Identifying Research Topic Development in Business and Management Education Research Using Legitimation Code Theory

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Abstract

Although the volume of business and management education (BME) research has expanded substantially, concerns remain about the field's legitimacy and its ability to attract new and dedicated scholars. An obstacle that may impede field development is lack of knowledge about influential works and authors to frame topical areas of inquiry and future research questions. We used citation analysis to track the development of BME research by uncovering 100 highly cited articles that revolve primarily around four research topical areas: (a) Entrepreneurship Education, (b) Distance Education/Online Teaching and Learning, (c) Business Student Ethics, and (d) Characteristics/Critiques of Business Schools. We then used legitimation code theory to categorize these articles on the basis of richness of knowledge ideas (Knowledge Code), the reputation of scholars (Knower Code), the combination of knowledge

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and reputation (Elite Code), or some other qualities (Relativist Code). Both Entrepreneurship Education and Online Teaching and Learning had articles in Relativist Code, Elite Code, and Knowledge Code categories, with other topical areas primarily populating the Knower Code and Relativist Code categories. We conclude by discussing potential implications for the development of BME research topics, BME scholars, and future applications of legitimation code theory.

Introduction

Recent developments suggest that there never has been a better time to be a business and management education (BME) scholar. The expansion of business schools beyond North America and Western Europe call for the study and development of educational models and curricula that generalize to these new settings (Eisenberg, Hartel, & Stahl, 2013; Lamb & Currie, 2011). As advancements in instructional technology affect both how and where we deliver education, we need contributions from BME scholars to determine optimal combinations of content and presentation (Wankel, 2009; Whitaker, New, & Ireland, 2015). Increased scrutiny from external stakeholders warrants the need to demonstrate that our approaches to teaching have been vetted using current research on both content and process (Arbaugh, in press; Forray & Lund Dean, 2014). Each of these challenges suggests that the need for vibrant scholarship across the business school should be in high demand for the foreseeable future.

We refer to BME research as an encompassing term that includes management education research, accounting education research, finance education research, marketing education research, and all other business-related educational research areas (De Vita, 2001; Donaldson, 2002; Plaschka & Welsch, 1990). The rise of new learning and education research journals in the 21st century, such as *Academy of Management Learning & Education*, *Decision Sciences Journal of Innovative Education*, and *International Journal of Management Education*, to complement long-standing outlets such as *Journal of Management Education (JME)*, *Management Learning*, and *Journal of Education for Business* (*JEB*), has substantially increased the number and variety of outlets for BME scholars.

However, concerns regarding the relatively few scholars who publish this type of research extensively persist to this day (Arbaugh, DeArmond, & Rau,

2013; Fukami, 2007; Schmidt-Wilk, 2007). Historical causes for this lack of highly active scholars include a lack of exposure to educational research in doctoral programs, a lack of perceived prestige associated with conducting educational research in business schools, and a general lack of incentives for such research in business school accreditation requirements. However, Association to Advance Collegiate Schools of Business's 2013 accreditation requirements (Standard 2) now include learning and education research as an area for attention, with expectations placed on business schools to demonstrate the impact of such research works on learning outcomes in business schools. Thus, questions of how, and in what areas, scholars could produce impactful BME research will become an increasingly important consideration for business schools and faculty members.

The increasing legitimacy of BME research can be seen in the growth of articles and related citations over the past 20 years (Beatty & Leigh, 2010; Currie & Pandher, 2013), especially from highly cited and prominent works, such as those by Ghoshal (2005) and Pfeffer and Fong (2002), which critique business schools. In examining the growth of this research and the role of such prominent works for developing the field, we could not help but become intrigued by the idea of whether an article is well cited or recognized because of the topic it addresses, the profile of the author(s) who wrote it, some combination of these two factors, or other possible reasons. Certainly, intrigue and novelty of an idea, plus rigor of arguments and analyses, could be important factors in stimulating further research, and therefore draw related citations (Bedeian, 2004; Rynes & Brown, 2011; Starbuck, 2003). However, the role of well-known writers who contribute to a research area, and thus raise the importance of that area before readers, also is a possible influence for citations (Howard & Maton, 2011; Podsakoff, MacKenzie, Podsakoff, & Bachrach, 2008). The role of well-known scholars lending voice to an area draws attention because readers recognize these writers from earlier highly visible works in other disciplinary areas, and therefore could help develop a following in a new area.

The question of idea influence or author influence in getting an article wide recognition and extensive citations is important for a field's development because if it is the idea that generates interest, then this suggests that scholars can develop careers based on BME issues as long as they provide thought-provoking ideas and in-depth research to develop those ideas. Conversely, if impact is based primarily on author reputation, the field will continue to lag in development, as first, there are few high-reputation scholars, and second, if the field is dependent only on high-reputation scholars, this will require consistent high-level works from such scholars over a long period of time so as to maintain attention of other researchers to develop the

field. Whether such high-reputation scholars are willing to commit a major part of their research careers to the BME field is uncertain, given many such high-reputation scholars have developed their reputations in other disciplinary areas, and requiring them to commit significant energy and time in a new field may be a difficult proposition.

Apart from idea versus author influence in getting an article wide recognition, recent research has pointed to a third possible factor: prominence of a journal (Judge, Cable, Colbert, & Rynes, 2007). Highly prominent journals are likely deemed to be outlets for high-quality research, and therefore warrant the attention of readers. Thus, having an idea published in a prominent journal could raise the importance of an idea or even a research area. Still, others have pointed to additional influencing factors for a widely recognized article, such as the legitimacy of the writing and review processes, including peer reviews and the role of important people on review boards. These processes are deemed to be indicators of rigor and quality which, in turn, could raise the profile of an idea if it survives such processes (Rynes & Brown, 2011).

The above are possible influencing factors that have been raised by researchers on how articles could become highly recognized in the field. To help identify the relative influences of idea or knowledge topics, author reputation influence, and outlets on development of the BME research field, this article used legitimation code theory (LCT; Howard & Maton, 2011) as a framework for presenting its development. We see this work as starting what we feel is a necessary shift among BME researchers toward the role of citations as a tool for both attracting new scholars to and partially measuring the influence of the field. For those conducting research in the business disciplines, assessing influence via citation-based metrics is now common practice (Aguinis, Shapiro, Antonacopoulou, & Cummings, 2014; Judge et al., 2007). Not considering the role of citation in this emerging field increases the risk of alienating potential new scholars who have become accustomed to communicating with other scholars via these tools. Furthermore, citation-based approaches actually may lead us to examine our teaching in a more scholarly manner through the vetting of our instructional processes and grounding teaching approaches in the peer-reviewed wisdom of fellow educators (Arbaugh, in press; Dehler, Beatty, & Leigh, 2010).

Accordingly, based on these arguments for the use of citations as a metric, this study's first objective is to examine BME article citation counts that will help us uncover the most highly recognized articles. These highly cited articles then are classified according to substantive content in different topical areas and further examined for content characteristics that may show the influence of author stature and/or richness of ideas in reaching highly cited

status. From this inquiry, we also will show the extent to which different topics are dependent on high-reputation discipline-based scholars versus scholars who focus primarily on BME research.

The second objective of this study is to explore patterns of citation relationships among these highly cited articles, and whether and how within-topic and across-topic citation patterns may reveal eventual topical area development. This examination will help us understand how BME research areas may have developed over time and whether some common foundations exist for the emerging field. This examination also will show us possible growth and maturity stages of different topical areas, and the extent to which topics are independent of, or dependent on, each other. The lack of a common foundation among topical areas may reveal a relatively immature field, as each topical area seeks to find its own basis for existence versus a more mature field where many areas recognize their common educational research foundations, and thus agree on foundational roots and research questions. Our analysis suggests that some prominent topical areas within BME research have emerged, but these areas tend to draw from within-topic literature rather than literature from other topical areas to influence their work. The different areas also appear to be somewhat dependent on high-reputation authors to initiate and anchor works in these areas. Although these findings suggest a field that is early and somewhat disjointed in its development, they also suggest opportunities for emerging scholars to enter the field and build on various foundations (Arbaugh et al., 2013).

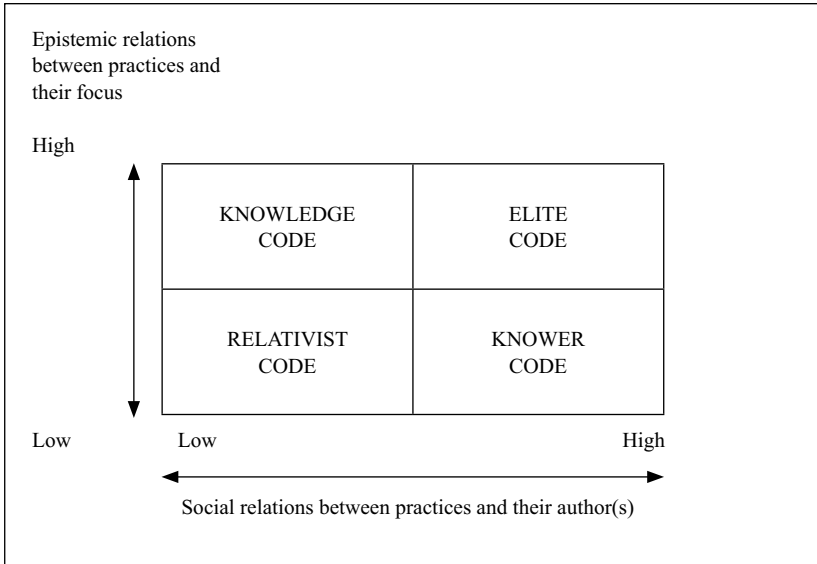## Legitimacy Frameworks and Citation Analysis

The conceptual basis for BME research legitimacy can be traced to earlier works on organizational legitimacy (Bansal & Clelland, 2004; Suchman, 1995; Verne, 2011). The need for legitimacy is an important consideration for an organization because along with legitimacy comes acceptance of the organization by the community it exists within and consequent support for its activities and existence. Legitimacy is achieved through adopting commonly accepted practices and norms, such as those that satisfy customers and address supplier and competitor pressures, and generally meeting community expectations and other stakeholder considerations in business settings (Deephouse, 1996; Freeman, Wicks, & Parmar, 2004; Pollock & Rindova, 2003). An organization that exhibits the necessary legitimacy characteristics is likely to have more success in engaging transactions with important stakeholders, and thus increases its odds of survival (Carter, 2006; Chan & Makino, 2007). Aspects of this struggle for legitimacy can be seen in research development of the management discipline (Hambrick & Chen, 2008), and more

recently in the management education research field (Arbaugh, 2008; Rynes & Brown, 2011).

A search of the literature to identify possible legitimacy frameworks for BME research uncovered three possibilities that were developed recently by researchers. All three frameworks are relatively new, with the earliest being a study of legitimacy characteristics by Judge et al. (2007), followed by LCT by Howard and Maton (2011) and legitimacy theory framework by Rynes and Brown (2011). All three frameworks have a range of proposed variables and relationships, but to date, there have been limited studies examining the reliability of each framework. Thus, all the proposed variables and relationships have yet to stand the rigor of long-term testing and examination for their stability. Therefore, rather than depend on posited variables and relationships from any single theoretical framework for our theoretical foundation, we decided to identify commonalities across all three theoretical frameworks with the objective of finding the few major common variables across all three studies, which should prove to be more stable due to their consistent presence. This led us to LCT, the framework that has the least number of variables, idea or knowledge richness versus author reputation, qualities that also were identified in the other two legitimacy frameworks of Judge et al. (2007) and Rynes and Brown (2011). Therefore, our primary attention will be on these two variables of LCT, as they seem to be the common denominators across these three frameworks and probably the most stable ones across all studies.

Howard and Maton (2011) proposed LCT to explain how educational research knowledge attains legitimacy in the eyes of readers. According to this theory, there are two dimensions for consideration in determining knowledge legitimacy. The first dimension is the extent to which the knowledge is rich and attracting interest. Articles with rich knowledge strands are likely to draw attention and, in turn, draw more articles into the area to further develop those ideas, thus showing numerous knowledge pieces in a topical area. The second dimension is the relative stature of the author. Authors with high stature are widely recognized by the community, and consequently could also draw attention to their published articles. Superimposing these two dimensions on each other produces four quadrants to classify propounded knowledge and examine its basis for drawing reader attention: Elite Code, Knowledge Code, Knower Code, and Relativist Code. This framework is presented in Figure 1.

The first quadrant, Elite Code, is supported by the stature of the author and the richness of knowledge strands as reflected by different ideas in the topical area. Articles that fall within this quadrant have high levels of (a) knowledge strands in a distinct, epistemologically grounded set of ideas addressing a topical area and (b) recognition by the research community of authors who

Epistemic relations
between practices and
their focus

High

KNOWLEDGE CODE	ELITE CODE
RELATIVIST CODE	KNOWER CODE

Low   Low   High

Social relations between practices and their author(s)

Figure 1. Howard and Maton's (2011) legitimacy code theory framework.

produce the knowledge. The diagonally opposite quadrant, Relativist Code, captures articles that have a generally acceptable level of interest in the knowledge area, but with more limited levels of knowledge strands and a less richly defined epistemological knowledge base. Author recognition also is not particularly high in this quadrant. Nevertheless, articles in this quadrant still could draw reader attention because of prominence of the journal (Rynes & Brown, 2011), or positioning of the article in the journal (Judge et al., 2007). In the third quadrant, Knower Code, knowledge pieces come from authors of stature, but with ideas that are not necessarily drawing additional works to further develop knowledge strands or epistemological knowledge base. High recognition of these authors likely is traceable to their scholarly reputations in other disciplinary areas. Any knowledge classified in this quadrant will draw on the stature of the author to garner reader attention. Finally, the fourth quadrant, Knowledge Code, captures articles that have many interesting knowledge strands, as reflected by a variety of different pieces of knowledge, and therefore showing a richer epistemological knowledge base. However, articles in this group are written by authors who have normal and not high-profile stature in the research community. Knowledge classified in this quadrant is dependent on a variety of different propounded knowledge pieces to draw reader attention.

To the extent that research works in different topical areas, and therefore the overall field, exhibit both high Knower and Knowledge dimensions, such topical areas or fields may be deemed to have the support of well-known authors and a rich set of epistemologically grounded knowledge base to draw reader attention and further build the areas or fields. Research topical areas that show high levels of both dimensions are likely to be at an important stage of development, as there are two bases to draw reader interest. Such topical areas are likely to continue to grow if high levels of both dimensions persist into the future. In contrast, topical areas that neither engage high-stature authors nor produce sufficient knowledge pieces to build a rich epistemologically knowledge base may reflect areas that have yet to develop a basis for legitimacy before readers, or that have developed legitimacy in the past, but are no longer of interest to readers. Our study seeks to identify the extent to which both high-stature authors and/or richness of knowledge base could draw interest of the community into BME research and, therefore at the aggregate level, also in the research field. In doing so, we hope to provide a landscape of the topical areas and the emerging field, and help researchers and readers understand areas of current interest to readers and others that may have potential for growth.

Method

Review Protocol

Our first step in operationalizing LCT for BME research was to identify the field's most highly cited articles. As this field is at a comparatively early stage of development, and the pool of potential outlets for such research is diverse and fragmented (Currie & Pandher, 2013; Rynes & Brown, 2011), we used raw citation counts to identify reader interest of articles across a wide range of journals: a practice that has been shown to be appropriate for new fields (Ramos-Rodrigues & Ruiz-Navarro, 2004). We also 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 interest (Baird & Oppenheim, 1994; Tahai & Meyer, 1999).

Our approach to identifying articles was similar to those used by Hodge, Lacasse, and Benson (2011) and Halverson, Graham, Spring, and Drysdale (2012) in determining the most cited articles for social work and blended learning, respectively. Their protocols identified the most cited articles by using a citation count tool 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. To frame our review, we used Armstrong and Fukami's (2009) recent definition of management

education as formal learning in the context of academic institutions to drive our article search. Because such learning opportunities typically reside within schools/colleges of business, we were interested in articles that pertained to educational practices within these institutions. Therefore, we took a more encompassing approach by considering any education-related publications pertaining to business schools instead of only publications that were strictly related to education within the management discipline. Thus, publications across all disciplinary areas housed in business schools and educational research journals that published articles on education delivered by business schools were included in this study. Table 1 lists the search terms we used to identify articles.

We used Harzing's (2013) *Publish or Perish* software program to identify the most cited articles containing these search terms. *Publish or Perish* compiles citation counts from Google Scholar, which has been found to provide characterizations of scholarly impact of articles similar to those provided by more restrictive databases such as Scopus or Social Science Citation Index (SSCI), and has been found to be more informative for assessing educational and non-English-language research (Adler & Harzing, 2009; Rynes & Brown, 2011; Van Aalst, 2010). We then inspected the highly cited articles using those terms to ensure that they focused on educational issues and/or educational practices within business schools, and eliminated articles that were oriented toward research in a business discipline and/or mentioned a search term peripherally (such as Hambrick and Mason's [1984] work on upper echelons theory that mentioned "management education"), or articles from other disciplines that use these terms (such as Bodenheimer, Lorig, Holman, and Grumbach's [2002] discussion of management education in their article on patient self-management of chronic diseases in primary care), or articles that applied the terms in settings outside of higher education, such as entrepreneurship education or financial literacy education provided to K-12 students or adults that were not attending college degree programs. Consistent with practice used in domain reviews of BME journals (Beatty & Leigh, 2010; Korpiaho, Paivio, & Rasanen, 2007; Rynes & Brown, 2011), we used the year the journal now known as *Management Learning* was created (1970) to frame the period for our review. As we reviewed articles generated from our search terms, we compiled a listing of the 100 most cited articles published through December 2014 based on their citation counts through July 2015.

After compiling these highly cited articles, our first analysis was to examine each article by the extent it cited other articles in the top 100 list and the extent it was cited by other articles in the top 100 list. We did this by creating a cross-referenced listing of the articles using Google Scholar searches to determine first, the number of articles in the listing that a particular top 100 identified article cites in that article (i.e., citations of articles published before it), and

Table 1. Terms Used in the Literature Search.

Accounting education
Business education
Business schools
Entrepreneurship education
Executive education
Finance education
Human resources education
Information systems education
Leadership education
Management education
Marketing education
MBA courses
MBA education
MBA program(s)
Operations management education
Organizational behavior education
Strategic management education
Strategy education
Supply chain management education
Undergraduate business courses
Undergraduate business students
Teaching accounting
Teaching business
Teaching business ethics
Teaching entrepreneurship
Teaching evidence-based management
Teaching executives
Teaching finance
Teaching human resources
Teaching information systems
Teaching leadership
Teaching management
Teaching marketing
Teaching MBAs
Teaching operations management
Teaching organizational behavior
Teaching strategic management
Teaching supply chain
Teaching undergraduate business students

second, the number of times that article is cited by other top 100 articles in the listing (i.e., citations by articles published after it). This examination showed the degree to which each of the top 100 BME articles recognized the works of others on the list. It is aimed at determining the extent to which these top 100 works show common foundational bases, thus producing preliminary insights into roots and relationships among specific research areas in the field. We also reviewed each article for the research prominence of its authors and the richness of ideas in the area, as reflected in the variety of knowledge pieces in the topical area. We provide results of the compilation of articles, cross references to other highly cited articles, and author h-index scores in the appendix.

The next analysis was to examine how different topical areas of the field may recognize each other. This was done by classifying the top 100 articles into 21 different research topical areas according to the nature of the article content and our experience on topical areas in the research field. All the authors have held or continue to hold key editorial positions in major BME journals with substantial experience in this field. We categorized the 100 articles into topical areas based on inspection of the article's title and abstract for primary topic themes. If the topical area did not emerge from this inspection, we made the determination by reviewing the full article. Table 2 shows where the top 100 articles were placed in their respective research topical area, along with total citations of all articles in each topical area, the number of citations of top 100 articles by articles in each topical area, the number of citations within each topical area by articles in a particular topical area, and the number of citations of articles in a particular topical area by articles outside of the topical area.

Operationalizing LCT

Although a useful framework, attempts to operationalize LCT to date have been limited (McKenna, 2014; Quinn & Vorster, 2014). Our search found that most of those attempts have been qualitative rather than quantitative, including limited work in BME (Doherty, 2010). Efforts to quantitatively operationalize LCT to date have focused on student and teacher categorization of types of knowledge in subjects such as mathematics or English (Howard & Maton, 2011). Ours is a first attempt to use the framework in quantitatively capturing the development of an academic field.

Because of a range of readily available and stable citation index variables, we grounded Knower Code in LCT by using the author/highest coauthor h-index score with a rule of thumb that an author h-index score of 20 and above represents a moderately successful scholar, and a score of 40 and above

Table 2. Research Streams and Citation Patterns Among the 100 Most Cited Articles in Business and Management Education, 1970 to 2014.

Topic	Number of articles in citation analysis	Total number of citations for articles in topic area	Number of citations of top 100 articles by articles in a topic area	Number of citations of top 100 articles in same-topic area by articles in a topic area	Number of citations of articles in the topic area by articles outside the topic area
1. Entrepreneurship education	27	11,256	71	69	0
2. Distance education/online teaching and learning	22	10,533	69	68	0
3. Business student ethics	11	2,999	5	4	0
4. Characteristics/critiques of business schools	9	7,705	10	7	10
5. Experiential learning	5	2,859	5	4	1
6. Student teams	5	1,581	1	1	1
7. Accounting education	5	1,237	1	1	0
8. Graduate management education	4	1,267	2	0	6
9. Competency/skill development	3	1,044	0	0	5
10. Critical management education	3	949	3	0	0
11. Social media in management education	2	1,111	0	0	0
12. Simulations in business and management education	2	778	1	0	0
13. CSR education	2	592	2	0	0
14. International business education	2	470	1	1	0
15. Finance education	1	433	0	0	0
16. Service quality in business and management education	1	333	0	0	0
17. Design thinking in management education	1	313	3	0	0
18. Business internships	1	282	0	0	0
19. Arts in management education	1	269	1	0	0
20. Evidence-based management education	1	230	2	0	0
21. Case method	1	229	0	0	1

Note. CSR = corporate social responsibility. Number of articles count totals more than 100 due to some articles addressing more than one topic area.

represents an outstanding scholar (Hirsch, 2005). We used h-index scores calculated by *Publish or Perish*/Google Scholar over those by Web of Science/SSCI because initial studies suggest that these may be preferable data sources for bibliometric studies in business and educational research (Mingers, Macri, & Petrovici, 2012; Van Aalst, 2010).

We then used the number of articles in each topical area to serve as the other factor for calculating the position of articles in the LCT framework. We initially placed articles in Knower Code for those with an author h-index (or the highest coauthor h-index for coauthored articles) of 40 and above, and in Relativist Code for those below 40. Next, for each article, we multiplied the number of articles in its topical area by the author/highest coauthor h-index score of each respective article to produce each article's legitimacy score. This computed legitimacy score subsequently was used to determine whether the article was moved to either Knowledge Code or Elite Code. This calculation step allows each article to be ranked by its author stature within its respective topical area. It also accounts for the size of the research area, with a larger number of articles in an area producing a larger score for any particular article in that area. This accounting for number of articles in the area is a proxy for the richness of knowledge strands in a particular area. Thus, an article in an area with many articles has a greater likelihood of drawing reader attention because of many more knowledge strands than an article in a smaller area that has more limited knowledge strands. For example, DeTienne and Chandler (2004), an entrepreneurship education article, earned a legitimacy score of 702; Gaylen Chandler's h-index score 26 multiplied by 27 articles in the topical area = 702. Visual inspection of computed article scores using this formula suggested cutoff points of 400 to 799 for lower level scored articles after accounting for both author stature and number of knowledge pieces in the area. Articles falling within this range were moved from the Relativist Code quadrant to the Knowledge Code quadrant. Articles with 800 or above scores were moved from the Knowledge Code or Knower Code quadrant into the Elite Code quadrant. We present the positioning of all 100 articles in the LCT framework in Table 3.

Observations on the LCT Quadrants

Our LCT categorization schema produced a distribution across the four quadrants generally weighted more toward the development of epistemologically grounded knowledge than on reliance on the presence of high-profile scholars. With 44 articles, Relativist Code had the largest article concentration, followed by Knowledge Code (26 articles), Elite Code (19 articles), and Knower Code (11 articles), respectively. We discuss the composition of these quadrants in the following paragraphs.

Table 3. Legitimation Code Theory Positions of 100 Most Cited Articles.

Knowledge Code	Elite Code
Entrepreneurship Education	*Entrepreneurship Education*
Zhao, Seibert, and Hills (2005)	Kuratko (2005)
Katz (2003)	Gibb (1993)
Solomon, Duffy, and Tarabishy (2002)	Vesper and Gartner (1997)
Kirby (2004)	Gartner and Vesper (1994)
Fiet (2001a)	Oosterbeek, van Praag, and Ijsselstein (2010)
Honig (2004)	Gibb (1987)
Fiet (2001b)	Jack and Anderson (1999)
Pittaway and Cope (2007)	Johannisson (1991)
Henry, Hill, and Leitch (2005)	Shepherd (2004)
DeTienne and Chandler (2004)	*Distance Education/Online Teaching And Learning*
Kolvereid and Moen (1997)	Alavi (1994)
Hills (1988)	Piccoli, Ahmad, and Ives (2001)
Neck and Greene (2011)	Leidner and Jarvenpaa (1995)
Jones and English (2004)	Webster and Hackley (1997)
Laukkanen (2000)	Alavi and Leidner (2001)
Distance Education/Online Teaching and Learning	Alavi, Wheeler, and Valacich (1995)
Arbaugh (2000a)	Alavi, Yoo, and Vogel (1997)
Arbaugh (2001)	Leidner and Jarvenpaa (1993)
Stacey (1999)	*Characteristics/Critiques of Business Schools*
	Pfeffer and Fong (2002, 2004)
Eom, Wen, and Ashill (2006)	
Martins and Kellermanns (2004)	
Arbaugh (2000b)	
Arbaugh and Duray (2002)	
Arbaugh (2000c)	
Marks, Sibley, and Arbaugh (2005)	
Bocchi, Eastman, and Swift (2004)	
Business Student Ethics	
Cohen, Pant, and Sharp (2001)	

Relativist Code	Knower Code
Business Student Ethics	*Characteristics/Critiques of Business Schools*
Borkowski and Ugras (1998)	Ghoshal (2005)
Nonis and Swift (2001)	Bennis and O'Toole (2005)

Table 3. (continued)

Relativist Code	Knower Code
Arlow (1991)	Trieschmann, Dennis, Northcraft, and Nieme (2000)
Sims (1993)	Gioia and Corley (2002)
Davis and Welton (1991)	*Business Student Ethics*
Lysonski and Gaidis (1991)	McCabe, Butterfield, and Trevino (2006)
Student Teams	*Graduate Management Education*
Baldwin, Bedell, and Johnson (1997)	Mintzberg and Gosling (2002)
Feichtner and Davis (1984)	*Experiential Learning*
Freeman (1995)	Kolb and Kolb (2005)
S. B. Wolff, Pescosolido, and Druskat (2002)	*Competency/Skill Development*
Bacon, Stewart, and Silver (1999)	Boyatzis, Stubbs, and Taylor (2002)
Accounting Education	*Arts in Management Education*
Eskew and Fahley (1988)	Adler (2006)
Armstrong (1987)	*Evidence-Based Management Education*
Shaub (1994)	Rousseau and McCarthy (2007)
Doran, Bouillon, and Smith (1991)	*Case Method*
Cohen and Hanno (1993)	Argyris (1980)
Distance Education/Online Teaching and Learning	
Volery and Lord (2000)	
Van Raaij and Schepers (2008)	
Lu, Yu, and Liu (2003)	
Drennan, Kennedy, and Pisarski (2005)	
Experiential Learning	
Kayes (2002)	
De Vita (2001)	
Holman, Pavlica, and Thorpe (1997)	
Ladd and Ruby (1999)	
Entrepreneurship Education	
Gorman, Hanlon, and King (1997)	
McMullan and Long (1987)	
Bechard and Gregoire (2005)	
Characteristics/Critiques of Business Schools	
Rindova, Williamson, Petkova, and Sever (2005)	
Friga, Bettis, and Sullivan (2003)	

Table 3. (continued)

Relativist Code	Knower Code
Behrman and Levin (1984)	
Critical Management Education	
Reynolds (1998)	
Cunliffe (2004)	
Grey (2004)	
Social Media in Management Education	
Williams and Jacobs (2004)	
Ebner, Lienhardt, Rohs, and Meyer (2010)	
Simulations in Business and Management Education	
Keys and Wolfe (1990)	
Faria (1998)	
CSR Education	
Matten and Moon (2004)	
Christensen, Peirce, Hartman, Hoffman, and Carrier (2007)	
Finance Education	
Chen and Volpe (1998)	
Service Quality in Business and Management Education	
Oldfield and Baron (2000)	
Design thinking in management education	
Dunne and Martin (2006)	
Business Internships	
Gault, Redington, and Schlager (2000)	
Graduate Management Education	
Navarro (2008)	

Note. CSR = corporate social responsibility. Elite Code: legitimacy score over 800. Knowledge Code: legitimacy score 400 to 799 with author h-index score below 40. Knower Code: author score above 40 and legitimacy score below 800. Relativist Code: legitimacy score 1 to 399. Articles identified in more than one category for Table 2 are placed in their primary category.

Relativist Code

Along with having the most articles, the Relativist Code quadrant also has the highest number of different topical areas. Sixteen of the 21 topical areas we identified appeared in the Relativist Code quadrant. This suggests that most of the topical areas identified in our study still are developing their set of epistemological

knowledge boundaries and ideas, and working on clearer grounding and agreed on foundations for their knowledge. However, 11 of the topical areas in this quadrant are represented by more than one article, thus showing emerging interest in adding knowledge strands to each of these areas, and five of these topical areas (Business Student Ethics, Distance Education/Online Teaching, Entrepreneurship Education, Critiques of Business Schools, Experiential Learning) also have articles in the other three quadrants. These five topical areas that have articles in other quadrants showed potential for some of these Relativist Code articles to move toward these other quadrants (Knowledge Code if the article continues to draw citation attention; Knower Code if the authors begin to be recognized in the community; or Elite Code if both authors and articles draw attention from the community of scholars). As noted in our literature review, articles in this quadrant can attract reader interest due to journal placement and positioning, as demonstrated by publications in well-regarded outlets such as *Academy of Management Journal* (Baldwin et al., 1997; Rindova et al., 2005), *Harvard Business Review* (Behrman & Levin, 1984), *Leadership Quarterly* (S. B. Wolff et al., 2002), *Computers & Education* (Ebner et al., 2010; Van Raaij & Schepers, 2008), *Journal of Business Ethics* (Arlow, 1991; Borkowski & Ugras, 1998; Davis & Welton, 1991), and *Journal of Business Venturing* (McMullan & Long, 1987). However, given the scholarly profiles of the authors of articles in the Relativist Code quadrant (only four of the articles authored by scholars with h-indices above 30), the progression is likely to be more toward Knowledge Code than Knower Code.

Knowledge Code

Given the numerous articles and dominant positions of the two areas—entrepreneurship education and distance education/online teaching and learning—in the top 100 listing, it should not be surprising that the Knowledge Code quadrant is composed primarily of articles from these two areas. However, there are differences in the timing of publication patterns in these two areas. Entrepreneurship education has a broader time span of article publication, running from 1988 to 2011. Because most of the entrepreneurship education articles in this quadrant cited other entrepreneurship education articles in the top 100, but only around half were cited themselves by other articles in all BME topical areas, and there was a mix of U.S.-based and non-U.S.-based scholars in those articles within this category, the articles in this area reflect the multicontinental perspectives from which entrepreneurship research, and, by extension, entrepreneurship education research, emerged (Sexton & Landstrom, 2000). Given the many different authors across so many locations in this topical area, it is not surprising that this topical area has developed on the basis of its many knowledge strands, which then propelled some of its work to the Elite Code quadrant over time.

By contrast, the distance education/online teaching and learning topical area in this quadrant, collectively, has a more recent history, with the oldest article being published in 1999. Because all but two of the articles from this topical area in this quadrant cited articles in the top 100, and more specifically, older articles in the same topical area, there is a pattern of more recent articles building on the work of earlier articles in the area. This consistent building effort on important earlier works has the potential to move earlier works into Elite Code status.

Elite Code

Again, given the concentration of the two major topical areas—entrepreneurship education and distance education/online teaching and learning—in the top 100, it may not be surprising that 17 of the 19 articles in this quadrant come from these two topical areas. However, as with the Knowledge Code quadrant, we see the same types of differences in the composition of articles between these two major topical areas. Entrepreneurship education article publication dates in this quadrant range from 1987 to 2010, whereas the distance education/online teaching and learning articles in this quadrant were published mostly during the early- to mid-1990s, with the latest published in 2001. Another noteworthy observation regarding the distance education/online teaching and learning articles in this quadrant is that none of these authors (with the exceptions of Joseph Valacich and Gabriele Piccoli) presently are active in BME research. Of the remaining articles in the Elite Code quadrant that are in the topical area of business school critique, Jeffrey Pfeffer (Pfeffer & Fong, 2002, 2004) with his author h-index of 103, may be a category unto himself.

Knower Code

Although the smallest of the quadrants, Knower Code articles represent the field's contributions from household names in various business research fields. Furthermore, with the exception of Alan R. Dennis (Trieschmann et al., 2000), these contributors are associated exclusively with the management discipline. Except for characteristics/critiques of business schools, none of the topics in this quadrant is represented by more than one article (although McCabe et al., 2006, also addressed graduate management education). This distribution of articles and topics suggests that rather than leading to fully developed streams that could attract and develop new scholars, topical areas in this quadrant may be specialty secondary research interests of these high-profile scholars and possibly remain as niche research areas. We further investigate possible paths of article progression toward Elite Code in our Discussion section.

Discussion

Topic Area Progression

The pattern of article distribution from both major topical areas in our LCT quadrants (entrepreneurship education and distance learning/online teaching and learning) suggests that BME research is likely to have articles progressing from Relativist Code to Knowledge Code, and then to Elite Code rather than from Knower Code to Elite Code. Initial scholars enter the topical area from other disciplines and provide the foundational works, and then other scholars conduct research on the topical area and build on these ideas, with foundational pieces moving toward Elite Code as they are cited by other works over time.

Although the two primary topical areas demonstrate characteristics of this trajectory, entrepreneurship education and distance education/online teaching and learning education also have distinctive differences in their progression toward Elite Code status. Entrepreneurship education Elite Code articles are composed of a combination of foundational articles from scholars who have extensive histories of publishing in entrepreneurship education (Gibb, Oosterbeek, Vesper), with later articles coming from scholars who built their initial reputations studying entrepreneurship as a phenomenon and then either leveraged this status to write about entrepreneurship education and/or migrated to studying it later in their career (Kuratko, Shepherd). In contrast, distance education/online teaching and learning grew from foundational pieces of scholars who initially concurrently pursued educational research and research in a discipline (predominantly information systems), and then, for the most part, left educational research to other scholars who have produced work that presently resides in the Knowledge Code area. We see these differences in topical area development to contain fascinating questions for future scholars who could dig deeper on how other BME topical areas might leverage this development pattern for collective progression of the field.

One lesson that these two major topical areas may provide is that scholars need to do a better job of building on their areas' key works if they are to progress toward Knowledge Code and eventually to Elite Code status. As Table 2 shows, in contrast to entrepreneurship education and distance learning/online teaching and learning education, only two of the topical areas in the Relativist Code quadrant contain articles that cite other articles in their own area more than once. Business student ethics might show signs of this movement, but the most recent article in the area (Cohen et al., 2001) also happens to be the one that has moved into the Knowledge Code quadrant. This suggests that Bedeian's (2004) call for scholars to become further aware of their fields' intellectual histories also extends to those who do work in BME research.

That said, a concern for future development of BME research is the near complete insularity of citation activity within its two major areas. As Table 2

shows, 97.9% of the citations to articles in the top 100 made by articles in these two topical areas were of articles in their own topical area, and no articles from outside these two areas cited their work. For that matter, with the possible exceptions of the characteristics/critiques of business schools area, graduate management education, and competency/skill development areas, cross-fertilization of ideas across topical areas is essentially nonexistent. Overall, although the field has areas that are moving toward Elite Code status, the overall field still is somewhat immature in its development in that citation activities and recognition and building on a common educational foundation still are lacking across articles in different areas. We therefore encourage future BME scholars to use these findings and future compilations of top 100 articles to identify foundational works that allow them both to extend knowledge in their particular topical area and propel the overall field toward maturity.

Limitations

Of course, all studies are subject to limitations, of which this one has several. First, because it is a relatively new framework, we had a limited pool of studies from which we could seek guidance for operationalizing LCT. We hope that our efforts inspire others in BME research to consider other new approaches that could incorporate the LCT framework into their work. Second, because we focused our attention on highly cited articles, our categorization scheme is sample size and topical area size dependent. Therefore, additional studies using larger article samples and more stable ways to operationalize Knowledge Code and Elite Code still are needed. Third, the start of our sampling period (1970) is recent relative to what may be used for discipline-based business research. However, only two BME-dedicated journals existed before 1970: (a) the *Journal of Economic Education*, which was first published in 1969 and (b) *JEB*, which was first published in 1928 as the *Journal of Business Education*. We examined JEB's pre-1970 publication history and found no articles that would have made this listing. Therefore, although it is possible that there are some pre-1970 BME articles that may be highly cited, we suspect that such pieces likely already would have been "household names" to our fields. Fourth, our schema does not allow us to determine author and article status at the time of initial publication. Although this is less of an issue for the works classified as Knower Code, we cannot definitively say that authors of topical areas progressing from Knowledge Code to Elite Code would have had their reputations placed within Knowledge Code if their topical area did not have a reasonable number of articles that supported a healthy cluster of ideas within that area. Finally, although we developed our article search approach in a manner that is consistent with other highly cited article studies, it is possible that our search protocol may have missed some highly cited BME articles. We see each of these limitations as prime opportunities for future scholars to extend our work.

Implications

Why Should This Issue Matter to JME? Given *JME*'s long-standing history as a journal of management pedagogy (Bilimoria, 2000; Schmidt-Wilk, 2009), some may question why indicators of research impact and the development of research topical areas should be part of the journal's domain. Our study shows that in spite of institutional barriers such as not being listed on the SSCI, six articles in our top 100 listing are from *JME*, making *JME* the fourth-highest journal overall and the second-highest purely educational research journal represented in BME research citations. This suggests that regardless of whether or not it was sought after, or even desired, *JME* is very much part of the conversation on BME research scholarly impact. Therefore, rather than being unaware of this issue, *JME* should move to leverage this position of relative influence in both advancing this emerging field and considering its important position within this field as measured by citation indices.

We also have further observations regarding the six articles that *JME* has within our top 100 listing. First, three articles (Arbaugh, 2000a, 2000b; Marks et al., 2005) focus on online learning; two articles (Bacon et al., 1999; Fiechtner & Davis, 1984) focus on teams; and the last article (Cunliffe, 2004) focuses on critical management education. Thus, although perhaps already common knowledge within the *JME* community, and maybe even outside the community, these articles explore core topics on which *JME* has built its reputation from a research perspective (as opposed to its applied classroom exercises articles).

Additionally, three articles (Bacon et al., 1999; Cunliffe, 2004; Fiechtner & Davis, 1984) are placed in the Relativist Code quadrant, and the other three (Arbaugh, 2000a, 2000b; Marks et al., 2005) are in the Knowledge Code quadrant (with none in either the Knower Code or Elite Code quadrants), thus providing further evidence of *JME*'s history of publishing articles on topics before they have captured "Elite Code" status that reflect recognition by the community of the important knowledge and author stature position of these articles. The LCT quadrant placement of *JME*'s articles, and the fact that all these articles have been published for a while (Marks et al., 2005, is the newest), provides additional affirmation of *JME*'s reputation as a leading edge journal that is willing to tackle new topics before anyone else. It also demonstrates the success of its long-standing editorial commitment to publish works that will "have a significant impact on thinking and/or practice in management education" (https://us.sagepub.com/en-us/nam/journal-of-management-education/journal200931#aims-and-scope).

Thus, given *JME*'s commitment to, and history of, innovation, it will be interesting to see which articles that have appeared in *JME* in recent years, or are appearing now, will become the influential BME works and topics of tomorrow. Our findings also add evidence to the long-standing debate within

the *JME* community regarding the appropriateness of ranking systems like SSCI, which have a heavy bias favoring recent publication citations. Our findings demonstrate that *JME*'s influence is significant, but its leading edge philosophy often means that its impact emerges over the long term. Thus, the *JME* community will have to decide how best to leverage its potential for continuing important long-term impact.

How Might We Use LCT for Framing Future Studies? We are particularly pleased to have introduced LCT as a lens for explaining the development of BME research. Although there has been limited work in using LCT to categorize concepts taught in the area (Doherty, 2010), we believe this framework is a powerful tool for capturing development in both educational research and educational practice. In addition to this more focused study of specific research topical areas, we encourage educators to consider LCT's usefulness as a tool to explore other areas, such as helping students progress toward higher level thinking (Kilpert & Shay, 2013), strengthening the knowledge base of current curricula (McNamara, 2010), and integrating multidisciplinary curricula (K. Wolff & Luckett, 2013). In short, this could be a framework that helps further dialogue between educational scholars and educational practitioners.

Is There a Career Path for BME Scholars? A long-standing objection against scholars in business schools pursuing educational research is that it impedes one's career prospects (Arbaugh et al., 2013; Schmidt-Wilk, 2007). Specifically, whether one can make a research career in BME that substantially affects the field in terms of citable work has been seen as questionable at best by most establishments. However, our results show that producing a research record of scholarly impact certainly is possible. Our preliminary analysis shows two possible career paths. One path is where the scholar enters the field relatively early in his or her academic career and gradually and intentionally makes this research his or her primary or exclusive focus (Arbaugh, 2010). This first path is still a challenge as most schools do have some expectations that recruited scholars produce work in their hired disciplinary areas. The other path is where the scholar is an active contributor in both educational research and his or her discipline of interest, either concurrently (e.g., Ann Cunliffe in leadership or Franz Kellermanns in family business), or by first establishing a reputation in his or her discipline and then cultivating an interest in educational research (Benson Honig and Dean Shepherd—both in entrepreneurship). Although the relative desirability and influence of these models warrants further research, and that the answer to such questions likely depends on

factors such as institutional preference, scholar interests, and other institutional factors, the fact that the scholars noted here reside at both research-intensive and at teaching-intensive institutions suggests that the BME research career path is viable, and that it does not have to be an institution-type-specific decision.

Finally, our initial LCT operationalization may be providing a somewhat predictive guide to the future of various research areas, which can help researchers determine their own priorities and foci as they consider their career paths. As noted earlier, the research areas appear to loosely follow a developmental progression pattern of Relativist Code, to Knowledge Code, and then to Elite Code. Knowing this fundamental trajectory can help both the discipline and its scholars decide what to focus on in the future, and help us understand what may constitute fads, fashions, and folderol (Dunnette, 1966) and what may constitute legitimate research areas. Thus, early-career scholars who are willing to take risks may be attracted to topics in the Relativist Code quadrant, given potential opportunities to establish their own reputations; and other early-career scholars may avoid these topics due to concerns about being able to effectively build more traditional research streams. Perhaps, as Kuhn (1962) notes, research areas that are safer, but composed mainly of the "mop-up work" are characterized by less cutting-edge research. The decision on where to put one's effort will be affected by how the field develops and draws attention in the coming years.

Conclusion

This study shows the potential for using citation counts and LCT to identify the development and progression of emerging research topics in BME research. The identification of articles possessing Knower Code, Knowledge Code, and Elite Code qualities suggest surprisingly high complexity of knowledge development patterns, given the relatively young age of the field. These patterns are meaningful and point to the need of and possibilities for a wider community of scholars in developing any topical area, with such scholars needing to look beyond their particular area in order to advance the entire field. We found researchers who have developed reputations as BME scholars, either by focusing exclusively on educational research or by pursuing it in conjunction with or as a secondary interest along with their other research (mostly in the management discipline). Based on this analysis, we heartily encourage researchers who are contemplating the pursuit of this research path to take advantage of opportunities that are presented here in these still emerging topical areas so that they, too, might one day find their names included in future studies of the development of this field.

Appendix

Citation Count, Cross-Reference, and Author h-Index for the 100 Most Cited Articles in Business and Management Education, 1970 to 2014.

Author(s)	Topic	Journal	Number of citations	Articles cited	Article cited by	Author/high author h-index score
1. Ghoshal (2005)	Characteristics/critiques of business schools	Academy of Management Learning & Education	2,569	3	4	65
2. Kolb and Kolb (2005)	Experiential learning	Academy of Management Learning & Education	1,758	3	0	45
3. Bennis and O'Toole (2005)	Characteristics/critiques of business schools	Harvard Business Review	1,636	0	3	72
4. Pfeffer and Fong (2002)	Characteristics/critiques of business schools	Academy of Management Learning & Education	1,433	0	4	103
5. Alavi (1994)	Distance education/online teaching and learning	MIS Quarterly	1,238	1	13	38
6. Piccoli et al. (2001)	Distance education/online teaching and learning	MIS Quarterly	1,154	6	3	43
7. Leidner and Jarvenpaa (1995)	Distance education/online teaching and learning	MIS Quarterly	1,087	3	11	54
8. Kuratko (2005)	Entrepreneurship education	Entrepreneurship Theory and Practice	1,010	10	1	48
9. Zhao et al. (2005)	Entrepreneurship education	Journal of Applied Psychology	905	1	0	28
10. Katz (2003)	Entrepreneurship education	Journal of Business Venturing	835	3	4	27
11. Williams and Jacobs (2004)	Social media in management education	Australasian Journal of Educational Technology	766	0	0	12
12. Gorman et al. (1997)	Entrepreneurship education	International Small Business Journal	760	6	9	14

(continued)

Author(s)	Topic	Journal	Number of citations	Articles cited	Article cited by	Author/high author h-index score
13. Webster and Hackley (1997)	Distance education/online teaching and learning	*Academy of Management Journal*	739	3	6	44
14. Rindova et al. (2005)	Characteristics/critiques of business schools	*Academy of Management Journal*	669	2	0	31
15. Alavi and Leidner (2001)	Distance education/online teaching and learning	*Information Systems Research*	607	5	2	38
16. Gibb (1993)	Entrepreneurship education	*International Small Business Journal*	588	0	4	34
17. Volery and Lord (2000)	Distance education/online teaching and learning	*International Journal of Educational Management*	563	3	0	15
18. Alavi et al. (1995)	Distance education/online teaching and learning	*MIS Quarterly*	535	1	10	58
19. Vesper and Gartner (1997)	Entrepreneurship education	*Journal of Business Venturing*	520	1	5	41
20. Baldwin et al. (1997)	Student teams	*Academy of Management Journal*	491	0	2	27
21. Arbaugh (2000a)	Distance education/online teaching and learning	*Journal of Management Education*	485	6	5	33
22. Keys and Wolfe (1990)	Simulations in business and management education	*Journal of Management*	459	1	0	26
23. Solomon et al. (2002)	Entrepreneurship education	*International Journal of Entrepreneurship Education*	453	4	4	16
24. Kirby (2004)	Entrepreneurship education	*Education + Training*	452	5	0	22
25. Fiet (2001a)	Entrepreneurship education	*Journal of Business Venturing*	450	0	4	24

(continued)

Appendix (continued)

Author(s)	Topic	Journal	Number of citations	Articles cited	Article cited by	Author/high author h-index score
26. Honig (2004)	Entrepreneurship education	*Academy of Management Learning & Education*	434	4	3	23
27. Chen and Volpe (1998)	Finance education	*Financial Services Review*	433	0	0	15
28. Fiet (2001b)	Entrepreneurship education	*Journal of Business Venturing*	430	0	2	24
29. Van Raaij and Schepers (2008)	Distance education/online teaching and learning	*Computers & Education*	412	1	0	14
30. Pittaway and Cope (2007)	Entrepreneurship education	*International Small Business Journal*	408	7	0	19
31. Pfeffer and Fong (2004)	Characteristics/critiques of business schools	*Journal of Management Studies*	404	5	1	103
32. Kayes (2002)	Experiential learning	*Academy of Management Learning & Education*	395	1	2	16
33. Arbaugh (2001)	Distance education/online teaching and learning	*Business Communication Quarterly*	390	4	1	33
34. McCabe et al. (2006)	Business student ethics/ graduate management education	*Academy of Management Learning & Education*	386	1	0	69
35. Alavi et al. (1997)	Distance education/online teaching and learning	*Academy of Management Journal*	385	4	5	38
36. Mintzberg and Gosling (2002)	Graduate management education/competency/ skill development	*Academy of Management Learning & Education*	375	0	4	106

Appendix (continued)

Author(s)	Topic	Journal	Number of citations	Articles cited	Article cited by	Author/high author h-index score
37. McMullan and Long (1987)	Entrepreneurship education	Journal of Business Venturing	364	0	6	13
38. Henry et al. (2005)	Entrepreneurship education	Education + Training	360	7	0	20
39. Reynolds (1998)	Critical management education	Management Learning	355	0	0	26
40. Boyatzis et al. (2002)	Competency/skill development	Academy of Management Learning & Education	354	0	1	56
41. Matten and Moon (2004)	CSR education	Journal of Business Ethics	346	0	1	36
42. Ebner et al. (2010)	Social media in management education	Computers & Education	345	0	0	28
43. Oldfield and Baron (2000)	Service quality in management education	Quality Assurance in Education	333	0	0	32
44. Borkowski and Ugras (1998)	Business student ethics	Journal of Business Ethics	326	2	0	16
45. DeTienne and Chandler (2004)	Entrepreneurship education	Academy of Management Learning & Education	319	3	4	26
46. Faria (1998)	Business simulations	Simulation & Gaming	319	0	0	24
47. Cunliffe (2004)	Critical management education/competency/ Skill development	Journal of Management Education	315	0	0	25
48. Dunne and Martin (2006)	Design thinking in management education	Academy of Management Learning & Education	313	3	0	28

(continued)

Appendix (continued)

Author(s)	Topic	Journal	Number of citations	Articles cited	Article cited by	Author/high author h-index score
49. Stacey (1999)	Distance education/online teaching and learning	Journal of Distance Education	312	0	0	20
50. Gartner and Vesper (1994)	Entrepreneurship education	Journal of Business Venturing	310	1	7	41
51. Fiechtner and Davis (1984)	Student teams	Journal of Management Education	309	0	0	1
52. Oosterbeek et al. (2010)	Entrepreneurship education	European Economic Review	308	1	0	38
53. Gibb (1987)	Entrepreneurship education	Journal of European Industrial Training	305	0	3	34
54. Kolvereid and Moen (1997)	Entrepreneurship education	Journal of European Industrial Training	302	0	0	20
55. Eom et al. (2006)	Distance education/online teaching and learning	Decision Sciences Journal of Innovative Education	301	4	0	23
56. Jack and Anderson (1999)	Entrepreneurship education	International Journal of Entrepreneurial Behavior & Research	301	3	1	37
57. Nonis and Swift (2001)	Business student ethics	Journal of Education for Business	296	1	0	17
58. Hills (1988)	Entrepreneurship education	Journal of Business Venturing	286	0	7	28
59. Eskew and Faley (1988)	Accounting education	Accounting Review	286	0	0	16
60. Leidner and Jarvenpaa (1993)	Distance education/online teaching and learning	Information Systems Research	284	0	8	54

(continued)

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Appendix (continued)

Author(s)	Topic	Journal	Number of citations	Articles cited	Article cited by	Author/high author h-index score
61. Martins and Kellermanns (2004)	Distance education/online teaching and learning	Academy of Management Learning & Education	283	4	2	30
62. Arbaugh (2000b)	Distance education/online teaching and learning	Journal of Management Education	283	6	3	33
63. Gault et al. (2000)	Business internships	Journal of Marketing Education	282	0	0	12
64. S. B. Wolff et al. (2002)	Student teams	Leadership Quarterly	281	0	0	16
65. Arbaugh and Duray (2002)	Distance education/online teaching and learning	Management Learning	280	6	2	33
66. Grey (2004)	Critical management education	Academy of Management Learning & Education	279	3	0	38
67. Arlow (1991)	Business student ethics	Journal of Business Ethics	271	0	1	9
68. Trieschmann et al. (2000)	Characteristics/critiques of business schools	Academy of Management Journal	270	0	3	53
69. Freeman (1995)	Student teams	Assessment & Evaluation in Higher Education	270	0	0	17
70. Adler (2006)	Arts in management education	Academy of Management Learning & Education	269	1	0	41
71. Sims (1993)	Business student ethics	Journal of Education for Business	269	0	1	21

(continued)

Appendix (continued)

Author(s)	Topic	Journal	Number of citations	Articles cited	Article cited by	Author/high author h-index score
72. Friga, Bettis, and Sullivan (2003)	Characteristics/critiques of business schools/graduate management education	*Academy of Management Learning & Education*	267	1	2	28
73. Lu et al. (2003)	Distance education/online teaching and learning	*Information & Management*	251	2	0	17
74. Neck and Greene (2011)	Entrepreneurship education	*Journal of Small Business Management*	250	1	0	26
75. Cohen et al. (2001)	Business student ethics	*Journal of Business Ethics*	250	0	0	28
76. Arbaugh (2000c)	Distance education/online teaching and learning	*Business Communication Quarterly*	249	6	2	33
77. Armstrong (1987)	Accounting education/business student ethics	*Journal of Accounting Education*	248	0	1	10
78. Christensen et al. (2007)	Business student ethics/CSR education	*Journal of Business Ethics*	246	2	0	18
79. Davis and Welton (1991)	Business student ethics	*Journal of Business Ethics*	241	0	1	23
80. De Vita (2001)	Experiential learning/international business education	*Innovations in Education and Teaching International*	240	1	0	16
81. Navarro (2008)	Graduate management education	*Academy of Management Learning & Education*	239	0	0	24
82. Drennan et al. (2005)	Distance education/online teaching and learning	*Journal of Educational Research*	239	0	0	18

(continued)

Appendix (continued)

Author(s)	Topic	Journal	Number of citations	Articles cited	Article cited by	Author/high author h-index score
83. Shaub (1994)	Accounting education/business student ethics	Journal of Accounting Education	239	1	0	12
84. Doran et al. (1991)	Accounting education	Issues in Accounting Education	237	0	0	7
85. Holman et al. (1997)	Experiential learning	Management Learning	236	0	2	35
86. Johannisson (1991)	Entrepreneurship education	Entrepreneurship & Regional Development	234	1	4	36
87. Shepherd (2004)	Entrepreneurship education	Academy of Management Learning & Education	231	0	3	64
88. Jones and English (2004)	Entrepreneurship education	Education + Training	231	0	0	25
89. Gioia and Corley (2002)	Characteristics/critiques of business schools	Academy of Management Learning & Education	231	1	2	48
90. Rousseau and McCarthy (2007)	Evidence-based management education	Academy of Management Learning & Education	230	2	0	78
91. Bacon et al. (1999)	Student teams	Journal of Management Education	230	1	0	15
92. Ladd and Ruby (1999)	Learning styles/international business education	Journal of Education for Business	230	0	1	7
93. Marks et al. (2005)	Distance education/online teaching and learning	Journal of Management Education	229	10	0	33

(continued)

Appendix (continued)

Author(s)	Topic	Journal	Number of citations	Articles cited	Article cited by	Author/high author h-index score
94. Bocchi et al. (2004)	Distance education/online teaching and learning	*Journal of Education for Business*	229	1	0	20
95. Argyris (1980)	Case method	*Academy of Management Review*	229	0	1	87
96. Laukkanen (2000)	Entrepreneurship education	*Entrepreneurship & Regional Development*	227	6	1	16
97. Cohen and Hanno (1993)	Accounting education	*Issues in Accounting Education*	227	0	0	28
98. Lysonski and Gaidis (1991)	Business student ethics	*Journal of Business Ethics*	227	0	0	26
99. Behrman and Levin (1984)	Characteristics/critiques of business schools	*Harvard Business Review*	226	0	0	19
100. Bechard and Gregoire (2005)	Entrepreneurship education	*Academy of Management Learning & Education*	224	10	0	12

Note. CSR = corporate social responsibility. Full references of the articles in the appendix are available from the authors on request.
Source. Harzing's (2013) *Publish or Perish* and Google Scholar, July 30, 2015.

Authors' Note

Declaration of Conflicting Interests

Funding

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