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TEACHING & LEARNING

What Are the 100 Most Cited Articles in Business and Management Education Research, and What Do They Tell Us?

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Although business and management education research has made great strides over the last decade, concerns about the area's legitimacy and attraction of new scholars continue to require attention. One of the obstacles that may impede the area's progress is a lack of knowledge of the influential works that may be useful in determining the nature and magnitude of potential contributions. Using Harzing's Publish or Perish and a broad list of search terms related to business and management education, we generated an initial list of 100 highly cited articles published since 1970. Fifty-eight of the 100 articles were published in or after 2000. After noting the most highly cited articles, their journal outlets, and their influence patterns with other highly cited articles, we conclude the article with potential research questions regarding development of research streams, the relative influence of new journals, and efforts to attract and increase the influence of business education scholars. *Organization Management Journal*, 12: 154–175, 2015. doi: 10.1080/15416518.2015.1073135

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Recent developments in management education research have made the pursuit of this area of inquiry more legitimate and accessible to new scholars. The rise of new learning and education research journals over the last decade to complement long-standing outlets such as the *Journal of Education for Business* (JEB), *Management Learning* (ML), and the *Journal of Marketing Education* (JMktE) has substantially increased the number and variety of venues where scholars can publish their work (Whetten, 2008). With these new venues have come efforts to frame priorities in both topics and methods of this research area, and to identify outlets that should receive scholars' primary attention (Beatty & Leigh, 2010; Currie & Pandher, 2013; Rynes & Brown, 2011). In spite of these promising activities, concerns regarding the relative lack of dedicated scholars in business and management education research continue to persist (Arbaugh, 2011; Fukami, 2007; Schmidt-Wilk, 2007), thus suggesting that research area legitimacy remains a challenge for business and management education.

One obstacle to increasing the area's legitimacy is the extent to which scholars from outside the business and management education area can develop an understanding of it within a reasonable amount of time for productive conversations and consequent research effort. This is a challenge because formal doctoral training for business and management scholars typically is focused on issues in each respective disciplinary field (e.g., accounting, finance, management, marketing, strategy, international business, etc.), and rightly so, but rarely with any exposure to business and management education research area issues. As a result, most aspiring scholars have to acquire knowledge about business and management education area issues "on the job" in the midst of other competing job requirements. This knowledge may come through trial and error of one's own literature searches, and perhaps through article submission reviews that indicated the need to consider certain foundational works in this area. The time requirements to develop an understanding of the business and management education research area outside of formal training may prove too onerous for many prospective new authors, especially junior scholars who have to develop a body of work for tenure and promotion during a short time period.

Worse yet, without an awareness of prior works that have shaped and continue to shape this emerging area, there is the risk of continually reinventing ideas that already have some existing findings, or even perpetuating inaccurate descriptions of prior research, thereby potentially delegitimizing the area (Bedeian, 2004a; Fornaciari & Lund Dean, 2009). This state of affairs

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explains in part why the volume, theoretical advancement, and empirical rigor in business educational research appear to vary across various business disciplines (Apostolou, Dorminey, Hassell, & Watson, 2013; Arbaugh et al., 2009). If these varying activity levels continue, it is unlikely that educational research in business schools will become fully legitimized as an acceptable research area for business faculty. Conversely, if there is an awareness and understanding of the works that have shaped the area, prospective authors would have a better way to define and articulate their ideas and to position them in the appropriate research space. Given the recently revised Association to Advance Collegiate Schools of Business (AACSB) International accreditation standards regarding the need for business schools to demonstrate the impact and engagement of their faculty (Standards 4 and 15), for which citation counts are provided as one example of scholarly impact, it is not unreasonable to expect increasing emphasis on citations that we have seen in disciplinary research also to influence business education research in the future (Apostolou, Hassell, Rebele, & Watson, 2010, 2013; Gray, Peltier, & Schibrowsky, 2012; Judge, Cable, Colbert, & Rynes, 2007). Therefore, citation as a measure of impact within the scholarly community is not likely to diminish in the near future (Aguinis, Shapiro, Antonacopoulou, & Cummings, 2014; Judge et al., 2007). This suggests that new scholars in business schools will increasingly be socialized on citation as a performance metric. Given this evolving direction toward citation counts, despite critiques of citation measures (Arbaugh, DeArmond, & Rau, 2013; Haley, 2014; Judge et al., 2007; Mingers & Xu, 2010; Radicchi, Fortunato, & Castellano, 2008), we believe citations as one among a range of possible research impact measures can be a mechanism that the business education field can use in portraying the field to business disciplinary faculty who have long accepted citation measures in examining research impact across business disciplinary research. We need to qualify this position by acknowledging that citation count as an impact measure is primarily aimed at research scholars who use this metric to identify research works that could help build their research agenda, rather than for determination of student learning outcomes. It is important to recognize this difference so that the need to address impact of student learning outcome is not confused with the need to determine impact of research that develop theoretical foundations and test business educational models—the work of researchers. Considering this research need, efforts to identify highly cited articles in the business education area seem a worthwhile first step toward increasing researchers' interest in the business education field.

With the intent of helping future scholars find their way in business and management education research, we uncover the most influential works in this area as reflected by citation counts of articles. In the sections that follow, we discuss our search and selection protocols, identify articles that are most influential to date, use citation patterns among these highly cited articles to infer research streams, and draw other initial observations from this list of articles and where it may portend future directions of the field. The first section of the article describes characteristics of legitimacy, and extends these ideas to business and management education research. The second section describes the development of our search protocol and terminology, along with the criteria for article inclusion. The third section identifies 100 highly cited articles, provides brief descriptions of the top 10 articles to help readers get a flavor of these works, and then examines patterns of cross-citation among these articles and the other 90 in the listing to identify groupings that indicate the presence and development of research streams. The final section provides observations, with particular emphasis on journals that emerge from the listing, and points to grounds for optimism and potential causes for concern.

LEGITIMACY IN BUSINESS AND MANAGEMENT EDUCATION RESEARCH

The importance of acceptability of a research idea is perhaps intuitively appealing, and with no need for explanation to many in the research community. However, there still needs to be a basic understanding of the underlying foundation and process by which acceptability comes into being and how this process is related to legitimacy variables in the eyes of the research community and possibly other research communities. Some researchers, especially those with sociology roots, have long accepted knowledge development to be a social construction process; that is, knowledge is not clearly objective in nature, but often is a result of iterative interactions in definitions and redefinitions among parties before arriving at a shared reality of what is considered acceptable knowledge (Harteis, Gruber, & Hertramph, 2010; Jelavic, 2011). Within the management knowledge arena, this implies that management knowledge and its contextual areas are developed from a process of collaborative definition, likely with iterative knowledge definition and empirical analysis of data to test those definitions (Colquitt & Zapata-Phelan, 2007; Lindkvist, 2005). This social construction approach is not unfamiliar to researchers today, especially those who are trained in the Western philosophy of dialectical interactions in shaping a knowledge area (Aram & Salipante, 2003; Bedeian, 2004b). Although social construction may happen in live interactive processes among individuals, the more formal process of such social construction of knowledge in the academic community is in the peer review process of academic journals where researchers perform this knowledge-shaping work through an iterative redefinition process (Humphreys, 2002; Starbuck, 2003).

Within the peer review process, authors of knowledge works produce their ideas and argue for acceptance of their ideas to a certain audience. The initial audience is likely to be reviewers and editors who participate in the shaping process. This process will produce counter points and ideas that often challenge elements of original ideas, which leads to further shaping of these ideas (Bedeian, 2004b). The iterative shaping process,

commonly known as peer review, could lead to either a rejection of initial ideas or eventual acceptance of reshaped ideas. Most academic journals have varying forms of a peer review process, with many well-known journals having peer review procedures clearly spelled out for authors who may want to submit their works to this shaping requirement (Rynes & Brown, 2011).

Although the peer review process can be interpreted as a shaping process for initial ideas, an eventual acceptance of an idea by reviewers and editors of a journal is, in fact, a form of legitimization of the idea, at least among immediate shaping members of the community, and, later on, as others in the community begin to cite the idea in building their own works. This formal process of shaping and accepting ideas and, later on, citing these ideas in other works is the typical legitimization process in academic research and publications (Aguinis, Shapiro, Antonacopoulou, & Cummings, 2014; Arbaugh, 2008; Deephouse & Carter, 2005). Such acceptance will imply that the propounded idea is deemed to be compatible with the thinking of the community, and thus acceptable to be shared among members of the community and the general public. With this acceptance, the social constructionist cycle is completed by having these ideas published as articles that become part of the foundation upon which future researchers in the area could further develop their works. Therefore, our effort to identify works that are particularly well cited will be helpful to future scholars who are seeking to build their work using research that has been well vetted by the broader scholarly community.

This process of idea legitimization in academic communities is well understood by researchers who grapple with differing ideas for acceptance among peers. According to Rynes and Brown (2011), four variables influence legitimization of ideas in management learning and education research, especially in education journal outlets: structural legitimacy (presenting adequate signals and symbols of competence), leadership legitimacy (publication records of scholars), procedural legitimacy (embracing scholarly accepted practices for performing activities), and consequential legitimacy (assessing the value of journals through citations of their articles). Each of these legitimacy variables is believed to have varying degrees of influence on the extent to which an article is deemed acceptable to the management learning and education research community. As in legitimacy considerations at the article level, journals also could exhibit legitimacy indicators, such as adopting peer review practices, having well-known editorial board members, and publishing clearly articulated and refined ideas (Rynes & Brown, 2011). Thus, although articles could have embedded legitimization indicators, journals also could have such indicators. Therefore, there is the possibility that articles and journals could have mutually influencing legitimizing impact.

The mutual legitimacy influence between article and journal is an intriguing idea. Indeed, studies of citation patterns in management research suggest that journal status could be a greater predictor of article citation than an article's merits or authors' attributes (Judge et al., 2007; Mingers & Xu, 2010). Whether or not this is a good evolved outcome from the iterative idea shaping process is something to be debated in the academic community. The reality is that we know journal legitimacy status has an influence on idea legitimacy in an article, and should be acknowledged and examined for its continuing influencing role in moving research ideas and into greater acceptability within the research community.

Researchers in the business and management education area have begun to examine variables that could explain legitimacy claims of business and management research streams (Beatty & Leigh, 2010; Rynes & Brown, 2011). These early studies on research legitimacy in business and management education often have used some forms of citation or citation-related indexes (see Rynes & Brown, 2011) as indicators of acceptability of a research article, and then worked backward to explore other variables that could help explain or be related to these acceptability indicators (Beatty & Leigh, 2010; Judge et al., 2007; Rynes & Brown, 2011). In addition to serving as an acceptability indicator and a way to attract new scholars, we believe citations and related indexes could serve another useful function. If we explore published articles along a chosen citation approach, such as total number of citations of an article, we also can uncover groupings of highly cited articles that could have similar topical interests, and therefore point to unique themes and issues for direction within emerging research streams.

In the context of this study, we use journal article citations as a proxy of article acceptance, and then examine the extent to which emerging articles could be related to each other by their focus or issues of interest, thus uncovering preliminary research streams within the business and management education research area. In addition, as discussed earlier, journals contribute legitimacy influence and, accordingly, also could have some relationship to highly cited works in each cluster. Therefore, we include in our examination the degree to which highly cited works may have relationships with journal outlets.

In summary, the basis for this exploratory approach is the degree to which highly cited works may exhibit varying themes and issues that could be related to each other in clusters of research issues/interests within the business and management education research area, while taking into consideration the role of journal status in influencing and developing these emerging clusters (Judge et al., 2007; Rynes & Brown, 2011), Therefore, our guiding research questions are:

1. What are the most cited articles in business and management education research?
2. Are there categories of research interest areas in the business and management education literature that could be uncovered from related topical issues of highly cited articles?
3. To what extent are these articles related to the journals in which they are published?

REVIEW PROTOCOL

Because business and management education research is at a comparatively early stage of development and the pool of potential outlets for such research is both diverse and fragmented (Currie & Pandher, 2013; Kruck, Mathieu, & Mitri, 2013; Rynes & Brown, 2011), we examined journal articles based on raw citation counts (Hodge, Lacasse, & Benson, 2011; Ramos-Rodríguez & Ruíz-Navarro, 2004). We chose this approach because raw citation counts of articles have been shown to be a leading predictor of future changes in perceptions of a field and are strongly correlated with other measures of citation (Baird & Oppenheim, 1994; Halverson, Graham, Spring, & Drysdale, 2012; Mudambi, Hannigan, & Kline, 2012; Tahai & Meyer, 1999). Also, citation measures are likely to become more important in driving scholarly activity, as they help scholars discriminate highly accepted research articles and their related ideas from the proliferation of research knowledge due to digital access of academic journals (Judge et al., 2007; Peng & Zhu, 2012). Citation counts of articles also have another important benefit—helping administrators determine the relative influence of their faculty's work when making promotion/tenure decisions (Bergh, Perry, & Hanke, 2006; Macdonald & Kam, 2010; Ramos-Rodríguez & Ruíz-Navarro, 2004; Worrell, 2009). Therefore, citation count is an important measure to consider acceptability of ideas in an article, whether from within the research community or from institutional bodies that support members of the community.

When developing a review search process, the reliability and validity of the approach are critical (Webster & Watson, 2002). We sought to establish reliability in this study by modeling frameworks used in search approaches of highly cited articles from other disciplines and prior reviews of business education literature. Our approach in identifying articles was similar to those recently adopted by Hodge and colleagues (2011) and Halverson and colleagues (2012) in determining the most impactful articles within the social work and blended learning areas, respectively. Their protocols identified the most impactful articles by selecting a citation database and key search terms, screening search results for their relevance to the intended domain, generating a listing of highly cited works, and accounting for the "citation bias" toward older articles. We also grounded the terminology used in our search to those used in prior reviews of business and management education research (Arbaugh, 2014; Hrastinski, 2008).

We sought validity for our protocol by searching broadly through a range of journals in the field (Brocke et al., 2009; Hrastinski, 2008; Webster & Watson, 2002), rather than limiting the search to a specific set of journals (Apostolou et al., 2013; Cummins, Peltier, Erffmeyer, & Whalen, 2013). For our search process, we defined the boundaries of business and management education as formal business and management education learning in the context of higher education in academic institutions (Arbaugh et al., 2013; Armstrong & Fukami, 2009; Beatty & Leigh, 2010; Rynes & Brown, 2011). We sought reliability in our search terms by using an approach that is similar to those of other recent literature reviews in business education. We started the search term selection by identifying common business disciplines, and combined them with "education"—a practice that is consistent with recent literature reviews in the education area (Arbaugh, Desai, Rau, & Sridhar, 2010; Cummins et al., 2013). We also took into consideration business disciplines that have at least one learning and education journal by reflecting such a term in the search (Currie & Pandher, 2013; Urbancic, 2011). To further enhance reliability by framing terms based upon input from subject matter experts in the area, we used Whetten's (2008) listing (further developed by Currie & Pandher, 2013) of business education journals to identify areas of education within disciplines that had generated enough interest to warrant their own journal (e.g., "human resources education" to reflect the *Journal of Human Resources Education*). Currie and Pandher's (2013) listing was validated further by the survey of a sample of active scholars in the area of business education.

To further capture pedagogy/andrologogy approaches in business education, we created search terms to reflect the "teaching" and "pedagogy" of these subject areas. We also incorporated terms to capture instructional strategies commonly used across the business disciplines, such as experiential learning (Boyce, Williams, Kelly, & Yee, 2001; Gray et al., 2012; Kayes, 2002; McCarthy & McCarthy, 2006), group activities (Brooks & Ammons, 2003; Feichtner & Davis, 1984), and student teams (Bacon, Stewart, & Silver, 1999; Baldwin, Bedell, & Johnson, 1997; Kayes, Kayes, & Kolb, 2005). Because these instructional approaches also are used outside of business schools, we framed the search terms for these educational practices to require at least one of the prominent disciplinary labels within a business school (accounting, economics, finance, information systems, management, marketing). Finally, we included several degree program-level terms for the most popular business degrees (undergraduate and MBA). We provide our list of search terms in Table 1.

We adopted the increasingly common practice of assessing the influence of educational research via Harzing's Publish or Perish (2013) software program to identify the most cited articles containing our search terms (Halverson et al., 2012; Hodge et al., 2011; Rao, Iyengar, & Goldsby, 2013; Serenko & Bontis, 2009; Van Aalst, 2010). Publish or Perish compiles citation counts from Google Scholar and generates metrics for journals and authors based upon citation activity, thereby making it easier for scholars to conduct studies using data from Google Scholar (Haley, 2014; Soutar & Murphy, 2009). There have been concerns about the use of Google Scholar for bibliometric studies, such as Google's vagueness in describing their sources for material beyond mention of sources such as academic publishers, professional societies, and university publishers (Google Scholar, 2015), or the tool's difficulties in producing consistent searches when using search term qualifiers (Cothran, 2011; Haley, 2014). However, it does provide advantages, particularly for studying the influence of educational research.

TABLE 1
Terms used in the literature search

Accounting education
Accounting ethics education
Business analytics education
Business ethics education
Business education
Business schools
Business students
Critical management education
Economic(s) education
Entrepreneurship education
Executive education
Executive MBA
Experiential learning (business, management, marketing, accounting, finance, economics, or information systems)
Finance education
Financial ethics education
Financial literacy education
Group projects (business, management, marketing, accounting, finance, economics, or information systems)
Group work (business, management, marketing, accounting, finance, economics, or information systems)
Hospitality and tourism education
Human resources education
Information systems education
Insurance education
International business education
Leadership education
MBA courses
MBA education
MBA program(s)
MBA students
Management education
Marketing education
Marketing ethics education
Operations management education
Organizational behavior education
Pedagogy (business, management, marketing, accounting, finance, economics, or information systems)
Public affairs education
Real estate education
Sales education
Strategic management education
Strategy education
Student teams (business, management, marketing, accounting, finance, economics, or information systems)
Sustainability education
Tax education
Undergraduate business courses
Undergraduate business students
Wealth management education
Teaching accounting
Teaching business
Teaching business analytics
Teaching business ethics
Teaching economics
Teaching entrepreneurship
Teaching evidence-based management
Teaching executives
Teaching finance
Teaching financial ethics
Teaching financial literacy
Teaching information systems
Teaching international business
Teaching human resources
Teaching leadership
Teaching management
Teaching marketing
Teaching MBAs
Teaching operations management
Teaching organizational behavio(u)r
Teaching strategic management
Teaching supply chain
Teaching sustainability
Teaching undergraduate business students

Google Scholar draws more comprehensive searches through open access journals and online repositories, provides characterizations of scholarly impact of articles similar to those provided by more restrictive databases such as Scopus or SSCI that focus on journals listed by a particular publisher or rating service, and has been found to be more informative for assessing educational and non-English-language research (Adler & Harzing, 2009; Cothran, 2011; Rynes & Brown, 2011; Van Aalst, 2010). Although much of the research to date on Google Scholar focuses on its use as a bibliometric tool, the keyword-based orientation and its ability to identify highly cited articles from keywords are making it an increasingly popular tool for younger scholars to identify articles for their research activities (Cothran, 2011; Howland, Wright, Boughan, & Roberts, 2009; Karlsson, 2014; Wu & Chen, 2014). We individually inspected each reference to ensure that the cited works focused on educational issues and/or educational practices within business schools, and eliminated articles that were oriented toward research in a business discipline that mentioned a search term in a peripheral way (such as Hambrick and Mason's [1984] work

on upper echelons theory that mentioned "management education"), examined management education topics in contexts other than business schools (such as Hytti and O'Gorman's [2004] study of enterprise education that primarily considered K–12 and trade-school settings), employed samples of business students for noneducational topics (such as Elliot and colleagues' [2007] examination of MBA students as a proxy for nonprofessional investors), or were from other disciplines that happened to use these terms (such as Bodenheimer and colleagues' [2002] discussion of management education on patient self-management of chronic diseases in primary care). Although "economics education" is one of our search terms, the majority of economics departments in universities are housed outside of business schools (Pieper, 2003). Therefore, for our listing, we included only economics education articles that pertained to business school settings. In keeping with journals used in recent domain reviews of management education journals (Beatty & Leigh, 2010; Korpiaho, Päiviö, & Räsänen, 2007; Rynes & Brown, 2011), we used the year of the earliest journal included in those reviews, now known as *Management Learning* (created in 1970), to frame the period of our review. As we reviewed articles generated from our search terms, we compiled a listing of the 100 most cited articles to reflect citation studies in other disciplines (Hodge et al., 2011; Lefaivre, Shadgan, & O'Brien, 2011; Walter & Ribière, 2013).

RESULTS

Table 2 presents the listing of full references to articles from our search process, the number of raw citations for each article, and the average number of citations per year. In case of ties between articles in raw citation counts, the article with the highest number of citations per year was placed higher in the listing. To capture interrelationships among articles and identify potential literature streams, Table 3 presents the results of a cross-reference analysis of the first 10 articles with the other articles in the listing. Initial observations from these tables provide several noteworthy findings. First, 58 of the 100 most cited articles have been published in or after 2000, indicating that interest in business and management education research is relatively new compared to research in other business disciplinary areas, such as organizational behavior, strategy, and human resources management. This finding suggests that concerns regarding citation bias toward older articles in bibliometric studies of other fields (Fornaciari & Lund Dean, 2009; Mudambi et al., 2012) may not apply to business and management education research. Second, although the field is relatively new, the cross-referencing analysis shown in Table 3 suggests an emerging pattern of mutual influence among these top 10 most highly cited articles. This points to potential development of research streams in areas such as (a) critiques (usually negative) of business schools and their practices, as demonstrated by the articles with linkages to Ghoshal (2005), Bennis and O'Toole (2005), and Pfeffer and Fong (2002); (b2) online delivery of business education, as demonstrated by numerous citations to and cross-citation among Alavi (1994), Piccoli and colleagues (2001), and Leidner and Jarvenpaa (1995); (c) entrepreneurship education, as demonstrated by citation patterns for Kuratko (2005) and Katz (2003), and to a lesser extent by Zhao and colleagues (2005); and (d) a less extensive stream on experiential learning emanating from the work of Kolb and Kolb (2005) (see the appendix for summaries of these 10 articles).

Influential Journals

Table 4 presents article distribution by journal. *Academy of Management Learning and Education* (AMLE) published the most articles (17) included in the listing, followed by the *Journal of Business Ethics* (JBE) (8 articles). Interestingly, three of the four journals with the most cited articles (AMLE, JBE, and the *Journal of Management Education* [JME]) are also three of the top four journals listed in Currie and Pandher's (2013) survey of active scholars in management learning and education research.

Domain Specification Issues

Although there appears to be consistency between the upper tiers of Currie and Pander's (2013) journal quality ratings and numbers of articles from those journals in our list, this consistency diminishes after we move beyond the highest rated journals. Twenty-six of the 45 journals represented in our most cited articles were not included in Currie and Pander's listing. This means that 45% of the most cited articles in business and management education appeared in journals that were considered outside the domain by relatively active scholars in the field. Although some of these articles are relatively early publications before the widespread introduction of journals dedicated to business education topics, the presence of well-regarded educational journals such as *Computers & Education* (C&E) and the *Journal of Educational Research* (JER) suggest the possibility that the journal domain of business education research could be broader than is portrayed in other studies.

DISCUSSION

Our identification and analysis of the 100 most cited articles in business and management education revealed three prominent research streams and one less prominent stream based on citation relationships to the 10 most cited articles. Collectively, these citation patterns of relationships that directly involved 50 of the 100 articles suggested the presence of relatively well-defined streams. When we looked at the average citation rate per year (a process used to assess "trending" topics), we did not see any article that might be classified outside of these first three streams until Navarro's (2008, 31.57 average citations a year, 27th in ranking on average citations per year, 90th in ranking on total citations) work on MBA curricula, indicating that the influence of these streams permeates throughout the list

TABLE 2
100 Most cited articles in business and management education, 1970–2014

Article reference	Total citations	Citations per year
Ghoshal, S. (2005). Bad management theories are destroying good management practices. *Academy of Management Learning and Education, 4*, 75–91. (Appeared in AMLE's Exemplary Contributions section)	2385	238.50
Kolb, A. Y., & Kolb, D. A. (2005). Learning styles and learning spaces: Enhancing experiential learning in higher education. *Academy of Management Learning and Education, 4*, 93–212. (Appeared in AMLE's Exemplary Contributions section)	1596	159.60
Bennis, W. G., & O'Toole, J. (2005). How business schools lost their way. *Harvard Business Review, 83*(5), 96–104.	1529	152.90
Pfeffer, J., & Fong, C. T. (2002). The end of business schools? Less success than meets the eye. *Academy of Management Learning & Education, 1*, 78–95. (Appeared in AMLE's Exemplary Contributions section)	1347	103.62
Alavi, M. (1994). Computer-mediated collaborative learning: An empirical evaluation. *MIS Quarterly, 18*, 159–174.	1204	57.33
Piccoli, G., Ahmad, R., & Ives, B. (2001). Web-based virtual learning environments: A research framework and a preliminary assessment of effectiveness in basic IT skills training. *MIS Quarterly, 25*, 401–426.	1077	76.93
Leidner, D. E., & Jarvenpaa, S. L. (1995). The use of information technology to enhance management school education: A theoretical view. *MIS Quarterly, 19*, 265–291.*	1031	51.55
Kuratko, D. F. (2005). The emergence of entrepreneurship education: Development, trends, and challenges. *Entrepreneurship Theory and Practice, 29*, 577–597. (Published as an ET&P White paper)	889	88.90
Zhao, H., Seibert, S. E., & Hills, G. E. (2005). The mediating role of self-efficacy in the development of entrepreneurial intentions. *Journal of Applied Psychology, 90*, 1265–1272.	784	78.40
Katz, J. A. (2003). The chronology and intellectual trajectory of American entrepreneurship education: 1876–1999. *Journal of Business Venturing, 18*, 283–300.	760	63.33
Williams, J. B., & Jacobs, J. (2004). Exploring the use of blogs as learning spaces in the higher education sector. *Australasian Journal of Educational Technology, 20*(2), 232–247.	734	66.73
Webster, J., & Hackley, P. (1997). Teaching effectiveness in technology-mediated distance learning. *Academy of Management Journal, 40*, 1282–1309.*	698	38.78
Gorman, G., Hanlon, D., & King, W. (1997). Some research perspectives on entrepreneurship education, enterprise education, and education for small business management: A ten-year literature review. *International Small Business Journal, 15*(3), 56–77.	697	38.72
Rindova, V. P., Williamson, I. O., Petkova, A. P., & Sever, J. M. (2005). Being good or being known: An empirical examination of the dimensions, antecedents, and consequences of organizational reputation. *Academy of Management Journal, 48*, 1033–1049.	623	62.30
Alavi, M., & Leidner, D. E. (2001). Research commentary: Technology-mediated learning—A call for greater depth and breadth of research. *Information Systems Research, 12*, 1–10.*	589	42.07
Gibb, A. A. (1993). Enterprise culture and education: Understanding enterprise education and its links with small business, entrepreneurship and wider educational goals. *International Small Business Journal, 11*(3), 11–34.	547	24.86
Volery, T., & Lord, D. (2000). Critical success factors in online education. *International Journal of Educational Management, 14*, 216–223.	529	35.20

(Continued)

TABLE 2
(Continued)

Article reference	Total citations	Citations per year
Alavi, M., Wheeler, B. C., & Valacich, J. S. (1995). Using IT to re-engineer business education: An exploratory investigation of collaborative telelearning. *MIS Quarterly, 19*, 293–312.*	507	25.35
Vesper, K. H., & Gartner, W. B. (1997). Measuring progress in entrepreneurship education. *Journal of Business Venturing, 12*, 403–421.	483	26.83
Arbaugh, J. B. (2000a). Virtual classroom characteristics and student satisfaction in Internet-based MBA courses. *Journal of Management Education, 24*, 32–54.*	451	30.07
Baldwin, T. T., Bedell, M. D., & Johnson, J. L. (1997). The social fabric of a team-based M.B.A. program: Network effects on student satisfaction and performance. *Academy of Management Journal, 40*, 1369–1397.*	443	24.61
Keys, B., & Wolfe, J. (1990). The role of management games and simulations in education and research. *Journal of Management, 16*, 307–336.	439	17.56
Lage, M. J., Platt, G. J., & Tegalia, M. (2000). Inverting the classroom: A gateway to creating an inclusive learning environment. *Journal of Economic Education, 31*(1), 30–43.	437	29.13
Fiet, J. O. (2001a). The theoretical side of teaching entrepreneurship. *Journal of Business Venturing, 16*, 1–24.	411	29.36
Solomon, G. T., Duffy, S., & Tarabishy, A. (2002). The state of entrepreneurship education in the United States: A nationwide survey and analysis. *International Journal of Entrepreneurship Education, 1*, 65–86.	407	31.31
Kirby, D. A. (2004). Entrepreneurship education: Can business schools meet the challenge? *Education & Training, 46*, 510–519.	405	36.82
Fiet, J. O. (2001b). The pedagogical side of entrepreneurship theory. *Journal of Business Venturing, 16*, 101–117.	398	28.43
Honig, B. (2004). Entrepreneurship education: Toward a model of contingency-based business planning. *Academy of Management Learning and Education, 3*, 258–273.*	392	35.64
Chen, H., & Volpe, R. P. (1998). An analysis of personal financial literacy among college students. *Financial Services Review, 7*(2), 107–128.	388	22.82
Pfeffer, J., & Fong, C. T. (2004). The business school 'business': Some lessons from the U. S. experience. *Journal of Management Studies, 41*, 1501–1520.	384	34.91
Van Raaij, E. M., & Schepers, J. J. L. (2008). The acceptance and use of a virtual learning environment in China. *Computers & Education, 50*, 838–852.	378	54.00
Kayes, D. C. (2002). Experiential learning and its critics: Preserving the role of experience in management learning and education. *Academy of Management Learning and Education, 1,* 137–149.	376	28.92
Arbaugh, J. B. (2001). How instructor immediacy behaviors affect student satisfaction and learning in Web-based courses. *Business Communication Quarterly, 64*(4), 42–54.	375	26.79
Alavi, M., Yoo, Y., & Vogel, D. R. (1997). Using information technology to add value to management education. *Academy of Management Journal, 40*, 1310–1333.*	372	20.67
McCabe, D. L., Butterfield, K. D., & Trevino, L. K. (2006). Academic dishonesty in graduate business programs: Prevalence, causes, and proposed action. *Academy of Management Learning & Education, 5*, 294–305.*	360	36.00
Mintzberg, H., & Gosling, J. (2002). Educating managers across borders. *Academy of Management Learning and Education, 1*, 64–76.	350	26.92
Aviv, R., Erlich, Z., Ravid, G., & Geva, A. (2003). Network analysis of knowledge construction in asynchronous learning networks. *Journal of Asynchronous Learning Networks, 7*(3), 1–23.	341	28.42
Reynolds, M. (1998). Reflection and critical reflection in management learning. *Management Learning, 29*, 183–200.	341	20.06

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TABLE 2
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Article reference	Total citations	Citations per year
Pittaway, L., & Cope, J. (2007). Entrepreneurship education: A systematic review of the evidence. *International Small Business Journal, 25*, 479–510.	336	42.00
McMullan, W. E., & Long, W. A. (1987). Entrepreneurship education in the nineties. *Journal of Business Venturing, 2*, 261–275.	335	11.96
Henry, C., Hill, F., & Leitch, C. (2005). Entrepreneurship education and training: Can entrepreneurship be taught? Part I. *Education & Training, 47*(2), 98–111.	327	32.70
Boyatzis, R. E., Stubbs, E. C., & Taylor, S. N. (2002). Learning cognitive and emotional intelligence competencies through graduate management education. *Academy of Management Learning and Education, 1*, 150–162.	326	25.80
Matten, D., & Moon, J. (2004). Corporate social responsibility education in Europe. *Journal of Business Ethics, 54*, 323–337.	320	29.09
Borkowski, S. C., & Ugras, Y. J. (1998). Business students and ethics: A meta-analysis. *Journal of Business Ethics, 17*, 1117–1127.	314	18.47
Ebner, M., Lienhardt, C., Rohs, M., & Meyer, I. (2010). Microblogs in higher education—A chance to facilitate informal and process-oriented learning? *Computers & Education, 55*, 92–100.	303	60.06
Faria, A. J. (1998). Business simulation games: Current usage levels—an update. *Simulation & Gaming, 29*, 295–308.	303	17.82
Stacey, E. (1999). Collaborative learning in an online environment. *Journal of Distance Education, 14*(2). Retrieved from http://www.jofde.ca/index.php/jde/article/view/154/379	299	17.59
Gibb, A. A. (1987). Enterprise culture—Its meaning and implications for education and training. *Journal of European Industrial Training, 11*(2), 2–38.	298	10.64
Cunliffe, A. L. (2002). Reflexive dialogical practice in management learning. *Management Learning, 33*, 35–61.	296	22.77
Feichtner, S. B., & Davis, E. A. (1984). Why some groups fail: A survey of students' experiences with learning groups. *Organizational Behavior Teaching Review, 9*(4), 58–73.	294	9.48
Oldfield, B. M., & Baron, S. (2000). Student perceptions of service quality in a UK university business and management faculty. *Quality Assurance in Education, 8*(2), 85–95.	292	19.47
DeTienne, D. R., & Chandler, G. N. (2004). Opportunity identification and its role in the entrepreneurial classroom: A pedagogical approach and empirical test. *Academy of Management Learning and Education, 3*, 242–257.*	289	26.27
Gartner, W. B., & Vesper, K. H. (1994). Experiments in entrepreneurship education: Successes and failures. *Journal of Business Venturing, 9*, 179–187.	288	13.71
Cunliffe, A. L. (2004). On becoming a critically reflexive practitioner. *Journal of Management Education, 28*, 407–426.	287	26.09
Dunne, D., & Martin, R. (2006). Design thinking and how it will change management education: An interview and discussion. *Academy of Management Learning and Education, 5*, 512–523.	282	31.33
Kolvereid, L., & Moen, O. (1997). Entrepreneurship among business graduates: Does a major in entrepreneurship make a difference? *Journal of European Industrial Training, 21*(4), 154–160.	276	15.33
Leidner, D. E., & Jarvenpaa, S. L. (1993). The information age confronts education: Case studies on electronic classrooms. *Information Systems Research, 4*, 24–54.	275	12.50
Arbaugh, J. B. (2000b). Virtual classroom versus physical classroom: An exploratory comparison of class discussion patterns and student learning in an asynchronous internet-based MBA course. *Journal of Management Education, 24*, 207–227.	274	18.27

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TABLE 2
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Article reference	Total citations	Citations per year
Jack, S. L., & Anderson, A. R. (1999). Entrepreneurship education within the enterprise culture: Producing reflective practitioners. *International Journal of Entrepreneurial Behaviour and Research, 5*(3), 110–125.	271	16.94
Oosterbeek, H., van Praag, M., & Ijsselstein, A. (2010). The impact of entrepreneurship education on entrepreneurship skills and motivation. *European Economic Review, 54*, 442–454.	267	53.4
Hawk, T. F., & Shah, A. J. (2007). Using learning style instruments to enhance student learning. *Decision Sciences Journal of Innovative Education, 5*, 1–19.	267	33.38
Eom, S. B., Wen, H. J., & Ashill, N. (2006). The determinants of students' perceived learning outcomes and satisfaction in university online education: An empirical investigation. *Decision Sciences Journal of Innovative Education, 4*, 215–235.	266	29.56
Wolff, S. B., Pescosolido, A. T., & Druskat, V. U. (2002). Emotional intelligence as the basis of leadership emergence in self-managing teams. *The Leadership Quarterly, 13*, 505–522.	266	20.46
Martins, L. L., & Kellermanns, F. W. (2004). A model of business school students' acceptance of a Web-based course management system. *Academy of Management Learning and Education, 3*, 7–26.	265	24.09
Arbaugh, J. B., & Duray, R. (2002). Technological and structural characteristics, student learning and satisfaction with Web-based courses: An exploratory study of two MBA programs. *Management Learning, 33*, 231–247.	265	20.38
Hills, G. E. (1988). Variations in university entrepreneurship education: An empirical study of an evolving field. *Journal of Business Venturing, 3*(2), 109–122.	264	9.78
Nonis, S., & Swift, C. O. (2001). An examination of the relationship between academic dishonesty and workplace dishonesty: A multicampus investigation. *Journal of Education for Business, 77*(2), 69–77.	261	18.64
Arlow, P. (1991). Personal characteristics in college students' evaluations of business ethics and corporate social responsibility. *Journal of Business Ethics, 10*, 63–69.	260	10.83
Trieschmann, J. S., Dennis, A. R., Northcraft, G. B., & Nieme, A. W. Jr. (2000). Serving constituencies in business schools: MBA program versus research performance. *Academy of Management Journal, 43*, 1130–1141.	257	17.13
Eskew, R. K., & Faley, R. H. (1988). Some determinants of student performance in the first college-level financial accounting course. *Accounting Review, 63*(1), 137–147.	255	9.38
Grey, C. (2004). Reinventing business schools: The contribution of critical management education. *Academy of Management Learning and Education, 2*, 178–186. (Appeared in AMLE's Exemplary Contributions section)	253	23.00
Gault, J., Redington, J., & Schlager, T. (2000). Undergraduate business internships and career success: Are they related? *Journal of Marketing Education, 22*, 45–53.	252	16.80
Lu, J., Yu, C-S., & Liu, C. (2003). Learning style, learning patterns, and learning performance in a WebCT-based MIS course. *Information & Management, 40*, 497–507.	247	20.58
Friga, P. N., Bettis, R. A., & Sullivan, R. S. (2003). Changes in graduate management education and new business school strategies for the 21st century. *Academy of Management Learning and Education, 2*, 233–249.	246	20.50
Sims, R. L. (1993). The relationship between academic dishonesty and unethical business practices. *Journal of Education for Business, 68*, 207–211.	246	11.18
Adler, N. J. (2006). The arts & leadership: Now that we can do anything, what will we do? *Academy of Management Learning and Education, 5*, 486–499.	243	27.00
Arbaugh, J. B. (2000c). How classroom environment and student engagement affect learning in Internet-based MBA courses. *Business Communication Quarterly, 63*(4), 9–26.	242	16.13

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TABLE 2
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Article reference	Total citations	Citations per year
Raelin, J. (2007). Toward an epistemology of practice. *Academy of Management Learning and Education, 6*, 495–519. (Appeared in AMLE's Exemplary Contributions section)	236	29.50
Reynolds, M. (1997). Learning styles: A critique. *Management Learning, 28*, 115–133.	234	13.00
Armstrong, M. B. (1987). Moral development and accounting education. *Journal of Accounting Education, 5*, 27–43.	234	8.36
Davis, J. R., & Welton, R. E. (1991). Professional ethics: Business students' perceptions. *Journal of Business Ethics, 10*, 451–463.	229	9.54
De Vita, G. (2001). Learning styles, culture and inclusive instruction in the multicultural classroom: A business and management perspective. *Innovations in Education and Teaching International, 38*(2), 165–174.	226	15.07
Christensen, L. J., Peirce, E., Hartman, L. P., Hoffman, W. M., & Carrier, J. (2007). Ethics, CSR, and sustainability education in the *Financial Times* top 50 global business schools: Baseline data and future research directions. *Journal of Business Ethics, 73,* 347–368.	224	28.00
Cohen, J. R., Pant, L. W., & Sharp, D. J. (2001). An examination of differences in ethical decision-making between Canadian business students and accounting professionals. *Journal of Business Ethics, 30*, 319–336.	224	16.00
Holman, D., Pavlica, K., & Thorpe, R. (1997). Rethinking Kolb's theory of experiential learning in management education: The contribution of social constructionism and activity theory. *Management Learning, 28*, 135–148.	224	12.44
Ladd, P. D., & Ruby, R. Jr. (1999). Learning style and adjustment issues of international students. *Journal of Education for Business, 74*(6), 363–367.	223	13.94
Lysonski, S., & Gaidis, W. (1991). A cross-cultural comparison of the ethics of business students. *Journal of Business Ethics, 10*, 141–150.	223	9.29
Behrman, J. N., & Levin, R. I. (1984). Are business schools doing their job? *Harvard Business Review, 62*(1), 140–147.	223	7.19
Yamazaki, Y., & Kayes, D. C. (2004). An experiential approach to cross-cultural learning: A review and integration of competencies for successful expatriate adaptation. *Academy of Management Learning and Education, 3*, 362–379.	222	20.18
Argyris, C. (1980). Some limitations of the case method: Experiences in a management development program. *Academy of Management Review, 5*, 291–298.	222	6.34
Navarro, P. (2008). The MBA core curricula of top-ranked U.S. business schools: A study in failure? *Academy of Management Learning and Education, 7*, 108–123.	221	31.57
Drennan, J., Kennedy, J., & Pisarski, A. (2005). Factors affecting student attitudes toward online learning in management education. *Journal of Educational Research, 98*, 331–338	221	22.10
Shaub, M. K. (1994). An analysis of the association of traditional demographic variables with the moral reasoning of auditing students and auditors. *Journal of Accounting Education, 12*(1), 1–26.	221	11.05
Bacon, D. R., Stewart, K. A., & Silver, W. S. (1999). Lessons from the best and worst student team experiences: How a teacher can make the difference. *Journal of Management Education, 23*, 467–488.	220	13.75
Gatfield, T. (1999). Examining student satisfaction with group projects and peer assessment. *Assessment & Evaluation in Higher Education, 24*, 365–377.	218	13.63
Johannisson, B. (1991). University training for entrepreneurship: Swedish approaches. *Entrepreneurship and Regional Development, 3*(1), 67–82.	218	9.08

(Continued)

TABLE 2
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Article reference	Total citations	Citations per year
Cohen, J., & Hanno, D. M. (1993). An analysis of underlying constructs affecting the choice of accounting as a major. *Issues in Accounting Education, 8*, 219–238.	217	9.86
Whipple, T. W., & Swords, D. F. (1992). Business ethics judgments: A cross-cultural comparison. *Journal of Business Ethics, 11*, 671–678.	216	9.39
Ashenhurst, R. L. (1972). Curriculum recommendations for professional programs in information systems. *Communications of the ACM, 15*(5), 363–398.	215	5.00
Ives, B., & Jarvenpaa, S. L. (1996). Will the Internet revolutionize business education and research? Sloan Management Review, 37(3), 33–41.	214	11.26
Cheit, E. F. (1985). Business schools and their critics. *California Management Review, 27*(3), 43–62.	214	7.13

Note. Sources: Harzing's Publish or Perish and Google Scholar, 3.19–20.15.
*Appeared in a special/inaugural issue for the journal.

(and even then, the approach and tone of that article reflect the critiques of the business school stream).

We also found this collection of top 10 articles to be housed in highly recognized business education journals, such as the *Academy of Management Learning and Education*. However, there also were other journals as the articles move down the ranking, thus pointing to a broader set of journals than may be expected by active business education scholars (Currie & Pandher, 2013). In the paragraphs that follow, we elaborate further on possible interpretations of these findings.

Emergent Research Streams

The first stream anchored in the most highly cited articles pertains to issues regarding critiques of business schools (Ghoshal 2005—first position; Bennis & O'Toole—third position; Pfeffer and Fong, 2002—fourth position). This group of articles calls attention to the importance of maintaining curriculum relevance and better preparing business students for employing organizations. Articles cited by them or that cited them address topics such as reframed MBA curricula (Friga et al., 2003; Minztberg & Gosling, 2002) and incorporation of emerging perspectives in business education, such as design (Dunne & Martin, 2006), the arts (Adler, 2006), and critical approaches (Grey, 2004). Three of the top 10 articles appear in AMLE (the other was in *Harvard Business Review*), which shows the importance of that journal for communicating issues pertaining to the future directions of business schools, thereby making it a primary vehicle for communicating general business and management education research issues that have implications for research and business communities (Currie & Pandher, 2013).

A second stream emerging from the top 10 list included works by Alavi (1994; fifth position), Piccoli et al. (2001; sixth position), and Leidner and Jarvenpaa (1995; seventh position). These articles explored the role of information technology and its potential to meet different distance education/online learning needs in management education. Each article appeared in *MIS Quarterly* (MISQ), which suggests the importance of high-profile journals as a mechanism for accelerating the development of a research stream. This stream had the highest level of connection with the other 90 highly cited articles, as 15 other articles either cited or were being cited by these works.

Three other top 10 articles, Kuratko (2005; eighth position), Zhao and colleagues (2005; ninth position, and Katz (2003; 10th position), examined the history, development, and potential for entrepreneurship education and research in the field. Although these articles ranked highly as educational research pieces, it is noteworthy that, as was the case with the articles on online learning, none were published in journals expressly dedicated to educational issues. This composition suggests that entrepreneurship education research may have developed its base within entrepreneurship journals, from which it is branching out to mainstream business and management education research journals.

The article by Kolb and Kolb (2005; second position) is the only experiential learning article that appeared in the top 10 listing. This article reflects the continuing importance of experiential education research in the management education literature. Although this article draws upon previously published pieces and is cited by later articles in the top 100, it may be surprising to some that this stream did not carry greater influence in the listing because Kolb's (1984) experiential learning framework was written about and used in business education well before the start of the study of online delivery of business education. Experiential learning is a common research topic, not only in management education but also in marketing (Gray et al., 2012), accounting (Apostolou et al., 2013), information systems (Lee, 2012), and economics education (Dolan & Stevens, 2006). We discuss this point later in the article as a topic for future research.

TABLE 3
Cross-reference citation listing of the 10 most cited articles

Author(s)	Articles cited	Article cited by
Ghoshal (2005)	3	3
	Pfeffer and Fong (2002)	Pfeffer and Fong (2004)
	Mintzberg and Gosling (2002)	McCabe, Butterfield, and Trevino (2006)
	Friga, Bettis, and Sullivan (2003)	Dunne and Martin (2006)
Kolb and Kolb (2005)	3	1
	Kayes (2002)	Hawk and Shah (2007)
	Boyatzis, Stubbs, and Taylor (2002)	
	Holman, Pavlica, and Thorpe (1997)	
Bennis and O'Toole (2005)	0	4
		Dunne and Martin (2006)
		Adler (2006)
		Raelin (2007)
		Christensen, Peirce, Hartman, Hoffman, and Carrier (2007)
Pfeffer and Fong (2002)	0	3
		Ghoshal (2005)
		Pfeffer and Fong (2004)
		Grey (2004)
Alavi (1994)	1	12
	Leidner and Jarvenpaa (1993)	Leidner and Jarvenpaa (1995)
		Piccoli, Ahmad, and Ives (2001)
		Alavi and Leidner (2001)
		Alavi, Wheeler, and Valacich (1995)
		Arbaugh (2000a)
		Alavi, Yoo, and Vogel (1997)
		Arbaugh (2001)
		Arbaugh (2000b)
		Martins and Kellermanns (2004)
		Arbaugh (2000c)
		Arbaugh and Duray (2002)
		Lu, Yu, and Liu (2003)
Piccoli, Ahmad, and Ives (2001)	6	2
	Alavi (1994)	Lu, Yu, and Liu (2003)
	Leidner and Jarvenpaa (1995)	Eom, Wen, and Ashill (2006)
	Webster and Hackley (1997)	
	Alavi, Wheeler, and Valacich (1995)	
	Leidner and Jarvenpaa (1993)	
	Ives and Jarvenpaa (1996)	
Leidner and Jarvenpaa (1995)	3	11
	Alavi (1994)	Piccoli, Ahmad, and Ives (2001)
	Alavi, Wheeler, and Valacich (1995)	Webster and Hackley (1997)
	Leidner and Jarvenpaa (1993)	Arbaugh (2000a)
		Alavi, Yoo, and Vogel (1997)
		Arbaugh (2001)
		Arbaugh (2000b)
		Martins and Kellermanns (2004)
		Arbaugh (2000c)
		Arbaugh and Duray (2002)
		Eom, Wen, and Ashill (2006)
		Volery and Lord (2000)

(Continued)

TABLE 3
(Continued)

Author(s)	Articles cited	Article cited by
Kuratko (2005)	9	1
	Katz (2003)	Oosterbeek, van Praag, and Ijsselstein (2010)
	Gorman, Hanlon, and King (1997)	
	Vesper and Gartner (1997)	
	Solomon, Duffy, and Tarabishy (2002)	
	Honig (2004)	
	McMullan and Long (1987)	
	Gartner and Vesper (1994)	
	Hills (1988)	
	DeTienne and Chandler (2004)	
Zhao, Seibert, and Hills (2005)	1	0
	Solomon, Duffy, and Tarabishy (2002)	
Katz (2003)	3	3
	Gorman, Hanlon, and King (1997)	Kuratko (2005)
	Vesper and Gartner (1997)	Honig (2004)
	McMullan and Long (1987)	Pittaway and Cope (2007)

The Influence of Journals

We found an increasing proclivity toward citation of business and management education research in the last 10 years, with AMLE becoming a preferred publication outlet, as seen by 17 of the top 100 articles being published in that journal (Table 4). Some of the journals that published education-related research were more disciplinary-oriented research outlets. These included JBE, which focuses on ethics issues in business research; JBV, which focuses on entrepreneurship research; the previously mentioned MISQ; and AMJ, which looks broadly at issues pertaining to the management discipline. However, because the Academy of Management has delineated that learning and education issues are the domain of AMLE, subsequent articles on those issues being published in AMJ is unlikely. JME, JEB, and ML are the journals that are closest to AMLE for pure business and management education research outlets. Thus, researchers do have some outlets for business and management education research without having to grapple with discipline-based characteristics of their research if these do not fit discipline-based journal requirements.

As some of the top journals in business and management education research appeared in our listing, there may be some journal influence as legitimizing vehicles for business and management education research as well (Judge et al., 2007; Rynes & Brown, 2011). However, the pattern is not clear. Although one could consider AMLE as a legitimizing vehicle for business and management education research, and to a lesser extent similar patterns in JME or ML—both with somewhat longer publishing history—the presence of only two articles in our top 100 listing from another well-known business education journal, *Decision Sciences Journal of Innovative Education* (DSJIE, started in 2003), points to need for deeper examination of the role of journal status as a legitimizing vehicle in developing different research clusters (e.g., distance education/online teaching and learning, entrepreneurship education, experiential learning, etc.) within the business and management education area.

Third, there is at least partial congruence between article citations and the results of expert surveys regarding top journals in business and management education journals. AMLE, JBE, and JME are highly represented journals in our listing and are at the top of Currie and Pandher's (2013) stratified tiers. Other journals highly rated in Currie and Pandher's tiers, such as *Management Learning, Journal of Education for Business, Journal of Accounting Education*, and *Business (and Professional) Communication Quarterly*, have more than one article included in our top 100 article listing. However, the journal outlets for our top 100 listing showed inclusion of a range of journals, including many disciplinary area journals. The inclusion of prominent discipline-based journals such as JBV, AMJ, and MISQ, plus lesser known discipline-based journals such as *International Small Business Journal* and the mainstream educational research journal C&E, reveals a heterogeneous set of outlets from which highly cited business and management education research emerges. This suggests that the domain of business and management education journals as presented by AMLE (Currie & Pandher, 2013; Whetten, 2008) and other business education journals (Apostolou et al., 2013; Cummins et al., 2013; Kruck et al., 2013; Urbancic, 2009) may have

TABLE 4
The 100 most cited articles in business and management education by journal

Journal	Year of inaugural volume	h-index, 1970–2014	2012 JCR 5-year impact factor	Number of articles
Academy of Management Learning and Education	2002	73	3.598	17
Journal of Business Ethics	1982	178	1.270	8
Journal of Business Venturing	1986	216	3.954	7
Academy of Management Journal	1947	416	10.031	5
Journal of Management Education (formerly *Organizational Behavior Teaching Review*)	1975	54	Not listed	5
Management Learning	1970	87	1.708	5
MIS Quarterly	1977	258	7.474	4
International Small Business Journal	1982	92	2.119	3
Journal of Education for Business	1925	64	Not listed	3
Business (and Professional) Communication Quarterly	1969	38	Not listed	2
Computers & Education	1976	138	3.305	2
Decision Sciences Journal of Innovative Education	2003	28	Not listed	2
Education + Training	1959	64	Not listed	2
Harvard Business Review	1922	293	1.998	2
Information Systems Research	1990	236	3.638	2
Journal of Accounting Education	1983	44	Not listed	2
Journal of European Industrial Training	1977	68	Not listed	2
Academy of Management Review	1976	394	7.895	1
Accounting Review	1926	168	3.400	1
Assessment & Evaluation in Higher Education	1976	90	0.840 (1 year)	1
Australasian Journal of Educational Technology	1985	47	1.363	1
California Management Review	1958	170	2.554	1
Communications of the ACM	1958	369	2.540	1
Entrepreneurship and Regional Development	1989	42	1.333	1
Entrepreneurship Theory and Practice	1976	161	2.242	1
European Economic Review	1969	214	1.648	1
Financial Services Review	1992	32	Not listed	1
Information & Management	1977	162	3.178	1
Innovations in Education and Teaching International	1964	55	0.909	1
International Journal of Educational Management	1981	61	0.920	1
International Journal of Entrepreneurial Behaviour & Research	1995	64	Not listed	1
International Journal of Entrepreneurship Education (now *International Review of Entrepreneurship*)	2002	15	Not listed	1
Issues in Accounting Education	1989	57	Not listed	1
Journal of Applied Psychology	1917	362	7.313	1
Journal of Asynchronous Learning Networks (now *Online Learning*)	1997	65	Not listed	1

(Continued)

TABLE 4
(Continued)

Journal	Year of inaugural volume	h-index, 1970–2014	2012 JCR 5-year impact factor	Number of articles
Journal of Distance Education (now *International Journal of E-Learning & Distance Education*)	1986	41	Not listed	1
Journal of Economic Education	1970	73	0.429	1
Journal of Educational Research	1908	25	1.282	1
Journal of Management	1975	241	7.754	1
Journal of Management Studies	1964	212	4.744	1
Journal of Marketing Education	1979	63	Not Listed	1
MIT Sloan Management Review	1959	168	1.710	1
Quality Assurance in Education	1993	53	Not Listed	1
Simulation & Gaming	1970	63	Not Listed	1
The Leadership Quarterly	1990	152	3.784	1

Note. Sources: Harzing's Publish or Perish and Google Scholar, 3.26–3.27.15.

room to grow as preferred outlets for experienced business and management education scholars (Cunliffe & Sadler-Smith, 2014).

The Role of Special Issues

Eleven of the first 52 articles in the listing appeared in special issues of the journals in which they were published, which suggests that special issues devoted to relatively highly regarded journals have played an important role in shaping the composition of our listing. MISQ and AMJ published special issues on education in 1995 and 1997, respectively. Three articles in AMJ's special issue (Alavi et al., 1997; Baldwin et al., 1997; Webster & Hackley, 1997) and two articles in MISQ's special issue (Alavi et al., 1995; Leidner & Jarvenpaa, 1995) special issue made our top 100 listing, all of which are among the 35 most cited articles. In addition to these special issue articles that supported the research streams seen here, other special issue articles that provided further support for streams include Pfeffer and Fong (2002) and Mintzberg and Gosling (2002), which anchor the critiques of business schools stream, Arbaugh (2000a), which supported the online teaching and learning stream, and Honig (2004) and DeTienne and Chandler (2004) on entrepreneurship education stream. Although this certainly cannot be taken to suggest that every special issue will make an influential contribution, it does suggest that special issues can be a catalyst for accelerating interest in educational issues.

Limitations

To our knowledge, this is the first attempt to categorize articles in business and management education in terms of their scholarly influence, so there certainly will be limitations to our approach. First, attempting to assess article impact on citation counts alone has confounds such as lack of reflection of the scientific merit of a work, field-related citation compression, the article's number of authors, self-citations, bias against more recent articles, and variation in citation counts across fields of study (Arbaugh et al., 2013; Haley, 2014; Judge et al., 2007; Mingers & Xu, 2010; Radicchi et al., 2008). However, regarding the bias against newer articles, having 19 articles published in 2005 or later diminishes that concern for this study. Second, although Google Scholar has become increasingly robust and gained increasing acceptance as a tool for scholarly article searches (Harzing, 2014; Howland et al., 2009; Karlsson, 2014; Soutar & Murphy, 2009), some have expressed concerns regarding Google Scholar being overly inclusive of citing sources relative to tools such as Web of Science or Scopus (Aguinis, Suarez-Gonzalez, Lannelongue, & Joo, 2012; Bedeian, Van Fleet, & Hyman, 2009), and being subject to variation in search results depending on use of articles such as "the," "&," or "and" in journal searches (Haley, 2014). Third, although it is a helpful tool for calculating journal and author citation metrics, Publish or Perish does have a search limit of 1000 references per search and is subject to activity limits on accessing material from Google Scholar (Harzing, 2013). Nevertheless, despite these limitations and the less than perfect search process, with many of the journals that publish business education research not listed on the Social Science Citation Index, we concluded that our search approach was a reasonable trade-off. Finally, although our literature search terminology builds upon those used in other reviews of business education research and the search was pursued with validity and reliability considerations in mind, it is possible that we may have missed some terms that may have yielded additional articles. We hope that this listing and the approach used to derive it will serve as a starting point for further refinement by future scholars.

Emergent Questions and Opportunities for Further Research

Why Isn't the Experiential Learning Stream More Developed?

Considering the relatively extensive history and cross-disciplinary attention that experiential learning approaches have received in business schools (Apostolou et al., 2013; Dolan & Stevens, 2006; Lee, 2012), the fact that research on experiential learning was not a more broadly represented stream in this study is surprising, especially because online teaching and learning has a developed stream in spite of being a more recently adopted instructional medium. For that matter, and to a lesser extent, this concern also can be raised regarding learning that uses group/team activities (Apostolou et al., 2013; Bacon et al., 1999; Baldwin et al., 1997; Gray et al., 2012). There are some possible reasons for the inability of experiential learning and learning that involves group/team activities to have a more prominent influence in the business and management education literature. One could be the dominant influence of online/distance delivery appearing in the AMJ/MISQ special issues, which overshadowed some student team research that also was addressed in those issues. A possible explanation for experiential learning not getting higher attention in various business education journals is that this knowledge may have remained housed within their respective business disciplinary journals, thereby preventing broader dissemination of the best ideas on the topic in the business education area. We believe what scholars across the business disciplines are doing in the experiential learning area and where they choose to disseminate their research findings to have potential influence on increasing the consequential legitimacy (Rynes & Brown, 2011) of the experiential learning stream. As our search shows, articles on online delivery in business schools are published not only in business education journals but also in general education research journals with domains that are related to those in the business school. Perhaps further analysis through comparative studies of these research streams would yield insights regarding how business education scholars might disseminate their work more broadly.

How Well Does the Entrepreneurship Education Stream Development Pattern Generalize to Other "Education" Topic Areas?

The fact that entrepreneurship education literature is so well cited relative to other educational topics raises questions on how this stream's practices might have useful implications for other business education areas (Gartner, Davidsson, & Zahra, 2006; Gregoire, Noel, Dery, & Bechard, 2006). The fact that entrepreneurship education doesn't occur exclusively in university business schools certainly helps, but this likely is not the only factor that explains its success. Questions that might further explain this phenomenon include:

1. How is educational research perceived by entrepreneurship scholars?
2. Who are the champions of this research, and what mechanisms do they use to champion the work?
3. Do other topical areas have such mechanisms at their disposal, and how might they use them more effectively?
4. For those mechanisms that cannot be generalized, can topical-area scholars identify and leverage alternative mechanisms?

Further analysis of key articles in streams and patterns between them may provide helpful insights into these questions.

Why Has AMLE Been Such a Disruptive Force?

Although the majority of articles in our search were published in or after 2000, the fact that the most cited journal in our search, AMLE, wasn't published until 2002 suggests AMLE could have been a force in how business education research is perceived and cited in the research community. In addition to the many of our top 100 articles appearing in AMLE, there were also several articles that marginally missed our listing. It is reasonable to expect this journal to have an even greater influence going forward. This influence also could lead to changes in how business education journals perceive and present themselves. Another influence is the new 2013 AACSB requirement for schools to demonstrate the impact of their activities with specific inclusion of citation counts as one example of academic impact (AACSB, 2013, p. 46). This may have opened the conversation on the need for business education research to come under a scrutiny that is similar to those of research in the disciplines, thus leading editors and authors of journals toward high-impact journal models, such as demonstrated by AMLE.

A preliminary search for explanations of AMLE's success yields some possibilities, but each of these comes with a counterpoint. First, although AMLE is sponsored by a major academic professional organization (the Academy of Management), it is not the only business journal for which this is the case (e.g., *Issues in Accounting Education* is sponsored by the American Accounting Association but has a lower profile). Another explanation may be AMLE's Exemplary Contributions section that invites distinguished scholars to provide foundational pieces for the purpose of stimulating future research (Lewicki, 2002). However, in addition to five AMLE Exemplary Contributions, there were another 12 AMLE articles that made the top 100 listing. Second, although three of the top 10 articles and five of the articles in our overall listing are AMLE Exemplary Contributions, these represent less than 10% of the total number of articles, and there are many of these contributions that receive relatively few citations. A third explanation could be the relative portability of theories and methods of management research for conducting educational research, but this suggests that we should have seen even stronger performance from longer standing management education journals such as the *Journal of Management Education* and *Management Learning*. These examples suggest further study of factors that may predict AMLE's influence to uncover the extent to which

factors in isolation or in combination could have contributed to AMLE's rise to prominence in a short period of time.

How Did JME Become So Influential?

Notwithstanding comments regarding the top influence of AMLE, the fact that JME had so many articles in the top 100 listing is a surprising and welcomed discovery. In spite of not being listed on the Social Science Citation Index, JME had the fourth highest number of articles (five, tied with AMJ and *Management Learning*) in the listing. Although many see JME primarily as a vehicle for acquiring tools to improve one's teaching of management-related topics (Bilimoria, 1999; Schmidt-Wilk, 2011), this review and other recent surveys indicate that JME wields disproportionate influence in the field of business and management education research (Currie & Pandher, 2013). These results provide further support for former JME editor Jane Schmidt-Wilk's (2007) call of "Why not JME?" when considering potential outlets for one's manuscripts. Future studies might build upon previous work to determine the unique domains of AMLE and JME (Beatty & Leigh, 2010) and determine whether JME's influence is concurrent with, dependent upon, or independent of that of AMLE.

How Much More Can Be Gained From Self-Criticism?

We find it interesting that three of the four most cited articles were largely negative critiques of business schools. However, given that writing such highly cited critiques appears to be almost exclusively the domain of prominent discipline-based scholars (e.g., Pfeffer, Ghoshal, Bennis), it appears that this is an area for which the basis for acceptance may be due primarily to a scholar's influence on the scholarship of a discipline rather than to educational research. Although self-examination and critique certainly can yield productive dialogue for management education practice, relying on distinguished scholars whose expertise is in another area to write one or two articles on educational issues may not be a sustainable approach for developing a research stream. Therefore, it appears that although this stream presently may have relatively strong grounding, its longer term influence may be in jeopardy unless it can broaden its pool of influential authors. How might this stream develop so that a broader range of authors might contribute to it in a substantive manner?

How Can the Field Develop Its Own Community of Dedicated Scholars?

Many of the most highly cited articles to date have been published by authors who developed their scholarly reputations outside the area of business and management education research and some are no longer actively publishing in the area. To compound concerns regarding dedicated scholars, most of the authors in the top 100 listing have only one article on the list. Only 16 authors have two or more articles on the list, with only four authors having three or more articles. Several of these authors (e.g., Leidner and Jarvenpaa, Vesper and Gartner, Pfeffer and Fong) co-authored articles that reinforce each other's work and ideas. These business and management education publishing patterns show the need to develop more consistent interest among a larger group of scholars if business and management education research is to have a healthy ongoing dialogue of ideas.

That said, studies of educational research in disciplines such as accounting (Apostolou et al., 2013; Urbancic, 2009), marketing (Gray et al., 2012), and information systems (Kruck et al., 2013) suggest that these communities may already exist. However, given the relative absence of these communities from our listing, there appears to be some inability of these disciplinary areas to increase prominence of their educational research, but with potential to follow in the path of those areas that did, such as in entrepreneurship education, online learning, or critiques of business schools. This suggests that scholarship that could benefit teaching from these and possibly other business-related disciplinary areas still may reside in disciplinary silos. It is to the benefit of our fields, and perhaps more importantly of our external constituents, that these educational research communities begin dialogue on how to move their educational research toward a more prominent level. Perhaps some of the emerging works on the development of scholarly fields within business schools (Hambrick & Chen, 2008; Mudambi et al., 2012) may be a source of insight on how these communities might increase their consequential legitimacy and influence future directions of educational scholarship.

We see the expansion of business and management education research as a global phenomenon—one that is positive for identifying and developing new scholars (Billsberry, Kenworthy, Hrivnak, & Brown, 2013; Wankel & DeFillippi, 2010). In addition to possible new perspectives on business education (Lamb & Currie, 2012; Ma & Trigo, 2011), scholars from different parts of the world are likely to provide diverse perspectives on educational research relative to those traditionally held by North American and European business school faculty.

CONCLUDING THOUGHTS—ARE WE IN A "GOLDEN AGE" OF BUSINESS AND MANAGEMENT EDUCATION RESEARCH?

One of the primary takeaways from this article is that the last 15 years presented a particularly influential time for business and management education research, as reflected in 58 of the top 100 articles being published in or after 2000, 19 of which were published since 2005. Certainly concerns of biases toward newer articles from citation analysis studies do not apply here. One partial explanation for this expansion of business education research activity is the Academy of Management lending legitimacy to the area through the creation of AMLE. However, the fact that AMLE accounts for less than one-third of the articles in the listing published in or after 2000 suggests that other factors were involved in this increase of citation activity.

Given this recent surge of citation activity, it may be tempting to think that we are in the midst of a "golden age" for business and management education research. The findings of our study suggest a qualified "yes." Although there is increased scholarly attention to recently published articles, there also is evidence that some long-standing literature areas, such as experiential learning, have not been fully caught up in this surge, and that educational topics of interest across disciplines may be stifled within disciplinary silos in some areas, due to lack of cross-disciplinary research dialogue. Also of concern is that the surge of citations we have seen here appears to be distributed unevenly across the business disciplines, with heavy reliance on management scholars who critique business schools, entrepreneurship education, or online education, which in some ways may generate a sense of exclusivity. We hope our effort to uncover highly cited business and management education research can help researchers with an interest in these areas to start boning up on business educational research interest issues, begin dialogues across the business disciplines (especially the particularly prolific scholars in these areas), and continue to contribute to these conversations through any of the journals identified in our study.

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APPENDIX: PROFILES OF THE 10 MOST HIGHLY CITED ARTICLES

Ghoshal (2005; 2,385 citations) pointed to the need of researchers to go deeper in understanding how their theories could have a potentially negative impact on societies. For example, he questioned the focus on negative assumptions about human nature in applying agency theory and transaction cost theory in business school curricula, which could lead to questionable behaviors. The importance of developing theories that better reflect complexity of behaviors, both good and bad, has to be considered carefully in theory development and educational practice for a better world. His call was for researchers to play a positive role through their theory development and research.

Kolb and Kolb (2005; 1,596 citations) present the concept of learning spaces and its use as a framework to explore the relationship between different student learning styles and different institutional learning environments. By using this framework, they showed through student samples how a learning environment could be designed to suit different student learning styles. These, in turn, have implications for longitudinal outcome assessment, curriculum development, student development, and faculty development.

Bennis and O'Toole (2005; 1,529 citations) were critical of how business schools' curricula have not met the needs of the business world. The call to measure business schools by competencies of their graduates instead of by research output is an important theme of the article. There is a need to understand and address the divergence of focus in what business schools deem to be important in their endeavors (research publication and related priorities) and what the business world deems to be important in its expectations of business schools (i.e., student ability to meet employer expectations).

Pfeffer and Fong (2002; 1,347 citations) were critical of business school graduates and the lack of a relationship between a business degree qualification and career success. In other words, did students really learn anything useful in business schools that they could use at the workplace and be recognized for their contributions? Another critique was the lack of relevance in business school research for business practices. Their call was for business schools to reinvent their programs through practices such as accepting more experienced students who have the ability to practice what they learn in schools; using multidisciplinary design rather than the functional approach, which could result in silo thinking; challenging problem conceptualization and thinking instead of learning concepts; and requiring clinical components to develop business skills.

Alavi (1994; 1,204 citations) developed a targeted research piece that showed how group decision support systems (GDSS) that are anchored in information technology research could improve student learning, collaboration, problem analysis and other positive learning effects. An important contribution of GDSS was in providing students instantaneous feedback on their learning decisions—a mechanism that helps students learn from their decisions at their most receptive learning points.

Piccoli, Ahmad, and Ives (2001; 1,077 citations) explored differences between a Web-based virtual learning environment (VLE) and the traditional face-to-face classroom. They also pointed out differences between these two environments and a computer-aided instruction (CAI) approach for learning design. The article drew boundaries for the VLE research domain, and addressed relationships among emerging VLE constructs for future research.

Leidner and Jarvenpaa (1995; 1,031 citations) showed how different learning modes should be considered in adapting information technology to the learning environment. For example, contrasts need to be made between learning settings of individual learning and group learning, or development of jointly discovered knowledge and transfer of knowledge in information technology design. Arising from such careful consideration, emerging technology enhanced learning models could help educators provide better learning environments for students.

Kuratko (2005; 889 citations) reviewed entrepreneurship education and its research landscape, and called attention to 10 areas for action: move entrepreneurship education into a

more prominent position, appreciate the research and publication needs of entrepreneurship faculty, support training for more entrepreneurship faculty, use technology in entrepreneurship education, ensure a genuine entrepreneurship mindset in students, expose students to real entrepreneurship experiences in the classroom, ensure true entrepreneurship content in courses, encourage faculty to pursue entrepreneurship fields, provide institutional administrative support for entrepreneurship research and learning needs, and fan a passion of individuals in the entrepreneurship education field.

Zhao, Seibert and Hills (2005; 784 total citations) examined the important effect of self-efficacy in the development of students' intentions to become entrepreneurs. Their empirical study showed positive effects of self-efficacy on perceived learning from entrepreneurship-related courses, previous entrepreneurial experience, and risk propensity on entrepreneurial intentions. Women were reported to have lower entrepreneurial career intentions than men.

Katz (2003; 760 citations) developed a review of the entrepreneurial education historical landscape, with highlights on the nature of entrepreneurial courses, supplemental infrastructures to support this learning environment, and research strands. General conclusions include a maturity of entrepreneurship courses in the United States, with entrepreneurship majors being the next development. Higher growth in entrepreneurship courses are likely to happen outside, rather than within the U.S. environment. He also called attention to increased funding of endowed positions and research centers with recognition of entrepreneurship education in society. There was a concern with the glut of entrepreneurship journals and a simultaneous narrowing focus toward top-tier journal publication. A shortage of faculty members who specialized in entrepreneurship discipline also was noted.

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