 individuals within the firms, 64 agreed to participate in interviews. Of those, 16 (25%) were selected to participate in two interviews (phase 1, seven participants, three from small CPA firms and four mid-tier firms; phase 2, nine participants, four from mid-tier firms and five from Big 4 firms). The authors provided excerpted comments from the interviews. The authors reported that cultural fit did not seem to be an overt criterion in recruitment but that cultural fit was implicit in the recruitment process. Professional service firms preferred Australian-born graduates. Australian trained accountants from non-English backgrounds did not fare well in the recruitment process, primarily due to poor language skills.

Daly, Hoy, Hughes, Islam, and Mak (2015) investigated the use of multicultural groups on the attitudes of Australian accounting students. Second- and third-year accounting students in two units were in the intervention groups (n = 123, 57.7% response rate); students in two corresponding units (n = 69, 20.9% response rate) were the control groups. Students in the intervention groups formed 3–4 member teams, with the provision that no more than half of the team members could come from the same cultural background. Students responded to 12 questions related to increased cultural awareness.[20] Mean scores for the intervention group 1 were significantly higher (indicating more culturally aware) than were scores for the control group, while no significant difference in mean scores was found for the second intervention and control groups. The authors concluded that working in small, culturally diverse groups increases students' cultural learning and awareness.

Chand, Cheung, and Cummings (2015) examined whether student cultural origin was associated with final exam performance in an advanced undergraduate accounting course taught at an Australian university. The final exam included four different types of questions: recall-based and application-based theory questions and recall-based and application-based practical questions. Results showed that, overall, Australian students (n = 203) significantly outperformed Chinese students (n = 460) on the final exam. Analysis of exam scores by type of question showed that Australian students significantly outperformed Chinese students on theory-based questions, but that performance on practical questions was not significantly different between student groups. Differences in exam performance were also found between application-based questions and recall-based theory questions, but

[20] The 12 questions were from Mak et al. (2013).

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differences in performance between Australian and Chinese students were not found for recall-based practical questions. These results held after controlling for GPA.

Barac (2015) conducted semi-structured interviews with participants in the Thuthuka Program[21] in South Africa in an attempt to understand why the participants were unable to pass the second qualifying professional exam. Recommendations for increasing the success of this and similar programs included: (1) broader involvement of stakeholders, (2) holistic support of students' social and academic needs, (3) expanded opportunities for students and educators to accept social responsibility, and (4) exposing students to industry as part of their education.

Luke (2015) reflected on the importance of students' classroom attendance to ultimate course performance and described an intervention designed to reduce student absences. Students at an Australian university who had not attended in the first two weeks of class were contacted by the instructor. Of the 10 students contacted, three withdrew, three continued to miss class, and four began attending. Only one of the 10 contacted students ultimately passed the course. Luke suggested that students may not always be able to address the complex issues of ongoing performance and that more aggressive interventions may be necessary for some students.

Landry and Bernardi (2015) surveyed sophomore/junior business and nonbusiness students ($n = 283$) enrolled in an introductory accounting course at a US university to examine prevalent attitudes regarding achievement, work, and competition. The survey was designed to capture two primary constructs to compare Millennials with the prior generation: (1) work and family orientation, and (2) social desirability response bias. Two regression models, one including only business majors ($n = 235$) and the other using the full sample ($n = 283$), controlled for social desirability bias, GPA, and major. The authors concluded that Millennials expect higher grades and found lower satisfaction from hard work than did prior-generation students.

5.3. *Perspectives about and approaches to learning and assessment*

McDowall, Jackling, and Natoli (2015) surveyed Australian accounting students ($n = 917$, 66.5% response rate) at two universities to investigate the relationship between students' vocational interests and learning approaches. Students completed two survey instruments: (1) Biggs' Revised Study Process Questionnaire (R-SPQ-2F)[22] to assess approaches to learning (classified as deep learning or not deep learning) and (2) an instrument to assess vocational interests on six dimensions (realistic, investigative, artistic, social, enterprising, conventional). In a logistic regression model, learning approach was the dependent variable, the six vocational dimensions were independent variables, and control variables were gender, year of study, and international student status. Results showed that no control variable was significant, and only two vocational variables were significantly associated with learning approach: (1) investigative and (2) conventional.

Teixeira, Gomes, and Borges (2015) investigated the motives, expectations, and preparedness of students ($n = 253$, 100% response rate) in an introductory accounting course at five Portuguese universities. The participating students[23] completed the Motives, Expectations and Preparedness for Higher Education questionnaire introduced by Byrne and Flood (2005). The questionnaire captures eight factors: (1) independent learner, (2) academic confidence, (3) self-development, (4) career focus, (5) intellectual growth, (6) social opportunity, (7) skills confidence, and (8) social norm. Results of the differences-in-means analysis suggested that students entered into higher education with a focus on intellectual growth, career focus, and self-development. Additionally, accounting majors were less prepared for independent work than non-accounting business majors, and women felt more prepared for higher education than men.

[21] The Thuthuka Program is part of a broader effort intended to help black students close social gaps that persist in a post-apartheid South Africa.

[22] Biggs, Kember, and Leung (2001) described the R-SPQ-2F questionnaire.

[23] The sample consisted of accounting majors (23.41%), economics and management majors (45.24%), and other disciplines (31.35%).

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Wong, Cooper, and Dellaportas (2015) explored Chinese students' ($n = 26$, 54.2% response rate) perceptions regarding teaching quality in the Australian accounting program where they were enrolled. Semi-structured discussions were facilitated by the primary researcher for each of six focus groups (four-five students per group). Transcripts of the focus group discussions were coded using NVivo[24] software to identify themes. The findings indicated that the Chinese students' perceptions of ineffective teaching in a Western context may be tied to an inconsistency between the educational environment and the manner in which the material is delivered. The students' perceptions of the educational experience were very much dependent on their perception of how concerned the teacher appears to be about student success. Recommendations included requiring Chinese students to participate in seminars prior to the beginning of the semester to orient them to the educational environment, and to assign more socially oriented teachers to facilitate a positive teacher–content association.

Tan and Laswad (2015) investigated the association of learning styles with course performance of undergraduate business students ($n = 412$, 51.3% response rate) enrolled in a first-year accounting course at a New Zealand university. Learning styles were assessed using Kolb's Learning Style Inventory (LSI), which identifies four learning styles: (1) divergers (prefer to observe a situation from alternative points of view); (2) assimilators (focused on abstract concepts); (3) convergers (effective at finding the practical); and (4) accommodators (prefer 'hands-on' and intuition). Student performance was measured throughout the semester with four assessments using a combination of multiple choice and computational problems. Tabulated responses showed that business students were diverse across the four learning styles: assimilators (38%), convergers (23%), accommodators (20%), and divergers (19%). Regression and analysis of variance results indicated that learning style was significantly associated with differing performance on the assessments, with assimilators showing higher outcomes for some of the assessments.

Dull, Schleifer, and McMillan (2015) explored the association among mastery and performance goals and students' expectations, achievement, self-efficacy, and test anxiety. Students ($n = 521$, 100% response rate) enrolled in an introductory accounting course at a US university completed the Motivated Strategies for Learning Questionnaire (MSLQ).[25] A k-means cluster analysis based on mastery goal scores and performance goal scores from the MSLQ generated four clusters: (1) multiple goals (both mastery and performance centroids were positive); (2) master (mastery goal score exceeded the performance goal score); (3) performance (performance goal score exceeded the mastery goal score); and (4) low motivation (both centroids were negative). Analysis of covariance was used to test the cluster membership with expected course grade, self-efficacy, text anxiety, and grade earned on the first exam in the course being the covariates. Results showed expected course grade, self-efficacy, final exam grade, and course grade were significantly associated with cluster. Further, self-efficacy was significantly higher for the multiple goal clusters than other clusters; for the mastery cluster, self-efficacy, final exam grade, and course grade were significantly higher than the performance and low motivation clusters. No significant difference for text anxiety was found across the clusters. Overall, the combination of mastery and performance goals was significantly associated with improved course performance.

6. Faculty

Section 6 summarizes 16 articles (12 empirical; four descriptive) related to faculty and consists of three subsections: (1) research, (2) teaching, and (3) other faculty issues. An overview of the articles by topic is presented in Table 12. In 2015, the proportion of empirical articles (75.0%) increased as compared to prior reviews (60.0% in 2013–2014, 46.2% in 2010–2012). Nine articles (six empirical; three descriptive) relate to research and one article addressed teaching. Articles on other faculty issues (five empirical; one descriptive) consider job mobility, faculty recruitment in a competitive market, and faculty perceptions of the textbook revision cycle. One issue of *Accounting Education* (Volume 24, Issue 3) was devoted to the topic of journal rankings, and those five articles are summarized in Section 6.1.

[24] NVivo software is used for qualitative data analysis (http://www.qsrinternational.com/product).
[25] Refer to Pintrich, Smith, Garcia, and McKeachie (1993) and Duncan and McKeachie (2005).

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Table 12
Overview of articles about faculty (Section 6).

	Reference	Type*	Topic
6.1.	*Research*		
	Guffey (2015)	E	*GPAE* influential articles, authors, and institutions tabulated
	Hussain et al. (2015)	E	Comparison of internal and external journal lists
	McGuigan (2015)	D	Critique of managerial decisions based on journal lists
	Metcalf et al. (2015)	E	Citation-based accounting research
	Moore (2015)	E	Research quality and journal list adoption
	Moya et al. (2015)	E	Scholarship of Spanish accounting faculty
	Rebele and St. Pierre (2015)	D	Critical historical analysis of accounting education research
	Sangster (2015)	D	Institutional bullying that results from journal lists
	Sangster et al. (2015)	E	Analysis of citation patterns for accounting education articles
6.2.	*Teaching*		
	Wygal and Stout (2015)	E	Best practices from award-winning accounting educators
6.3.	*Other faculty issues*		
	Bitter and Henry (2015)	E	Separate AACSB accounting accreditation characteristics
	Boyle et al. (2015)	E	Faculty satisfaction with teaching assignments
	Fogarty and Black (2015)	E	Senior accounting faculty job mobility
	Hammond et al. (2015)	E	Textbook revisions and faculty perceptions
	Hunt and Jones (2015)	E	Accounting faculty recruitment issues
	Wygal (2015)	D	Academic and practitioner partnerships

* Empirical (E) or descriptive (D) article.

6.1. Research

Rebele and St. Pierre (2015) revisited the accounting education literature review articles published in *Journal of Accounting Education* from 1991 through 2015. Their analysis over time identified stagnation in accounting education research and a trend toward descriptive articles and cases and away from empirical work. From their vantage point as both authors of education research and prior editors of the *Journal of Accounting Education*,[26] Rebele and St. Pierre pointed out that the accounting education literature is not informing the professoriate on the common body of knowledge for accounting, how to best prepare students for careers, and the most effective integration of information technology. Rebele and St. Pierre also identified a growing gap between accounting education and practice. Recommendations for editors and identification of specific areas of research opportunities were provided.

Sangster, Fogarty, Stoner, and Marriott (2015) extended their prior work[27] by investigating the citation patterns for accounting education articles published in 2005 as reported in Google Scholar from 2006 through 2011 in six journals: (1) *Issues in Accounting Education*, (2) *Accounting Education*, (3) *Journal of Accounting Education*, (4) *Advances in Accounting Education*, (5) *Global Perspectives on Accounting Education*, and (6) *The Accounting Educators' Journal*. The summarization and tabulation of citations were analyzed in total and specifically for research-focused and teaching material-focused accounting education articles. They found that research-focused articles were cited three times more often than teaching material-focused papers. Articles published in *Issues in Accounting Education*, *Journal of Accounting Education*, and *Accounting Education* were more frequently cited than those published by the other journals; *Issues in Accounting Education* was most cited. A particularly interesting finding is that,

[26] E. Kent St. Pierre served as editor-in-chief of *Journal of Accounting Education* from 1983–1998, followed by James E. Rebele from 1998–2010.

[27] Marriott, Stoner, Fogarty, and Sangster (2014).

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with the exception of *Accounting Education*, the six journals included in the study had less than half of the total citations originating from journals specializing in accounting education. Differing citation patterns across geographic regions and the lack of consistent citations of extant literature may reflect a lack of awareness about what has been published, which may be having a negative influence on the usefulness and quality of published articles. Recommendations were provided for authors seeking to maximize the impact of their accounting education research.

Metcalf, Stocks, Summers, and Wood (2015) provided citation-based rankings for peer-reviewed accounting education scholarship published in the 1990–2013 time period. Data were from *Journal of Accounting Education*, *Issues in Accounting Education*, and 11 other high-quality general interest journals (e.g., *The Accounting Review, Journal of Management Accounting Research*).[28] Rankings were prepared for overall publications, which were further subdivided into cases and other publications (not case-based). Rankings were provided by institution and individual authors for the last six years, the last 12 years, and all years. The number of citations was also provided for the top 20 publications and top 20 cases. The article can be used to benchmark citations in accounting education scholarship.

Guffey (2015) used Google Scholar to identify the most influential articles, authors, and institutions published in *Global Perspectives on Accounting Education.* Citation count and citation rate (citations per year) were the primary measures used, although the analysis was also performed with these measures scaled based on the number of authors. In addition to identifying the top ten articles, authors, and institutions, the analysis showed that citation count favored older articles and citation rate favored recently published articles. Citation comparisons between *Global Perspectives on Accounting Education* and other accounting education journals were reported.

Sangster (2015) argued that the adoption and widespread use of journal rankings is dysfunctional for accounting faculty and accounting research. Sangster asserted that journal lists are promoted by academic managers (e.g., deans, presidents) as a quality proxy rather than the more time consuming and subjective approach of reading the published research to evaluate the research. He noted differences in various journal lists, and, therefore, divergent assessments of quality can result. Lists affect the rankings of specialty journals by typically assigning lower ratings than general-interest journals and undervaluing areas such as accounting education and accounting history. Sangster cautioned that because journal lists assign low rankings to accounting education journals, our universities and students will suffer if accounting faculties do not promote the scholarship of teaching and learning.

Moore (2015) discussed research quality and the adoption of journal lists by academic schools and departments. She also provided an in-depth discussion of the journal adoption process used by two accounting programs with regional teaching missions. Moore's discussion of the process of constructing journal lists and how they map into quality will be interesting to accounting faculty who either teach at institutions with journal lists or are considering adopting journal lists. She noted that the emphasis on using journal lists seems to be motivated by administrators. Moore's (2015, 268) perception was that "the journal list adoption processes were more heavily influenced by a search for symbolic markers of prestige than any well-thought-out mission-driven focus on solving a functional public interest problem related to poor-quality research."

Moya, Prior, and Rodríguez-Pérez (2015) discussed the changes in scholarship by Spanish accounting faculty after the 2001 Spanish University Act (*Ley Orgánica de Universidades)* (SUA), which regulates Spanish universities. The SUA used accreditation to raise the importance of academic versus professional research. Articles authored by Spanish accounting faculty from 1996–2005 were used to assess the effects of SUA. The authors constructed a database of Spanish accounting academics ($n = 403$) who had published at least one article included in a Spanish database, and then identified all articles published in both Spanish and non-Spanish journals ($n = 1245$ total articles). The percentages of academic and professional publications pre- and post-SUA were significantly different, with more academic publications post-2001 (e.g., 70%/30% in 2005 versus 45%/55% in 1996). Also, a significantly greater percentage of articles were published in non-Spanish journals after 2001. The percentage of empirical articles significantly increased post-2001, and the mix among type of papers significantly changed, moving away

[28] Some accounting education journals were excluded from the analysis (e.g., *Accounting Education* and *Global Perspectives in Accounting Education*).

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from theory and deductive articles to those classified as statistical or other. The authors concluded that the SUA affected accounting scholarship in Spain with increased academic orientation, more publications in non-Spanish journals, and greater use of empirical methods.

Hussain, Liu, Wang, and Zuo (2015) examined how Chinese accounting researchers use institutional journal lists versus rankings on other lists (e.g., Chartered Association of Business Schools *Academic Journal Guide*),[29] and whether the increasing use of in-house lists affects international collaborative research. Collaboration among international accounting researchers may be affected if they have pressures to present their work in journals valued differently by their faculties and administrators. The authors surveyed Chinese accounting academics who participated in an international research conference ($n = 54$, 27% response rate). Extensive detail was provided about respondents' attitudes toward and use of journal lists. For example, 90.7% of the Chinese academics indicated that their own school's journal list was the major factor in determining publication quality. Over 70% used their school's list to determine where to submit research for publication, choosing a higher-rated journal over a lower-rated niche, professional, or new journal. The authors concluded that the use of the in-house journal lists by Chinese academics raises concerns about constraints on international collaborative research.

McGuigan (2015) discussed the "publication maximization" culture in Australian accounting research and argued that accounting research has become a commodity. McGuigan describes the Australian government's process for measuring research quality across educational institutions, with weightings attached to journals. The Australian and New Zealand business schools created a journal quality list[30] in 2007 and revised it in 2013. McGuigan described his experience in requesting that a journal be reclassified from "B" to "A." A large number of top-quality journals are US based, which McGuigan believed acts against innovation. Much of McGuigan's discussion revolves around the consequences for academe, researchers, and institutions from using journal rankings as a basis for making a variety of decisions affecting faculty. Finally, McGuigan lamented the lack of acceptance of accounting education research and the negative consequences that can follow from publishing accounting education research.

6.2. Teaching

Wygal and Stout (2015) surveyed award-winning accounting educators about factors that distinguished them as effective teachers. Respondents from universities in the US ($n = 105$) provided a list of 453 factors related to teaching effectiveness. Content analysis of responses identified six major factors associated with perceived teaching effectiveness, ranked in order of importance: (1) class session learning environment, (2) student focus, (3) preparation and organization, (4) importance of the accounting practice environment, (5) passion, enthusiasm, and dedication, and (6) course learning environment. Perceived relative importance of the six categories was not found to be significantly associated with the number of teaching awards respondents had received, but significant associations with years of teaching experience, faculty rank, and gender were found. For example, full professors tended to give more importance to class session learning environment and course learning environment, while faculty at other ranks emphasized student focus and passion, enthusiasm, and dedication. Female faculty members placed more importance on passion, enthusiasm, and dedication than did male faculty members, who gave relatively more importance to preparation and organization.

6.3. Other faculty issues

Bitter and Henry (2015) surveyed accounting administrators at US institutions having AACSB business accreditation but not separate accounting accreditation. Respondents ($n = 103$, 34% response rate) used a five-point scale to answer 19 questions related to accounting accreditation. Tabulated results revealed common themes as to why some programs have not pursued separate accounting accreditation (e.g., lack of administrative support or faculty interest). Responses to seven questions were

[29] http://charteredabs.org/academic-journal-guide-2015/.

[30] The *ABDC Journal Quality List* is prepared and periodically updated by the Australian Business Deans Council (http://www.abdc.edu.au/pages/abdc-journal-quality-list-2013.html).

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significantly different for the 17 programs that planned to seek accounting accreditation in the next five years versus those that did not, including five questions related to positive benefits (e.g., administrators and faculty valuing accounting accreditation). Some significant differences in responses were also found for large accounting faculties versus small, public versus private institutions, and for schools with teaching versus research missions.

Fogarty and Black (2015) examined changes in mobility over the 1980–2012 period for senior faculty at US doctoral granting institutions ($n = 2719$) listed in the *Hasselback Accounting Directory* (2015). The proxy measure for mobility was the proportion of senior faculty taking a new position in the previous five years. A differences-in-means analysis revealed that the proportion of senior faculty changing jobs had fallen sharply over the period under examination, suggesting a reduction in mobility. One explanation offered was that the new faculty market pays high wages in anticipation of hiring someone who will produce more scholarship, but the senior faculty market may reflect the reality that the publication expectations exceed what a senior faculty member will likely produce. As a consequence, the job prospects of average senior faculty were limited, and they chose not to move. Additionally, the decline in senior faculty mobility over the period may also have reflected the increase in the average age of senior faculty.

Hunt and Jones (2015) surveyed chairs and heads of US accounting programs ($n = 247$, 29% response rate) in 2012 about their experience in hiring accounting faculty during the previous three years. Of the respondents, 210 schools reported attempts to hire. The data were analyzed on four dimensions: (1) 189 non-doctoral-granting and 21 doctoral-granting; (2) 118 public and 92 private; (3) 134 AACSB accredited and 76 not AACSB accredited; and (4) 116 primarily teaching oriented, 17 primarily research oriented, and 77 equally oriented. A large amount of descriptive data about how schools recruited faculty was presented, along with tests of differences between types of schools (e.g., doctoral versus non-doctoral schools; teaching versus research/balanced schools). As examples, doctoral schools were significantly more likely to place job ads on the AAA website, and the location of the school was significantly more important for non-doctoral schools seeking to recruit faculty.

Boyle, Carpenter, Hermanson, and Mero (2015) surveyed professionally oriented US accounting faculty ($n = 267$, 53 part-time faculty and 214 full-time faculty)[31] regarding their experiences and perceptions of their roles in accounting departments. Using five-point scale responses as the dependent variable, the regressions used several independent variables (e.g., administrative role, gender, professional certification, doctoral degree). Respondents were most satisfied with their teaching experiences and interactions with students. Extensive descriptive information was presented. The research is informative to those wishing to better understand the roles/perceptions of professionally oriented accounting faculty.

Hammond, Danko, and Braswell (2015) investigated accounting textbook revisions in the context of three factors; (1) revision rates, (2) faculty perceptions of revision rates, and (3) published reviews of revised editions. Textbook revision rates were assessed for 69 accounting textbooks with at least four editions with copyright dates between 1988 and 2016. A differences-in-means analysis demonstrated a significant decline in the mean revision time of 4.2 years in 1988 to 2.4 years in 2016. Perceptions of sub-discipline textbook revisions were collected through a survey of faculty ($n = 998$, response rate not reported). Differences-in-means and analysis of variance revealed that faculty generally favored less frequent revisions, but that higher frequencies were appropriate for rapidly changing sub-disciplines. Additionally, textbook authors perceived the need for more frequent revisions than did non-authors. An analysis of 65 textbook reviews published in *Issues in Accounting Education* from 2008–2013 revealed that 45 discussed improvements over the previous edition and about half included a discussion that focused on updated content. None of the reviews mentioned textbook price. The authors recommended that faculty implement a new creation and delivery system where the textbook material would be free of charge to students.

Wygal (2015) reported on his personal experiences with developing academic and academic-practitioner partnerships while he was accounting department chair at Rider University. An objective

[31] Full-time faculty included 123 non-tenure track and 91 tenure-track respondents.

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of the article was to demonstrate how local efforts at developing partnerships can help achieve the Pathways Commission's (2012) goal of furthering academic-practitioner partnering activities. Partnerships with accounting, college, and university faculty, as well as those between the accounting department and accounting practice community were described in the article. Specific topics included the creation of an accounting advisory council and a campus-wide initiative on faculty professional development, which was funded by a grant from the PEW Charitable Trusts. The author also provided his reflections on experiential partnering and the nature of community building.

7. Summary and suggestions for future scholarship

7.1. Summary

We tabulated the accounting education journal article output for 2015 and compared it to the output for 2013 and 2014 covered by the prior literature review (Apostolou, Dorminey, Hassell, & Rebele, 2015). The comparisons permit us to identify emerging shifts in the volume of accounting education publication activity.[32] During the one-year period covered by the current review, authors from institutions around the world contributed 97 published articles to the six journals evaluated, which is down 24.2% from the annual average of 128 articles for the two-year period 2013–2014. The same three journals consistently publish the most articles:

(1) *Accounting Education* published 32 articles in six issues during 2015 (33.0% of the total), lower than the average of 41 articles per year in the previous review.
(2) *Issues in Accounting Education* published 19 articles in four issues during 2015 (19.6% of the total), which is much lower than the average of 40.5 articles per year in the previous review.
(3) *Journal of Accounting Education* published 17 articles in four issues during 2015 (17.5% of the total), which is down from the average of 24 articles per year in the previous review.

Considered together, articles published in the other three journals reviewed increased output during 2015 (29 articles or 29.9% of the total), which is greater than the average production during 2013–2014 (22.5 articles or 17.6% of the total).

Analysis of the empirical and descriptive articles reveals some differences in subject area studied when compared to 2013–2014 (Apostolou et al., 2015). The number of articles published on faculty topics increased (16 in the current review as compared to an average of 12.5 articles annually in the prior review). Students received slightly more attention (19 in this review as compared to an average of 15 per year in the prior review). We observe a decline in the quantity of articles dealing with educational technology topics (six in the current review and an average of 9.5 per year in the previous two years). The topical area of curriculum and instruction also declined (from an average of 22 in the 2013–2014 review to 15 in the current). Instruction by content area is nearly half of that observed in the prior review (12 in the current review compared to an average of 22.5 per year in the prior review).

Appendix A presents a tabulation of the nine articles (9.3%) identified as instructional resources. These articles provide specific ways to facilitate learning, but they do not meet the definition of a case, which we define as a real or hypothetical situation requiring student analysis. We tabulate the instructional resources according to the best fit to content area or areas. The average number of instructional resource articles for 2013–2014 was 13.5 or 10.5% of the total articles.[33]

As discussed in the preface to Appendix B, the 20 published cases amount to 20.6% of the total number of articles published in the six journals reviewed for 2015 compared to 25.8% of total articles published for an average of 33 cases per year for the period 2013–2014. For faculty interested

[32] We are unable to make direct comparisons on the topics of curriculum and instruction or instruction by content because these articles were categorized differently after 2012. Additionally, a one-year window makes it difficult to identify trends due to the variation in acceptance and publication rates by journal.

[33] We are unable to compare to the recent five-year period because 2013 was the first year that we separately classified articles as instructional resources.

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in using published case materials, Meyer and Meyer (2014) describe an online searchable database by topical area for accounting cases, which currently includes cases published in *Issues in Accounting Education*, the *IMA Educational Case Journal*, and *Journal of Accounting Education*.

The remainder of Section 7 is organized as follows. Section 7.2 offers suggestions for future scholarship organized around the major sections of this article. Section 7.3 addresses the research rigor of the empirical articles included in this accounting education literature review. We identify research exemplars and offer suggestions regarding rigor.

7.2. Suggestions for future scholarship

Our suggestions for future scholarship are organized around the main sections of this accounting education literature review. We synthesize the trends in published articles, instructional resources, and cases to facilitate practical application of the published articles and to motivate research.[34]

7.2.1. Curriculum and instruction

Articles about curriculum and instruction are summarized in Section 2. We reviewed ten empirical and five descriptive articles on this topic. As summarized in Section 2.1, Spiceland et al. (2015) discuss a curriculum revision that incorporates accounting education research, integrated learning strategies, and a competency-based framework. Lawson et al. (2015) describe how to integrate many different core competencies in the accounting curriculum. Faculty engaged in curriculum revision should continue to share and empirically validate their efforts as we plan for the future of accounting education.

We repeat our observation from several prior reviews that insufficient research is conducted on the accreditation process or the best practices of documenting assurance of learning, especially in the presence of new AACSB standards. We are surprised that no articles were published in 2015 on accreditation or assurance of learning. A critical analysis and study of the accreditation process is essential if the objective of continuous improvement is to be achieved. Studies should be conducted to examine whether and how the accreditation process or standards improve student learning and career preparation.

The textbook-driven curriculum at most accounting programs has remained relatively unchanged for decades. Many programs still offer the same six core courses; two intermediate financial accounting classes, cost, tax, accounting information systems, and auditing. Research is needed on the most relevant and current common body of knowledge for educating today's accounting majors and future accounting professionals. How to introduce more flexibility (new courses offered on-demand, current courses modified in weeks and not years) in the accounting curriculum must be explored by those interested in the future of accounting education. Given the high cost of textbooks and the reality that today's students generally do not read the assigned textbook, ways to make the accounting curriculum less dependent on published texts need to be identified and studied.

7.2.2. Instruction by content area

Section 3 summarizes 12 articles (five empirical, seven descriptive) on instruction by content area (Table 9). The most attention was given to financial accounting topics, including IFRS, which has become less of a standalone topic than in prior reviews. No articles were published on the content areas of auditing, taxation, or GNP. Auditing and taxation are significant career paths for accounting majors, and designing and studying the best way to facilitate learning and career growth in these areas is essential. We suggest that research be conducted regarding best practices of specific content areas, which is especially important as the AICPA changes the CPA exam structure and content specification.[35]

[34] *The Routledge Companion to Accounting Education* (Wilson, 2014) consists of 30 chapters in seven sections that address a host of topics essential to understanding the current state of accounting education practice and research. Each chapter contains ideas and suggestions for future scholarship.

[35] Changes to the content and skill specifications for the CPA exam are effective January 1, 2017 (http://www.aicpa.org/BecomeACPA/CPAExam/ExaminationContent/ContentAndSkills/DownloadableDocuments/CSOs-SSOs-Effective-Jan-2017.pdf).

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7.2.3. Educational technology

Section 4 summarizes six articles (five empirical, one descriptive) on educational technology, which refers to the instructor's use of technology in course delivery (Table 10). We summarized one article on online tutoring systems, four on course-delivery platforms, and one on technology-based assessment. Accounting students have become technologically savvy, and faculty should continue to explore effective ways of integrating technology into accounting courses and the learning process. Mobile technology has not, to date, been explored as a research topic in accounting education. Research is needed to construct models of education that rely on updated modes of delivery, especially in the context of curricular innovation. The opportunities for rigorous research regarding how alternative media facilitate learning are wide-ranging.

Big Data is transforming accounting practice, providing many opportunities for faculty to research and update curriculum. The AAA[36] has assumed a leadership role with its first major conference in 2015 themed "Accounting IS Big Data (AiBD) Conference." Materials distributed at the conference are available to AAA members with an interest in exploring the important role of big data applications in the future of the profession. We include the topic in educational technology because teaching and learning the topic will require technology. However, the topic has far-reaching implications for the accounting curriculum and faculty preparation.

7.2.4. Students

Section 5 provides summaries of 17 empirical and two descriptive articles on students, including issues related to major and career choice, skills and characteristics, and perspectives about and approaches to learning and assessment. Students remain an important area of research, appropriately so. The articles exhibit a strong international flavor, representing students in Australia, China, New Zealand, Portugal, South Africa, and the US, with a strong emphasis on the importance of cultural differences in the accounting curriculum because the peer-to-peer and student-to-faculty interfaces may be different.

Vien (2015) reported about the AICPA's 2015 study of enrollment in accounting degree programs and noted that it is at a historical high, with most of the increase in master's degree programs. Research is needed to effectively prepare individuals for a competitive marketplace, with an emphasis on the core values and skills sought by recruiters. Given the declining numbers of traditional college students graduating from high schools, accounting programs will need to establish a competitive advantage to attract the professionals of the future. An innovative curriculum can be one component of an effective strategy to attract the best and brightest individuals to the profession. Faculty and administrators should research alternative ways to attract talented individuals to the profession.

The one article (Landry & Bernardi, 2015) published in 2015 that addressed Millennials found that these students felt more entitled to higher grades. Millennials are generally characterized as individuals born in the 1980s to the early 2000s, which means that the bubble will likely persist through undergraduate and graduate programs and career choices. Studies regarding how to match instructional approaches to the Millennials' learning styles and motivation levels may inform faculty struggling to adjust to differences from their own generation.

7.2.5. Faculty

We summarized 12 empirical and four descriptive articles about faculty research, teaching, and job-related matters. Articles that rank faculty, journals, and doctoral programs were common in 2015 and informative. *Accounting Education* dedicated a special issue[37] to journal lists, a topic of significant controversy in the international community. Sangster (2015) articulates the impact of journal lists on accounting research and the disincentive that journal lists create for faculty who might otherwise conduct high caliber accounting education research. Given that it is unlikely that journal lists will change much in the near future, research is necessary regarding the best ways for administrators to encourage faculty who want to conduct accounting education research and still meet an

[36] http://commons.aaahq.org/groups/cea5c9d7d1/summary.
[37] Volume 24, issue 4, 2015.

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institution's standards for scholarship. As a related matter, we repeat our prior recommendation about the need to explore the growing impact of predatory open access publishers who prey on faculty desperate to get a publication to please an administrator tallying articles as part of a summative evaluation (Apostolou et al., 2015). We emphasize the point by quoting Sangster (2015, 183):

> The inherent inability of any journal ranking list to be universally fair, equitable, and all-embracing is where most of the criticism of the concept of journal ranking lists is focused. The criticism is not going to go away, no matter how much managers and proponents of journal ranking lists may wish that it would, but neither is the discrimination and marginalisation, nor the bullying into submission that university management is invoking as a result of their blind broad-brush adherence to the rankings these lists provide.

Another faculty issue worthy of exploring is the relatively new use of benchmarking in promotion and tenure decisions. Brigham Young University[38] makes available benchmarking data for use in evaluation of faculty records by both external reviewers and internal committees. The data are presented according to top accounting and business journals, and may bias decisions against faculty members in specialty areas who publish in the high-quality journals of other disciplines. Benchmarking data may be helpful, but it may lead to yet unresolved controversies similar to those discussed with journal ranking lists.

One avenue of faculty research that has not been explored to date is the mix of academically and professionally qualified accounting faculty encouraged by accreditation bodies. Some specialty areas (i.e., AIS, taxation, governmental) might be better served with professionally qualified individuals who have significant expertise without the attendant pressure to publish in top-tier journals. However, research is required to gain an understanding of this important faculty issue. Boyle et al. (2015) explored issues related to part-time versus full-time faculty in the US. The mix of full-time faculty can include tenure-track, instructor/lecturer, clinical, teaching/practice specialists, and other types of appointments. Budget pressures at many schools have reduced the percentage of tenure-track faculty relative to all full-time faculty. Top doctoral programs are training new faculty to be proficient in economics, statistics, and research design without the former emphasis on professional credentials (e.g., certification and work experience). The impact of the changing qualifications of new faculty on the future of accounting education warrants examination, especially when considered against the landscape of institutional mission and budget pressure. We encourage research about best practices regarding doctoral program preparation and optimal faculty mix and skill set in the face of institutional budget pressures and accreditation standards.

7.2.6. Other educational issues

We reiterate and extend a recommendation from prior reviews that it is time to consider and empirically test alternative ways of measuring teaching effectiveness because the delivery platforms (e.g., online, hybrid, traditional) are evolving, while SET score metrics are remaining relatively unchanged. Journal editors should continue to encourage essays from exemplars and scholars who share experiences and ideas for the future of accounting education. An example in the current review is Wygal (2015) who offers reflections on his experiences as a department chair and lessons learned from the partnerships created with a variety of constituencies. This personal-account type of article from experienced faculty on research, teaching, and service issues should be encouraged as a service to the academy.

Accounting education research has tended to focus on a single class, institution, or geographic area. The frequency of multinational data collection increased in articles published in 2015, which is an encouraging development. The interaction of curriculum, technology, faculty incentives, and student motivation is complex and should continue to be studied in a holistic way that considers how diverse cultures, instructional approaches, and student perceptions about learning interrelate. The

[38] http://www.byuaccounting.net/tenure/benchmarking.php.

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globalization of the accounting profession demands that we continue to study and reflect upon the developing new paradigm.

7.3. Research rigor

As shown in Table 5, the majority of empirical accounting education articles published in 2015 were based on survey data (53.0%). Quasi-experiment (14.3%) and published source (14.3%) were the next most frequently used data collection methods. The remaining articles used data obtained from student course performance and interviews (16.4%) and only one (2.0%) implemented an experimental method. The most popular analysis approach (Table 6) continues to be regression (32.7%) with differences-in-means (30.6%) and summary or tabulation (26.5%) being used only slightly less often. The remaining articles (10.2%) employ analysis of variance or path analysis.

Rebele and St. Pierre (2015) observe a general lack of research rigor and a seemingly increased reliance on less rigorous analysis methods in the accounting education literature. In the context of their observations, we consider the data collection and analysis methods in the current review in contrast to the two reviews covering the previous five years (2010–2014). The average use of collection methods over the 2010–2014 period were survey (55.3%), quasi-experiment (16.8%), published source (11.1%), student performance (13.0%), interview (2.4%), and experimental (1.4%). Referring to Table 6, choice of analysis approach has shifted away from analysis of variance (4.1% from 13.9%) and tabulation (26.5% from 30.3%), with greater use of differences-in-means (30.6% from 23.1%) and regression (32.7% from 26.0%). Other analysis approaches have remained stable. When regression and analysis of variance methods are considered together, the current review represents a slight decline relative to the previous five years (36.8% from 39.9%). The corresponding increase is found in the use of differences-in-means. Our review of the data collection methods and analysis approaches over the last six years (2010–2015) suggests a nearly unchanged distribution of data sources, with an apparent stagnation, consistent with observations made by Rebele and St. Pierre (2015), who examined accounting education research over the prior three decades.

We continue to encourage more rigorous analysis and data collection methods of topics that inform accounting education. Our classrooms serve as our laboratory. To the extent that education is the treatment, testing the effectiveness of the treatment should consist of more than a perception study by the recipients of the treatment. We identify McNellis (2015) as an example of an experimental design in a classroom setting. Quasi-experimentation substantially captures the benefits of an experimental study, where a strict implementation of randomization, pre- and post-testing may not be feasible. Cameron and O'Leary (2015) is a nice example of a properly implemented pre- and post-test quasi-experimental design.

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Appendices

Appendix A: Instructional resources organized by content area

During 2015, the six journals covered by this literature review published 9 instructional resources, constituting 9.3% of the articles published, which is consistent with prior years. These articles provide guidance on how to implement teaching strategies (e.g., mini-cases, technical projects) or creative ways to teach concepts. We identify the 9 instructional resource articles[39] in alphabetical order by author, with an indication of the applicability of the resource by content area as enumerated below:

- AIS (1)
- Auditing and forensic accounting (1)
- Ethics and professional responsibility (1)
- Financial accounting other than IFRS (2)
- Managerial accounting (4)
- Taxation (1)

Reference (alpha by author)	Accounting information systems (AIS)	Auditing and forensic accounting	Ethics and professional responsibility	Financial accounting other than IFRS	Managerial accounting	Taxation
1. Brenner, V. C., Jeancola, M. M., & Watkins, A. L. (2015). Using mini-cases to develop AICPA core competencies. *Advances in Accounting Education*, *16*, 21–44.				X		
2. Devine, K., & O'Clock, P. (2015). The balanced scorecard and class success: A classroom exercise for developing awareness of the challenges to successful balanced scorecard implementation. *The Accounting Educators' Journal*, *25*, 95–107.					X	
3. Frischmann, P. J., Pumphrey, L. D., & Santhanakrishnan, M. (2015). Teaching the statement of cash flows and free cash flow estimation when nonarticulation is present. *Advances in Accounting Education*, *17*, 145–165.				X		
4. Keller, A. C. (2015). Service department cost allocations using the net services model and the MDTERM function in Excel. *Journal of Accounting Education*, *33*(3), 241–255.	X				X	
5. Lafond, C. A., & Wentzel, K. (2015). Cost accumulation in small businesses: Experiential learning project. *Advances in Accounting Education*, *16*, 45–63.					X	
6. Schwartz, S. T., Spires, E. E., & Young, R. A. (2015). A teaching note on the tax benefits of retirement savings. *Journal of Accounting Education*, *33*(2), 164–181.						X
7. Sheehan, N. T., & Schmidt, J. A. (2015). Preparing accounting students for ethical decision making: Developing individual codes of conduct based on personal values. *Journal of Accounting Education*, *33*(3), 183–197.			X			

(*continued on next page*)

[39] The sum of the allocation exceeds the number of articles because one has applicability to more than one content area.

Reference (alpha by author)	Accounting information systems (AIS)	Auditing and forensic accounting	Ethics and professional responsibility	Financial accounting other than IFRS	Managerial accounting	Taxation
8. Spires, E. E., & Ward, C. J. (2015). A classroom example of the deleterious effects of auditor predictability. *Journal of Accounting Education*, *33*(1), 36–49.		X				
9. Stout, D. E. (2015). Regression analysis: Instructional resource for cost/managerial accounting. *Accounting Education*, *24*(1), 57–73.					X	
Total*	1	1	1	2	4	1

* The grand total exceeds the number of instructional resources because one is allocated to more than one instructional content area.

Appendix B: Cases organized by content area

During 2015, the six journals covered by this literature review published 20 cases, constituting 20.6% of the articles published. The University of Notre Dame provides a searchable database that includes cases published in *Issues in Accounting Education*, the *IMA Educational Case Journal*, and the *Journal of Accounting Education*.[40] Meyer and Meyer (2014) describe the database innovation.

Consistent with prior years, most of the cases (75%) address auditing and financial accounting (including IFRS) topics. No cases were published on AIS in 2015. We identify the 20 cases[41] in alphabetical order by author, with an indication of the applicability of the resource by content area enumerated below:

- Auditing and forensic accounting (6)
- Corporate governance and regulation (4)
- Ethics and professional responsibility (1)
- Financial accounting other than IFRS (12)
- Government and nonprofit accounting (2)
- IFRS (4)
- Managerial accounting (2)
- Taxation (2)

The majority of the cases appeared in *Issues in Accounting Education* (70%) and *Journal of Accounting Education* (20%), consistent with prior similar literature reviews.

[40] http://www.cases.ndacct.com.

[41] The sum of the allocation exceeds the number of cases because some have applicability to more than one content area.

	Reference (alpha by author)	Auditing and forensic accounting	Corporate governance and regulation	Ethics and professional responsibility	Financial accounting other than IFRS	Government and nonprofit accounting	IFRS	Managerial accounting	Taxation
1.	Aldhizer III, G. R. (2015). Small firm audit partner hiring crisis: A role play for critical thinking and negotiation skills. *Issues in Accounting Education, 30*(4), 275–296.	X	X						
2.	Bouten, L., & Hoozée, S. (2015). Challenges in sustainability and integrated reporting. *Issues in Accounting Education, 30*(4), 373–381.		X					X	
3.	Bradbury, M. E. (2015). The warehouse capital management policy – Treatment of leases. *Journal of Accounting Education*, *33*(3), 228–240.				X		X		
4.	Churyk, N. T., Yu, S., Gross, G. M., & Stoettner, R. (2015). Johnson Manufacturing case study – bankruptcy. *Journal of Accounting Education*, *33*(4), 309–316.		X		X		X		
5.	Delaney, J., Coe, M., Coussens, J., & Reddington, M. (2015). The case of the frequent flyer fraudster. *Journal of Accounting Education*, *33*(3), 219–227.	X							
6.	Detzen, D., Genannt Wersborg, T. S., & Zülch, H. (2015). Bleak weather for Sun-Shine AG: A case study of impairment of assets. *Issues in Accounting Education*, *30*(2), 113–126.				X		X		
7.	Earley, C. E., Feng, N. C., & Kelly, P. T. (2015). The City of Providence, RI: A case examining the financial condition of a U.S. municipality. *Issues in Accounting Education*, *30*(2), 127–139.					X			
8.	Fay, R. G., & Montague, N. R. (2015). Witnessing your own cognitive bias: A compendium of classroom exercises. *Issues in Accounting Education*, *30*(1), 13–34.	X			X				
9.	Gujarathi, M. R. (2015). Diamond Foods, Inc.: Anatomy and motivations of earnings manipulation. *Issues in Accounting Education*, *30*(1), 47–69.	X			X				
10.	Guthrie, C. P., & Nicholls, C. M. (2015). The personal budget project: A practical introduction to financial literacy. *Journal of Accounting Education*, *33*(2), 138–163.				X				
11.	Hess, M. F., & Alexander, R. M. (2015). Brewing up controversy: A case exploring the ethics of corporate tax planning. *Issues in Accounting Education, 30*(4), 311–327.			X					X
12.	Jeffrey, C. G., & Perkins, J. D. (2015). Cisco Systems, Inc.: Minding the GAAP? *Issues in Accounting Education, 30*(4), 329–352.		X		X				
13.	Kohlbeck, M. J., & Smith, T. J. (2015). A gain by any other name: Accounting for a bargain purchase gain. *Issues in Accounting Education*, *30*(3), 233–248.				X				
14.	Krupp, S., & McCartney, M. W. (2015). Evaluating a fee structure for a not-for-profit community foundation: A case study on activity based costing. *The Accounting Educators' Journal*, *25*, 109–130.					X		X	

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	Reference (alpha by author)	Auditing and forensic accounting	Corporate governance and regulation	Ethics and professional responsibility	Financial accounting other than IFRS	Government and nonprofit accounting	IFRS	Managerial accounting	Taxation
15.	Kyj, L. S., & Romeo, G. C. (2015). Microsoft's foreign earnings: Tax strategy. *Issues in Accounting Education, 30*(4), 297–310.								X
16.	Marshall, L. L., & Cali, J. (2015). They protect us from computer fraud: Who protects us from them? SafeNet, Inc.: A case of fraudulent financial reporting. *Issues in Accounting Education, 30*(4), 353–372.	X							
17.	McNellis, C. J., Premuroso, R. F., & Houmes, R. E. (2015). Using the *Codification* to research a complex accounting issue: The case of goodwill impairment at Jackson Enterprises. *Issues in Accounting Education*, *30*(1), 35–46.				X				
18.	Nicholls, C. M., & Mastrolia, S. A. (2015). Second Chance Homeless Shelter: A fraud exercise for introductory and survey courses in accounting. *Advances in Accounting Education*, *17*, 1–24.	X			X				
19.	Phillips, F. (2015). Evaluating financial results at Graphic Apparel Corporation (GAC): The impact of accounting policies. *Issues in Accounting Education*, *30*(1), 1–12.				X				
20.	Pries, F., & Scott, S. (2015). Lakeview Hotel Investment Corp. *Issues in Accounting Education*, *30*(2), 105–112.				X		X		
	Total*	6	4	1	12	2	4	2	2

* The grand total exceeds the number of cases because some are allocated to more than one instructional content area.

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