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Content Trends in Sustainable Business Education: An Analysis of Introductory Courses in the U.S.

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CONTENT TRENDS IN SUSTAINABLE BUSINESS EDUCATION: AN ANALYSIS OF INTRODUCTORY COURSES IN THE U.S.

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Structured Abstract:

Purpose. This study sought to identify the content in introductory business sustainability courses in the U.S. to determine most frequently assigned reading material and its sustainability orientation.

Design/Methodology/Approach. Eighty-one introductory sustainable business course syllabi reading lists were analyzed from 51 U.S. colleges and universities. The study utilized frequency counts for authors and readings and R analysis of key words to classify readings along the sustainability spectrum.

Findings. The study reveals the most frequently assigned authors and readings in U.S. sustainable business courses (by program type) and places them along the sustainability spectrum from weak to strong. Fifty-five percent of the top readings assigned in our sample advocate a weak sustainability paradigm. Twenty-nine percent of the top readings in our sample advocate a strong sustainability paradigm.

Research Limitations/Implications. This study focused on reading lists of introductory courses in the U.S.; cases, videos, and supplemental materials were excluded and the study does not analyze non-U.S. courses.

Practical implications. The findings of this study can inform instructors of the most commonly assigned authors and readings and identify readings that align with weak sustainability and strong sustainability. Instructors are now able to select sustainable business readings consistent with peers and which advance a weak or strong sustainability orientation.

Originality/value. This is the first research to identify the most commonly assigned authors and readings to aid in course planning. This is also the first research to guide instructors in identifying which readings represent weak versus strong sustainability.

Keywords:

Sustainable business, sustainability management, weak sustainability, strong sustainability, curriculum, management education, business education

Article Classification:

Research

CONTENT TRENDS IN SUSTAINABLE BUSINESS EDUCATION:

AN ANALYSIS OF INTRODUCTORY COURSES IN THE U.S.

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INTRODUCTION

In a recent "Sustainability across the Curriculum" workshop sponsored by the Association for the Advancement of Sustainability in Higher Education, the participants represented a cross-disciplinary collection of faculty from across any campus. The critical question on each participant's mind was *what* to teach. Participants yearned for guidance on specific content.

This observation also holds true in teaching sustainable business management. In the authors' experiences, instructors are developing unique content to inform students, but there is no agreement about what should be covered. Unlike an introductory course in mature business disciplines, there is no general agreement on resources for teaching sustainability in business. Thus the question remains, *what* should be taught to students to educate them on sustainable business topics? That is, what texts and readings are considered central to a comprehensive introductory education in sustainable business and what sustainability message do they convey? This study sought to answer those questions by focusing on reading content within a broad sample of U.S. sustainable business courses to see if there is any emerging consensus among instructors on reading content that every student studying sustainable business should be assigned. The study also categorized readings along the sustainability spectrum to determine if they were most closely aligned with weak sustainability (Solow, 1974; Solow, 1993) or strong sustainability (Daly, 1973; Daly, 1991).

In this manuscript, the authors begin by defining the concept of sustainability, the sustainability spectrum, and the concept's application to business. The manuscript then discusses sustainability in business management education related to pedagogy, content, and learning outcomes. The authors present their methodology used to answer the two research questions: (1) what readings are being assigned in sustainable business courses in the United States and (2) what sustainability worldview do they represent? Finally, the findings are discussed as well as the study's limitations and implications.

SUSTAINABILITY DEFINED

Sustainability is a normative view of how we interact with nature, others, and future generations in our efforts to endure. Sustainability is defined as the integration of economic, environmental, and social concerns (Elkington, 1994, 1997). Mihelcic et al. (2003) suggest that sustainability is a meta-discipline that combines and integrates knowledge from multiple disciplines in order to achieve a common goal of economic, environmental, and social objectives. Brinkman (2014) goes on to suggest that sustainability is the first postmodern discipline of our time:

> In postmodern theory, a process of deconstruction is often used to better understand the ideological underpinnings of an idea. In deconstructing the idea of sustainability, we can find that there are so many different ideological, regional, and contextual underpinnings that it becomes very difficult to define with a modernist disciplinary sensibility (Brinkman, 2014, para. 9). Because of the variety of approaches, practices, and viewpoints, we do not have clear-cut definitions of the field that fall nicely within modernist disciplinary structures. This is what makes the field of sustainability the first truly postmodern discipline to emerge in our era (Brinkman, 2014, para. 13)

Sustainability Spectrum

Sustainability ideologies vary across a spectrum ranging from weak sustainability (Solow, 1974, 1993) to strong sustainability (Daly, 1973, 1991). The sustainability spectrum represents a variety of mindsets reflecting our interpretation of sustainability. These mindsets are mental models that guide our thoughts and actions (Senge et al., 2008). Understanding the extremes of the sustainability spectrum allows us to understand how different, and often conflicting, interpretations of sustainability co-exist.

The weak and strong sustainability worldviews differ in many aspects. Substitutability and intergenerational transfer are the most contentious points of debate between the opposing worldviews. The weak sustainability worldview allows for the substitution of natural capital with manufactured capital so long as the total sum of capital remains intact for future generations (Hartwick, 1978; Pearce, 1993: Solow, 1974, 1986, 1993). The strong sustainability worldview advocates for preservation of natural capital stocks (without substitution of manufactured capital) for current and future generations (Daly, 1973, 1991; Pearce, 1993).

Other points of differentiation between the two opposing worldviews show that weak sustainability places monetary value on natural resources to determine the economic value in the marketplace, believes infinite economic growth is necessary, makes decisions through cost-benefit analysis, and measures progress by gross domestic product (Hartwick, 1978; Pearce, 1993: Solow, 1974, 1986, 1993). By contrast, strong sustainability views natural capital as priceless, believes that infinite economic growth is problematic and that a steady state economy is more desirable, makes decisions through science and ethics, and measures progress by non-economic factors, such as the environment and quality of life (Daly, 1973, 1991; Pearce, 1993).

The sustainability spectrum allows for the co-existence of multiple interpretations along the spectrum. Furthermore, the existence of the sustainability spectrum allows for a range of behaviors by individual and business actors pursuing sustainability.

SUSTAINABILITY IN BUSINESS

There are many related concepts used interchangeably in the business literature (i.e. corporate social responsibility, corporate sustainability, corporate sustainability and responsibility) which leads to multiple interpretations of sustainability as it applies to business. Sustainability generally addresses justice and equity related to the economy, environment, and society. A defining characteristic of business sustainability is that all definitions share three common core concepts: generation of both company and societal value, balance of competing interests, and accountability for corporate activities (Schwartz and Carroll, 2008). Schwartz and Carroll (2008) suggest that, taken together, the three core concepts of value, balance, and accountability reflect the normative role of business in society. Thus, sustainable business is the pursuit of economic, environmental, and social justice and equity while providing value, balance, and accountability.

Recognizing that businesses have varying mindsets regarding sustainability, Landrum (2015a; 2015b) has proposed a developmental model of stages of corporate sustainability that follows the sustainability spectrum. It could be argued that these are not progressive developmental stages of corporate sustainability but instead represent orientations, paradigms, or mindsets toward corporate sustainability. Landrum's (2015a; 2015b) work develops established models (e.g., Ainsbury and Grayson, 2014; Dunphy et al., 2003; Mirvis and Googins, 2006; Senge et al., 2008; Visser, 2010) further by integrating them into a new unified model corresponding to the sustainability spectrum. By placing stages of corporate sustainability along

the sustainability spectrum, one can see the variety of mindsets at work in the business interpretations and practice of sustainability. The stages can be summarized as follows.

1. Compliance. In Stage 1, corporations' sustainability efforts are focused on staying within regulatory boundaries. This stage corresponds with very weak sustainability on the sustainability spectrum.
2. Business-Centered. In Stage 2, corporations' sustainability efforts are focused on the business case to achieve strategic competitiveness for the firm. This stage corresponds with weak sustainability.
3. Systemic. In Stage 3, corporations' sustainability efforts are focused on working collaboratively for systemic change. This stage corresponds with intermediate sustainability.
4. Regenerative. In Stage 4, corporations' sustainability efforts are focused on repairing, restoring, and regenerating economic, environmental, and social systems. This stage corresponds with strong sustainability.
5. Coevolutionary. In Stage 5, corporations' sustainability efforts are focused on creating harmonious integrated partnerships with natural systems in an environment of coexistence and coevolution. This stage corresponds with very strong sustainability on the sustainability spectrum.

Many researchers argue that business and industry subscribe to weak sustainability as the dominant paradigm (Davies, 2013; Ihlen and Roper, 2014; Spash, 2013). Regardless of a business's orientation toward sustainability, there is evidence to show that sustainability is gaining traction in the boardroom. Thousands of companies issue sustainability reports, more than 50% of executives consider sustainability "very" or "extremely" important, and the number

of companies participating in the Global Reporting Initiative (GRI) continues to grow annually (Boulter and Goodchild, 2011). Greenbiz's 2013 *State of the Profession* report found that the number of companies with at least one full-time position focused on sustainability doubled from 2003-2008 and doubled again from 2008-2010 (Greenbiz Group, 2013). Greenbiz's 2014 *State of Green Business* report finds that 33% of companies have a companywide leadership position in sustainability, such as Chief Sustainability Officer, and 32% of companies anticipate more future investment in sustainability in spite of economic challenges (Greenbiz Group, 2014). It is not surprising that companies are implementing sustainability since it can reduce recruitment costs, costs of attrition, manufacturing expenses, expenses at commercial sites, and risk while simultaneously increasing employee productivity, revenue, and market share (Willard, 2004).

SUSTAINABILITY IN MANAGEMENT EDUCATION

In higher education, the *Chronicle for Higher Education* listed "sustainability" as one of the top five emerging majors in 2009 (Fischer and Glenn, 2009) and it continues to rank among the hottest majors that lead to jobs (Gandel, 2013). The interest in sustainability education has continued to grow. The Association for the Advancement of Sustainability in Higher Education database currently contains 1452 sustainability-focused academic programs at 476 campuses in 6 countries.

"Chief executives of the future will require an understanding of the ways in which whole systems interconnect and have an impact on entire value chains if they are to respond to resource constraints and climate change appropriately" (Bristow, 2011, para. 1). It is clear that education plays a critical role in advancing sustainability, particularly in business (Bradfield, 2009; Gray and Milne, 2002; Landrum and Edwards, 2011; Parliamentary Commissioner for the Environment, 2004; UNESCO, 1997).

Even though interest is growing, business education has been criticized for failing to genuinely integrate sustainability into the curriculum (*BizEd*, 2009; Hart, 2009; Landrum and Edwards, 2011). Hart (2009) states that "…(many) business schools do not even seem to be aware that we are operating in a business world that has already changed and a stressed environmental climate that *has* to change" (p. 27). There exists pressure from students (Net Impact, 2009-2014), academics (Hart, 2009; Peoples, 2009; Walck, 2009), organizations (such as the United Nations), and practitioners (Bristow, 2011; Landrum and Edwards, 2011) for more integration of sustainability into business school knowledge.

The Association for the Advancement of Collegiate Schools of Business (AACSB), the business school accrediting body, has responded to this call. In 2013, the accrediting standards were updated to state that "society is increasingly demanding that companies become more accountable for their actions, exhibit a greater sense of social responsibility, and embrace more sustainable practices" (AACSB, 2015, p. 2) and that business schools must respond to these changes. AACSB now identifies sustainability as a knowledge area (Standard 9) in the 2013 accreditation standards for business programs (AACSB, 2015).

Business schools have begun offering certificates, minors, majors, tracks, concentrations, degrees, and executive education in a topic that was virtually unknown 15 years ago. This interest in sustainable business is paralleled in Net Impact's annual *Business as UNusual* guide, a survey of student Net Impact chapters around the globe that assesses their business program's emphasis on social and environmental sustainability. The annual guide has grown from 39 schools in its first edition (Net Impact, 2006) to 93 schools in its most recent edition (Net Impact, 2014). While this growth more precisely reflects the increasing number of Net Impact chapters at business schools worldwide, it is assumed that this also reflects a growth of interest in

sustainability among business students. Likewise, the first *Beyond Grey Pinstripes* publication showed that 82 business schools reported coverage of social and environmental issues in the curriculum (Aspen Institute, 2001, 2011, n.d.) while the last report included a review of over 6,000 course descriptions and over 6,000 research abstracts from 149 participating schools (Aspen Institute, 2011). In addition, since the Principles for Responsible Management Education were launched in 2007, there are now over 500 university signatories.

Teaching Sustainable Business Management

In spite of the AACSB mandate to include sustainability as a knowledge area, there are no standards regarding content. This results in individualized and unique approaches toward sustainability education in the business school curriculum. This variety is demonstrated in special issues of *Journal of Management Education* (Egri and Rogers, 2003; Rusinko and Sama, 2009), *Business Strategy and the Environment* (Springett and Kearins, 2005), and *Academy of Management Learning and Education* (Starik et al., 2010). These special issues are devoted to incorporating sustainability into management education and the examples and recommendations are as varied as the authors. In addition, repositories of teaching materials are available through websites, such as CasePlace and the Association for the Advancement of Sustainability in Higher Education.

Pedagogy. There is some research on pedagogy and methodology for teaching sustainable business. For example, Godemann et al. (2011) reviewed the first 100 progress reports uploaded from signatories to the Principles for Responsible Management Education (PRME) and found that institutions primarily used traditional teaching methods. Others argue that an active learning (MacVaugh and Norton, 2011) or experiential approach (Alcaraz and Thiruvattal, 2010; Barber et al., 2014; Wiek et al., 2014), the use of a knowledge-skills-ability

framework (Stubbs, 2013), or a holistic approach (Shrivastava, 2010) are appropriate pedagogies.

Content. The content to be included in sustainability education is also a matter of debate. Content, of course, will depend upon the context in which the subject is presented. While it has been argued that sustainability should be embedded across the curriculum into every course and presented from a variety of perspectives (Stubbs and Cocklin, 2008), many schools have faced challenges in breaking down traditional academic silos (Bristow, 2011; Kurland et al., 2010; Schrand et al., 2013). Godemann et al. (2011) found that nearly half of the schools in their sample covered sustainability in an ethics, corporate social responsibility, or sustainability class and that few embedded sustainability across the entire curriculum.

In general, content that should be included, regardless of the context, might include systems thinking (Porter and Cordoba, 2009; Roome, 2005), critical theory (Kearins and Springett, 2003), and individual and systemic change (Parliamentary Commissioner for the Environment, 2004). In business management courses, it has been argued that content should include leadership, innovation, productivity, strategy, and finance (Willard, 2004). Because the field is new and evolving, it has been observed that it is common for faculty and students to learn the material together (Roome, 2005; Steketee, 2009).

Learning Outcomes. Finally, there has been some comment on what specific skills should generally be developed in sustainability education. It has been argued that successful sustainability education should foster communication skills, writing skills, and intrapreneurial skills (Bradfield, 2009). It has also been argued that content should teach students to give voice to their values (Gentile, 2010; Samuelson, 2009)

METHODOLOGY

Since education for sustainable business is still in its infancy, first, this study sought to identify if there is any consensus among faculty and schools on what reading material should be assigned in an introductory sustainable business course. Second, this study sought to understand if assigned readings were more closely aligned with strong or weak sustainability along the sustainability spectrum. To answer these research questions, it was determined that a review and compilation of reading lists of introductory sustainable business courses would answer the first question regarding reading content and a keyword analysis of the assigned readings would answer the second question regarding sustainability orientation.

The study boundaries included courses that met three criteria: (1) **entry-level courses** that (2) **focus on a triple orientation** (the combined environmental, economic, and social dimensions which jointly define sustainability [Elkington, 1994, 1997]) and that (3) focus on **sustainability as it applies to business**. Excluded from this survey were (1) advanced-level courses which assumed prior knowledge of sustainability, (2) courses that focused on only a single dimension of sustainability (i.e., only environmental or social issues), (3) general education sustainability courses that were not specific to the field of business, and (4) functional area specific courses (such as sustainability accounting or sustainable supply chains).

Data collection targeted business schools and began at the end of 2012 and concluded in mid-2013, focusing on the 5-year period 2008-2012. For context, the U.S. Department of Education reports 4706 post-secondary degree-granting institutions as of 2012 (U.S. Department of Education, 2015) with 3418 schools offering business-related degrees (U.S. Department of Education, 2016).

In order to identify introductory sustainable business courses for inclusion in this study, the authors turned to academic organizations, websites, publications, and resources known for an emphasis on sustainability. The Association for the Advancement of Sustainability in Higher Education (AASHE) website was reviewed in 2012 for every business program listed and the business course listings were identified. The Net Impact *2011 Business as UNusual Guide* was also used for the identification of schools and their associated websites were subsequently reviewed for course listings. In addition, syllabi from 2008-2012 were reviewed from the websites of AASHE Academic Commons, CasePlace.org, Beyond Grey Pinstripes, Page Prize for Sustainability Issues in Business Curricula, and GlobaLens. All website reviews were specifically seeking introductory sustainable business courses that met the three criteria for inclusion (entry level, triple orientation, and business focus). Lastly, voluntary participants were solicited through three of the Academy of Management's listservs: Social Issues in Management (SIM), Organizations and the Natural Environment (ONE), and Managing for Sustainability.

Through the review of websites, course listings, and voluntary submissions, it became apparent that many of the courses did not use the words introduction, foundations, or principles in the course title. Therefore, the review process relied heavily on course descriptions to refine the sample to courses that met the three criteria for inclusion. This study reviewed several hundred course descriptions and syllabi to reduce the collection to include only courses that met the inclusion criteria. The finalized list of courses in the study included 81 courses from 51 U.S. colleges and universities. The data collection efforts resulted in only 12 non-U.S. colleges and universities which were deemed to be an unrepresentative non-U.S. sample and were thus purged from the data set.

The next task was to obtain reading lists for the 81 U.S. courses. The readings lists were reviewed and readings that had no consensus (defined as those assigned by a single instructor) were eliminated; readings that had any level of consensus (defined as those assigned by 2 or more instructors) were included; this resulted in a final sample of 88 readings (Appendix). Many of the readings in the sample have been published in a variety of formats or editions. For simplicity in reporting results, this study cites the original or first edition of a publication.

Frequency Analysis

In the first approach, the authors classified data using simple frequency counts to identify the authors and readings most frequently assigned in U.S. courses. The assigned readings were further subdivided by assigned frequency in undergraduate certificate programs, undergraduate degree programs, and post-graduate programs.

Sustainability Spectrum Analysis

A second approach for classifying the assigned reading list employed Landrum's (2015a; 2015b) developmental stages of corporate sustainability by categorizing each reading along the sustainability spectrum from weak to strong sustainability. Applying this model to the list of readings allowed identification of the stage of corporate sustainability that each reading most closely represented using pre-determined keywords. This systematic approach illuminates the orientation toward sustainability (weak versus strong sustainability) being taught in the business classrooms of the dataset.

All documents in the dataset were converted to PDF format and the full text for all publications was utilized in the word count analysis. To collect the data, online search engines were used to download PDF documents and extract the editable text in Adobe Acrobat X Professional. If a PDF document was not found online, the document or book was manually

scanned as a PDF and subsequently converted to editable text and extracted in Adobe Acrobat X Professional.

Through careful reading of the stages of corporate sustainability, as defined by Landrum (2015a; 2015b), keywords representative of each stage were identified (Table 1) through a process similar to citation pearl growing (Hawkins and Wagers, 1982; Schlosser et al., 2006). This method begins by drawing keywords from the original source (Landrum, 2015a; 2015b) and expanding the search to a second level to include the citations of the original work; additional iterations were not carried out.

Each PDF document was then scanned for the frequency of each keyword. Keyword frequencies were standardized by document size to account for biases associated with each publication's length. Thus, each stage's total keyword frequency in each document was divided by the document's total word count resulting in the percentage of keywords per document.

Root Word	Keywords
Stage 1 – Compliance	
complian*	compliance, compliant
legal*	legal, legalized, legally, legality
regulat*	regulate, regulated, regulates, regulation, regulatory
risk*	risk, risks
Stage 2 - Business–Centered	
biotechnolog*	biotechnology, biotechnologies
business as usual	business as usual
business model	business model
competitive advantag*	competitive advantage, competitive advantages
cost*	cost, costs, costly, costing, costed
cost-benefit*	cost-benefit, cost-benefits
customer*	customer, customers
demand*	demand, demands, demanding
efficienc*	efficiency, efficiencies
expens*	expense, expenses
growth	growth
market*	market, markets, marketing
market share*	market share, market shares
market value*	market value, market values
money	money
profit*	profit, profits, profited, profiting, profitable, profitability
public relations	public relations
retention	retention
return on investment	return on investment, ROI
sales	sales
strateg*	strategy, strategies, strategic, strategical, strategically
technolog*	technology, technologies
value chain*	value chain, value chains
Stage 3 – Systemic	
collaborat*	collaborate, collaborates, collaborated, collaborating, collaborative, collaboratively
cooperat*	cooperate, cooperated, cooperating, cooperation, cooperative, cooperatives
ecoefficienc*	ecoefficiency, ecoefficiencies
game chang*	game changer, game changing

Table 1: Keywords used to classify each of the five stages of corporate sustainability. The *Root Word* column indicates the base keyword. The *Keywords* column indicates the words or phrases used to determine each reading rank determined by the rank abundance curve analysis for the five stages of corporate sustainability.

Root Word	Keywords
Stage 3 – Systemic (continued)	
global citizen*	global citizen, global citizens, global citizenship
humanity	humanity
industry	industry
integrat*	integrate, integrates, integrating, integration, integrative
partnership*	partnership, partnerships
system*	system, systems, systemic
transform*	transform, transforms, transformed, transforming, transformation, transformations, transformative
Stage 4 – Regenerative	
carrying capacity	carrying capacity
consumption	consumption
degrowth	degrowth
holistic	holistic
interdependen*	interdependent, interdependence, interdependencies
natural system*	natural system, natural systems
perservation	preservation
planetary boundar*	planetary boundary, planetary boundaries
redistribution	redistribution
repair*	repair, repairs, repairing, repaired
restor*	restore, restored, restores, restoring, restoration, restorative
science*	science, sciences
scientific	scientific
steady state*	steady state, steady states
zero growth	zero growth
Stage 5 - Coevolutionary	
circular	circular
coevol*	coevolve, coevolving, coevolution
ecocentri*	ecocentric, ecocentrics, ecocentrism
ecoethic*	ecoethic, ecoethics
ecolog*	ecological, ecology
ecosystem*	ecosystem, ecosystems
flourish*	flourish, flourished, flourishes, flourishing
no growth	no growth
regenerat*	regenerate, regenerated, regenerating, regeneration, regenerative
resilien*	resilience, resilient

Table 1: (*continued*) Keywords used to classify each of the five stages of corporate sustainability. The *Root Word* column indicates the base keyword. The *Keywords* column indicates the words or phrases used to determine each reading rank determined by the rank abundance curve analysis for the five stages of corporate sustainability.

Data were analyzed via the statistical computing program, R version 3.2.1 (R Core Team, 2015) using the Text Mining Package V.0.6-2 (Feinerer et al., 2008; Feinerer and Hornik, 2015). This package processes the text of each document to create individual words, remove punctuation, remove upper case letters, and remove extra white space.

Using the BiodiversityR package (Kindt and Coe, 2005) in R version 3.2.1, rank abundance curves were created for each stage by comparing the percentage of keywords per document in each document. To create a rank abundance curve, percentage of keywords per document are numerically ranked from highest percentage to lowest percentage of keywords per document. The document with the highest percentage of keywords per document is assigned a rank of 1, second highest is assigned a rank of 2, etc. Rank abundance curves allow the reader to easily visualize the keyword percentages across all documents. Curves exhibiting a 'hockey stick' or 'J' shape indicate that one or several documents exhibit a large percentage of keywords per document compared to other documents in the dataset. Curves that exhibit a 'straighter' or 'flatter' shape indicate a relatively more equal distribution of percentage of keywords per document between the first and last ranked documents.

RESULTS

Fifty-one U.S. universities are represented in the dataset (representing 6 certificate programs; 16 undergraduate programs; 1 executive education program; 32 Master's programs; 1 PhD program). Within the fifty-one U.S. universities, eighty-one introductory sustainable business courses were identified. Note that some universities have multiple programs that met the selection criteria. Therefore, the total number of sustainable business courses exceeds the 51 U.S. universities in the dataset. The number of readings included from the U.S. universities is 88.

Authorship	Assigned	Percent	Author	Assigned	Percent
Hart, Stuart	15	29%	Wellington, Fred	6	12%
Esty, Daniel	14	27%	Benyus, Janine	5	10%
Hawken, Paul	14	27%	Chouinard, Yves	5	10%
McDonough, William	14	27%	Lubin, David	5	10%
Braungart, Michael	13	25%	Nidumolu, Ram	5	10%
Porter, Michael	13	25%	Rangaswami, M.R.	5	10%
Lovins, Amory	12	24%	Sachs, Jeffrey	5	10%
Lovins, L. Hunter	12	24%	Savitz, Andrew	5	10%
Anderson, Ray	10	20%	van der Linde, Claas	5	10%
Kramer, Mark	10	20%	WBCSD	5	10%
Hoffman, Andrew	9	18%	Daly, Herman	4	8%
Prahalad, CK	9	18%	Diamond, Jared	4	8%
Reinhardt, Forest	9	18%	Epstein, Marc	4	8%
United Nations	9	18%	Global Reporting Initiative	4	8%
Winston, Andrew	9	18%	Hammond, Allen	4	8%
Friedman, Milton	8	16%	Hitchcock, Darcy	4	8%
Arthur et al. / MIT Sloan Management Review	7	14%	IPCC	4	8%
Friedman, Thomas	7	14%	Leopold, Aldo	4	8%
Larson, Andrea	7	14%	Nattrass, Brian	4	8%
Lash, Jonathan	6	12%	Willard, Marsha	4	8%
Meadows, Donella	6	12%	Altomare, Mary	3	6%
Senge, Peter	6	12%	Milstein, Mark	3	6%

Table 2: U.S. universities assigning a reading authored or co-authored by an individual. The *assigned* column indicates the total number of U.S. universities assigning a reading by the author. The *percent* column indicates the percentage of U.S. universities assigning a reading by this author.

Frequency Analysis

The most frequently assigned authors across all courses in the sample were, in order, Stuart Hart, Daniel Esty, Paul Hawken, William McDonough, Michael Braungart, Michael Porter, Amory Lovins, Hunter Lovins, Ray Anderson, and Mark Kramer. Courses often assigned readings by these authors although there was not always consensus on which reading was most significant to the field of study. The top authors can be found in Table 2.

The highest level of agreement on readings among those surveyed (different universities assigning the same reading) was only ten universities (20% of the sample). The most frequently assigned readings across all program levels in the sample were, in order, *Cradle to Cradle* (McDonough and Braungart, 2002), *Green to Gold* (Esty and Winston, 2006), *Capitalism at the Crossroads* (Hart, 2005), "A road map for natural capitalism" (Lovins et al., 1999), and "Strategy and society" (Porter and Kramer, 2006). The top readings can be found in Table 3 and

Title	Authorship	Assigned	Percent	S1	S2	S3	S4	S5
Cradle to Cradle	McDonough & Braungart (2002)	10	20%	51	72	24	24	15
Green to Gold	Esty & Winston (2006)	9	18%	12	28	45	55	48
Capitalism at the Crossroads	Hart (2005)	8	16%	41	13	44	53	39
"A road map for natural capitalism"	Lovins et al. (1999)	7	14%	66	22	29	23	13
"Strategy and society"	Porter & Kramer (2006)	7	14%	85	25	87	83	81
"Beyond greening"	Hart (1997)	6	12%	35	17	22	**8**	16
Biomimicry	Benyus (1997)	5	10%	79	85	71	27	26
"Competitive advantage on a warming planet"	Lash & Wellington (2007)	5	10%	**1**	**9**	40	52	77
"Green and competitive"	Porter & van der Linde (1995)	5	10%	**2**	12	12	59	57
"The social responsibility of business is to increase its profits"	Friedman (1970)	5	10%	88	15	79	86	85
"The sustainability imperative"	Lubin & Esty (2010)	5	10%	**7**	**8**	**8**	72	86
The Triple Bottom Line	Savitz (2006)	5	10%	22	48	55	44	64
"Why sustainability is now the key driver of innovation"	Nidumolu et al. (2009)	5	10%	13	21	59	36	62
Making Sustainability Work	Epstein (2008)	4	8%	**5**	16	**9**	74	75
Natural Capitalism	Hawken et al. (1999)	4	8%	56	45	42	21	24

Table 3: List of assigned readings indicated in the syllabi collected from all universities. Books are indicated by italic text while articles are indicated by quoted text. The *assigned* column indicates the total number of **U.S. universities assigning a reading**. The *percent* column indicates the percentage of U.S. universities assigning a reading. *S1–S5* are based on each of the five stages of corporate sustainability (S1: Compliance; S2: Business–Centered; S3: Systemic; S4: Regenerative; S5: Coevolutionary). The values in the *S1–S5* columns are the % keywords / document ranking determined by the rank–abundance curves for each stage. Top ten ranked readings for each stage are highlighted in gray and bold.

the complete list of readings can be found in the Appendix.

Title	Authorship	Assigned	Percent	S1	S2	S3	S4	S5
"Rethinking the social responsibility of business"	Friedman et al. (2005)	4	8%	33	**1**	81	82	23
"Serving the world's poor, profitably"	Prahalad & Hammond (2002)	4	8%	49	**2**	72	76	49
The Ecology of Commerce	Hawken (1993)	4	8%	44	42	32	**3**	**6**
"The fortune at the bottom of the pyramid"	Prahalad & Hart (2002)	4	8%	52	**5**	19	46	84
"Climate change strategy"	Hoffman (2004)	3	6%	**9**	**10**	51	19	45
"Creating shared value"	Porter & Kramer (2011)	3	6%	42	**4**	41	17	78
"Creating sustainable value"	Hart & Milstein (2003)	3	6%	16	**6**	50	35	32
"Environmental product differentiation"	Reinhardt (1998)	3	6%	11	**7**	65	42	61
Leading Change	Kotter (2006)	3	6%	73	50	63	67	72
Mid–Course Correction	Anderson (1998)	3	6%	63	53	61	43	37
"Places to intervene in a system"	Meadows (1997)	3	6%	74	51	**7**	25	46
Sustainable Business: An Executive's Primer	Landrum & Edwards (2009)	3	6%	46	62	38	34	50
The Business Guide to Sustainability	Hitchcock & Willard (2009)	3	6%	87	77	49	85	82
The Natural Step for Business	Nattrass & Altomare (1999)	3	6%	50	64	15	18	22
The Necessary Revolution	Senge et al. (2008)	3	6%	36	59	13	50	27
"The sustainable economy"	Chouinard et al. (2011)	3	6%	37	41	34	75	**9**
Thinking in Systems	Meadows (2008)	3	6%	69	68	**4**	31	19

Table 3: List of assigned readings indicated in the syllabi collected from all universities. Books are indicated by italic text while articles are indicated by quoted text. The *assigned* column indicates the total number of **U.S. universities assigning a reading**. The *percent* column indicates the percentage of U.S. universities assigning a reading. *S1–S5* are based on each of the five stages of corporate sustainability (S1: Compliance; S2: Business–Centered; S3: Systemic; S4: Regenerative; S5: Coevolutionary). The values in the *S1–S5* columns are the % keywords / document ranking determined by the rank–abundance curves for each stage. Top ten ranked readings for each stage are highlighted in gray and bold.

The readings were also classified by program type (Table 4). The most frequently assigned readings in undergraduate certificate programs were *Green to Gold* (Esty and Winston, 2006) and "Strategy and society" (Porter and Kramer, 2006). The most frequently assigned readings in undergraduate degree programs were *Green to Gold* (Esty and Winston, 2006), *Capitalism at the Crossroads* (Hart, 2005), "The sustainability imperative" (Lubin and Esty, 2010), "Climate change strategy" (Hoffman, 2005), "A road map for natural capitalism" (Lovins et al., 1999), "Why sustainability is now the key driver of innovation" (Nidumolu et al., 2009), and "Serving the world's poor, profitably" (Prahalad and Hammond, 2002). The most frequently assigned readings in postgraduate programs were *Cradle to Cradle* (McDonough and Braungart, 2002), "A road map for natural capitalism" (Lovins et al., 1999), *Biomimicry* (Benyus, 1997), *Green to Gold* (Esty and Winston, 2006), *Capitalism at the Crossroads* (Hart, 2005), and "Strategy and society" (Porter and Kramer, 2006).

Sustainability Spectrum Analysis

The sustainability spectrum ranges from weak to strong. Stages of corporate responsibility have been placed along this spectrum (Landrum, 2015a; 2015b). In this section, the stages are examined both in terms of (1) readings most closely aligned with each stage of the sustainability spectrum and how frequently they are assigned in the sample and, conversely, (2) the most frequently assigned readings in the sample and the stages along the spectrum which they represent.

Compliance (very weak sustainability). The Compliance stage suggests legal or regulatory compliance as the primary rationale for adopting sustainability. The top five readings in the dataset that are most closely aligned with this stage (Figure 1) are, in order:

Title	Authorship	Assigned	Percent
U.S. Certificate Programs			
Green to Gold	Esty & Winston (2006)	2	33%
"Strategy and society"	Porter & Kramer (2006)	2	33%
U.S. Undergraduate Programs			
Green to Gold	Esty & Winston (2006)	3	6%
Capitalism at the Crossroads	Hart (2005)	3	6%
"The sustainability imperative"	Lubin & Esty (2010)	3	6%
"Climate change strategy"	Hoffman (2004)	2	4%
"A road map for natural capitalism"	Lovins et al. (1999)	2	4%
"Why sustainability is now the key driver of innovation"	Nidumolu et al. (2009)	2	4%
"Serving the world's poor, profitably"	Prahalad & Hammond (2002)	2	4%
U. S. Postgraduate Programs			
Cradle to Cradle	McDonough & Braungart (2002)	9	18%
"A road map for natural capitalism"	Lovins et al. (1999)	6	12%
Biomimicry	Benyus (1997)	5	10%
Green to Gold	Esty & Winston (2006)	5	10%
Capitalism at the Crossroads	Hart (2005)	5	10%
"Strategy and society"	Porter & Kramer (2006)	5	10%
"The social responsibility of business is to increase its profits"	Friedman (1970)	4	8%
"Beyond greening"	Hart (1997)	4	8%
"Competitive advantage on a warming planet"	Lash & Wellington (2007)	4	8%

Table 4: Top assigned readings by United States university programs. The *assigned* column indicates the total number of universities assigning a reading. The *percent* column indicates the percentage of universities assigning a reading in our U.S. sample. Books are indicated by italic text while articles are indicated by quoted text. Note: only the top 9 of 23 U.S. postgraduate program readings are listed in this table.

- "Competitive advantage on a warming planet" (Lash and Wellington, 2007), assigned by 10% of the classes in the sample.

- "Green and competitive" (Porter and van der Linde, 1995), assigned by 10% of the sample.
- "What every executive needs to know about global warming" (Packard and Reinhardt, 2000), assigned by 4% of the sample.
- "When social issues become strategic" (Bonini et al., 2006), assigned by 4% of the sample.
- *Making Sustainability Work: Best Practices in Managing and Measuring Corporate Social, Environmental and Economic Impacts* (Epstein, 2008), assigned by 8% of the sample.

The slope of the rank abundance curve for Stage 1 (Figure 1) suggests that the first two readings are most representative of this stage, there is a large difference between these two readings and the third reading, and the remaining readings are even less representative of the stage.

Among the top five U.S. readings (Table 3), *Green to Gold* (Esty and Winston, 2006) is most closely aligned with this stage and is the second most frequently assigned reading (by 18% of the U.S. sample). However, this book was ranked 13th among all readings in the Compliance stage, suggesting that there are 12 other readings that would be a better choice to represent this stage. In fact, the sharp slope of the rank abundance curve for Stage 1 (Figure 1) shows that there is a considerable difference in keyword content between the top two readings of this stage and the 13th place reading, revealing that *Green to Gold* is not a strong representative of the Compliance stage.

Business-Centered (weak sustainability). The Business-Centered stage suggests the business case as the primary rationale for adopting sustainability. The top five readings in the dataset that are most closely aligned with this stage (Figure 1) are, in order:

- "Rethinking the social responsibility of business" (Friedman et al., 2005) and "Serving the world's poor, profitably" (Prahalad and Hammond, 2002) are tied. Both readings are assigned by only 8% of the courses in the U.S. sample.
- "Strategies that fit emerging markets" (Khanna et al., 2005), was assigned by 4% of the sample.
- "Creating shared value" (Porter and Kramer, 2011), assigned by 6% of the sample.
- "The fortune at the bottom of the pyramid" (Prahalad and Hart, 2002), assigned by 8% of the sample.

Among the top five U.S. readings (Table 3), *Capitalism at the Crossroads* (Hart, 2005) is most closely aligned with this stage and is the third most frequently assigned reading (by 16% of the U.S. sample). However, this book was ranked 14th among all readings in the Business-Centered stage, suggesting that there are 13 other readings that would be a better choice to represent this stage. However, the gradual slope of the rank abundance curve for Stage 2 (Figure 1) reveals that there is not a considerable difference in keyword content between the top readings of this stage and the 14th place reading.

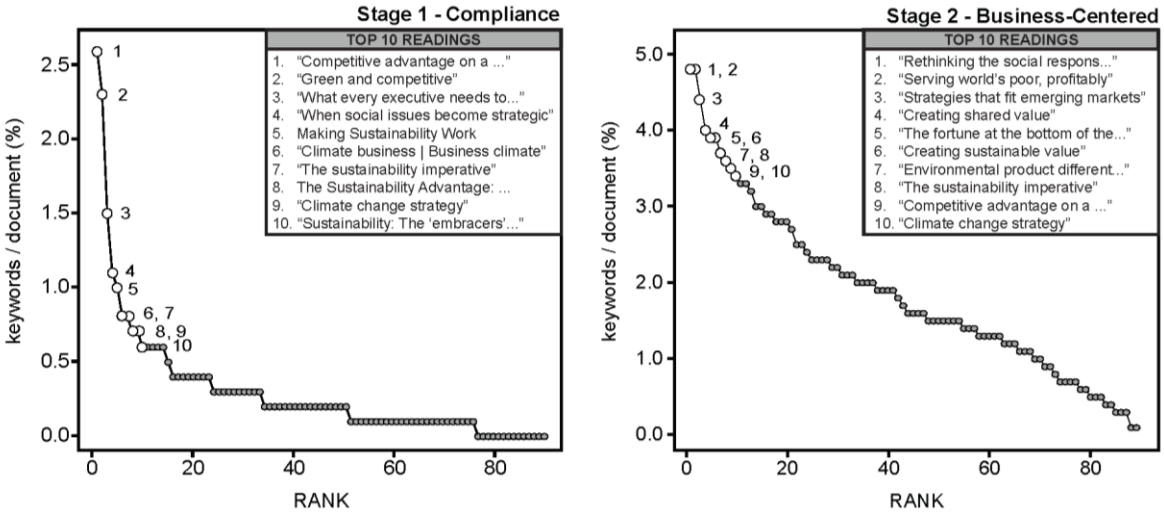

Figure 1: Dataset rank abundance curves of % keywords / document for Stage 1 and Stage 2 classified by each of the five stages of corporate sustainability. Books are indicated by italic text while articles are indicated by quoted text. Top ten ranked readings are indicated with an open circle. Gray circles are readings that fall below a top ten ranking. Note: the range of the y–axis scales are different on each panel.

Systemic (intermediate sustainability). The Systemic stage suggests systemic change as the primary rationale for adopting sustainability. The top five readings in the dataset that are most closely aligned with this stage (Figure 2) are, in order:

- "Overview of systems thinking" (Aronson, 1996) is assigned by 4% of the sample.
- "Cradle to cradle design: Creating healthy emissions – a strategy for eco-effective product and system design" (Braungart et al., 2007) is assigned by 2% of the sample.
- "The NEXT industrial revolution" (McDonough and Braungart, 1998) is assigned by 4% of the sample.
- *Thinking in Systems: A Primer* (Meadows and Wright, 2008) is assigned by 6% of the sample.
- "The roots of sustainability" (Ehrenfeld, 2005) is assigned by 4% of the sample.

Among the top five U.S. readings (Table 3), *Cradle to Cradle* (McDonough and Braungart, 2002) is most closely aligned with this stage and is the top most frequently assigned reading (by 20% of the U.S. sample). However, this book was ranked 24th among all readings in the Systemic stage, suggesting that there are 23 other readings that would be a better choice to represent this stage. In fact, the steep slope of the rank abundance curve for Stage 3 (Figure 2) reveals that there is a considerable difference in keyword content between the top readings of this stage and the 24th place reading.

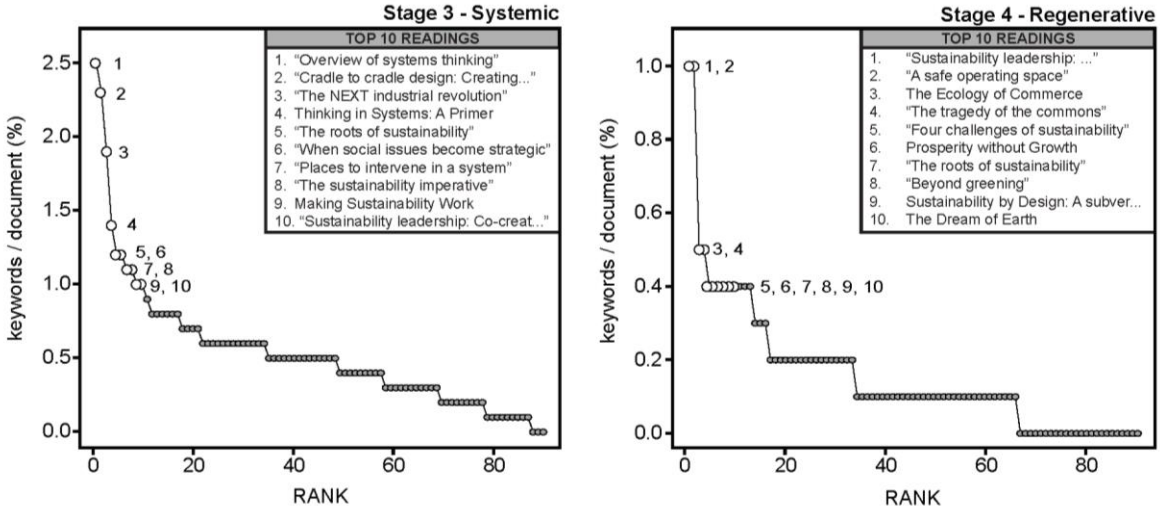

Figure 2: Dataset rank abundance curves of % keywords / document for Stage 3 and Stage 4 classified by each of the five stages of corporate sustainability. Books are indicated by italic text while articles are indicated by quoted text. Top ten ranked readings are indicated with an open circle. Gray circles are readings that fall below a top ten ranking. Note: the range of the y–axis scales are different on each panel.

Regenerative (strong sustainability). The Regenerative stage suggests restoring the damage caused to natural and social systems through practices adopted during the Industrial Revolution as the primary rationale for adopting sustainability. The top five readings in the dataset that are most closely aligned with this stage (Figure 2) are, in order:

- "Sustainability leadership" (Ferdig, 2007), assigned by 4% of the sample, and "A safe operating space for humanity" (Rockstrom et al., 2009), assigned by 2% of the sample, are tied as readings most representative of this stage.
- *The Ecology of Commerce: A Declaration of Sustainability* (Hawken, 1993) is assigned by 8% of the sample.
- "The tragedy of the commons" (Hardin, 1968) is assigned by 4% of the sample.
- "Four challenges of sustainability" (Orr, 2003) is assigned by 4% of the sample.

Among the top five U.S. readings (Table 3), "A road map for natural capitalism" (Lovins et al., 1999) is most closely aligned with this stage and is the fourth most frequently assigned reading (by 14% of the U.S. sample). However, this reading was ranked 24th in the Regenerative stage, suggesting that there are 23 other readings that would be a better choice to represent this stage. In fact, the steep slope of the rank abundance curve for Stage 4 (Figure 2) reveals that there is a considerable difference in keyword content between the top readings of this stage and the 24th place reading.

Coevolutionary (very strong sustainability). The Coevolutionary stage suggests developing symbiotic relationships with natural systems and respecting our place as only one part of nature as the primary rationale for adopting sustainability. The top five readings in the dataset that are most closely aligned with this stage (Figure 3) are, in order:

- *Ecosystems and Human Well-being: Synthesis* (Millennium Ecosystem Assessment, 2005) is assigned by 4% of the courses in the U.S. sample.
- "A safe operating space for humanity" (Rockstrom et al., 2009) is assigned by 2% of the sample.

- *Prosperity without Growth: Economics for a Finite Planet* (Jackson, 2009) is assigned by 2% of the sample.
- "Creating sustainable local enterprise networks" (Wheeler et al., 2005) is assigned by 2% of the sample.
- "Sustainable development: Mapping different approaches" (Hopwood et al., 2005) is assigned by 2% of the sample.

Among the top five U.S. readings (Table 3), "A road map for natural capitalism" (Lovins et al., 1999) is again most closely aligned with this stage and is the fourth most frequently assigned reading (by 14% of the U.S. sample). However, this reading was ranked 13th among all readings in the Coevolutionary stage, suggesting that there are 12 other readings that would be a better choice to represent this stage. In fact, the steep slope of the rank abundance curve for Stage 5 (Figure 3) reveals that there is a considerable difference in keyword content between the top readings of this stage and the 13th place reading.

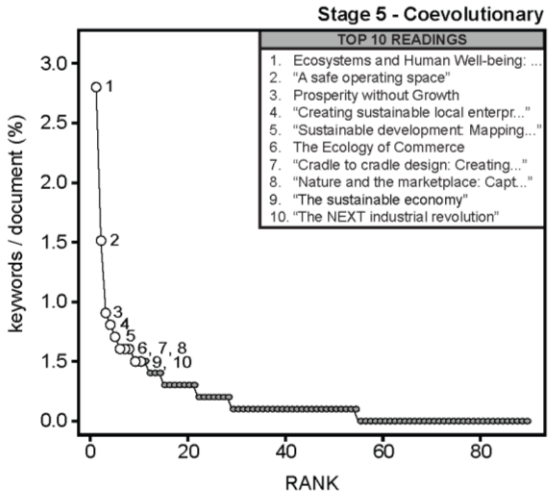

Figure 3: Dataset rank abundance curves of % keywords / document for Stage 5 classified by each of the five stages of corporate sustainability. Books are indicated by italic text while articles are indicated by quoted text. Top ten ranked readings are indicated with an open circle. Gray circles are readings that fall below a top ten ranking. Note: the range of the y–axis scales are different on each panel.

Finally, results indicate that of the readings most frequently assigned in the U.S. (Table 3), 26% are most closely aligned with the Compliance stage (very weak sustainability), 29% are aligned with the Business-Centered stage (weak sustainability), 16% are aligned with the Systemic stage (intermediate sustainability), 13% Regenerative (strong sustainability), 16% Coevolutionary (very strong sustainability). This shows that more than half (55%) of the top readings of the U.S. sample convey the message that sustainability should be adopted for compliance reasons (Compliance) or for the business case (Business-Centered) while only 29% of the top readings send the message that sustainability is directly related to science and should be adopted for the future of nature and humanity (Regenerative and Coevolutionary). That is, among the top readings assigned by this sample, 55% are aligned with a weak sustainability orientation while only 29% of the readings are aligned with a strong sustainability orientation.

DISCUSSION AND IMPLICATIONS

This study focused on the reading lists of introductory sustainable business courses to determine content, specifically seeking to identify early consensus on readings in the field. The results found limited agreement on what readings should be assigned. Further analysis allowed placement of the readings into stages of corporate sustainability (Landrum, 2015a; 2015b), which corresponds with the sustainability spectrum. The sustainability spectrum allows us to see the variety of orientations toward sustainability that range from weak to strong. The reading list of the sample was also reflective of a variety of orientations toward sustainability and it was found that the readings cover the full sustainability spectrum in their orientation.

The first noteworthy observation from the study is that the readings most representative of each stage of corporate sustainability based upon our keywords are not the most frequently assigned readings in the university courses. Conversely, the most frequently assigned readings

are not necessarily strong contenders in their respective stages of corporate sustainability. That is, publications that are most popular and have high citation rates are not necessarily the best choice to demonstrate various motivations for adopting sustainability, as demonstrated along the sustainability spectrum and stages of corporate sustainability. This suggests that the field of sustainable business studies is still in an early formative stage as researchers and instructors alike seek to define sustainability and the actions that are necessary given the global challenges before us.

The second noteworthy observation is the unsurprising revelation that U.S. business education is rooted in weak sustainability. While prior research has criticized U.S. business and industry for following weak sustainability (Davies, 2013; Ihlen and Roper, 2014: Spash, 2013), this research reveals the same orientation exists in business education. It was found that readings assigned in U.S. courses are overwhelmingly aligned with a weak sustainability paradigm (55% of assigned readings). Recall that a weak sustainability paradigm allows for extraction of natural resources justified by their economic value in the marketplace, continues the pursuit of infinite economic growth beyond planetary boundaries, makes social and environmental decisions based upon cost-benefit analysis, and measures success and progress through economic gain as exemplified by gross domestic product (Daly, 1973, 1991; Hartwick, 1978; Pearce, 1993: Solow, 1974, 1986, 1993). The fact that U.S. business schools are educating future business leaders from a weak sustainability paradigm is disconcerting and brings into question not only the ability of future U.S. business leaders to address or solve global sustainability challenges but also the implications this could have for the future competitiveness of the U.S. in a low-carbon or post-growth society.

Related to this, the third noteworthy observation is that far fewer readings are being assigned that are aligned with a strong sustainability paradigm (29% of the readings). Recall that strong sustainability advocates for preservation of natural capital, views natural capital as priceless, believes that infinite economic growth is problematic, makes decisions through science and ethics, and measures progress by non-economic factors, such as the environment and quality of life (Daly, 1973, 1991; Pearce, 1993). It is equally disconcerting that U.S. business schools are not educating future business leaders from this paradigm. It can be hypothesized that those educated from a strong sustainability paradigm will be much better prepared to confront and solve global sustainability challenges and will also be more globally competitive in a future low-carbon or post-growth society.

The fourth noteworthy observation is that both the reading and author lists are heavily populated with practitioners, which is consistent with research that suggests industry is leading academia in sustainable business (Landrum and Edwards, 2011; Starkey and Welford, 2001). Indeed, Hart (2009) points out that "…business education is in a heavy slumber. Until the recruiters demand graduates with a grounding in sustainability – and that is increasingly the case – I don't look for business schools to take a leadership stance" (p. 27). The question is whether academia will catch up, particularly in the U.S., as many corporations continue to adopt sustainability practices for the business rewards that can be realized (Willard, 2004).

The practical implication of this study is to guide instructors in the selection of reading materials for introductory sustainable business courses. More established business disciplines have a generally agreed upon foundation of research that all students learn in introductory courses, but the nascent field of sustainable business is not yet mature enough to have a well-established foundation. Through the frequency counts, instructors can know the most popular

authors and readings assigned in this sample, although our statistical analysis points to the fact that the "most popular" authors and readings are not necessarily the best examples to demonstrate the variety of orientations toward sustainability. While the authors acknowledge that the percent of agreement among instructors in the sample is low, as more business schools offer courses in sustainable business, it is expected that there will be some congruence in assigning readings and this study is a first step in that direction.

There is additional practical value in the analysis of readings following Landrum's (2015a; 2015b) stages of corporate sustainability along the sustainability spectrum. This analysis allowed the authors to identify the readings from the sample that are most closely aligned with each stage. This could guide instructors who may want to assign a reading highly representative of each stage of corporate sustainability to emphasize various orientations toward sustainable business. Based upon the statistical analysis presented here, the researchers recommend the top 2 readings in stages 1-4 and only the top reading in stage 5 as the strongest examples of each stage. This could foster a classroom discussion that compares and contrasts the orientation of the readings representing each of the five stages of corporate sustainability.

In sum, this analysis has shown that the majority of the top U.S. readings in the sample were focused on very weak or weak sustainability while a minority of the readings were focused on strong or very strong sustainability. This insight could guide instructors on the selection of reading assignments that are more oriented toward strong and very strong sustainability. While the business case has been advanced as the primary motivation for corporations to adopt sustainability (Hart and Milstein, 2003; Lovins, 2010; Lovins and Cohen, 2011; Porter and Kramer, 2011; Prahalad and Hammond, 2002; Prahalad and Hart, 2002; Willard, 2004), it has been acknowledged that the business case is not sufficient and that more robust engagement is

required in order to avert further economic, social, and environmental crises (Gunther, 2014; Klein, 2015; Rockstrom et al, 2009: Steffan et al., 2015; Westervelt, 2014). The guidance provided herein could aid instructors on the selection of readings to teach business students a strong sustainability orientation in preparation for future global challenges.

LIMITATIONS AND FUTURE DIRECTIONS

Because this study was intended to be descriptive in nature, there are several limitations. First, the reading lists represented by this sample are by no means a complete list of all introductory sustainable business courses being offered. There are several reasons for this. In some cases, subject content is taught under the realm of another program, such as leadership, ethics, or others. In other cases, courses may have only focused on one of the three realms of sustainability (such as social issues in business or environmental management), which, by definition, meant these courses were not sustainability courses. Lastly, several schools that were contacted would not share their reading lists because they viewed the information as proprietary.

Second, not only is the list a small sample of introductory sustainable business courses, the data set was restricted to schools in the U.S. Thus, the U.S.-based findings of the current study are not representative of course content in other countries. The near absence of non-U.S. schools in the original sample could be a result of data collected from primarily U.S. sources. The lack of non-U.S. courses might also be explained by the perspective of a colleague at a German university who stated that they don't have an introductory course because students already have a general knowledge of sustainability when they arrive at the school, that is to say, sustainability is more established across German society. In Germany, "Environmental education begins in nursery schools and primary schools and plays an essential role in the awareness of sustainable development" (City of Freiburg im Breisgau, n.d.). This could be a

point for future research in studying differences between sustainability education in U.S. and non-U.S. programs, particularly as it relates to the assignment of readings representing various stages along the sustainability spectrum.

Third, in some instances, schools integrate sustainability throughout the curriculum and no introductory course exists. Therefore, it is unknown what introductory readings students may be assigned in other courses. This could also be a point for future research in studying differences between sustainability embedded throughout the business curriculum versus a stand-alone course.

Fourth, the research was focused on identifying readings. The study excluded case studies, videos, websites, role plays, simulations, and other supplemental assignments. The question could be raised to what extent readings lists are a proxy for course content. Further research which examines supplemental materials and activities could prove useful in the future for course designers and instructors.

Finally, since the purpose was to identify consensus across readings, it does not diminish the contribution that newer publications could add to the literature. In time, it will be seen if newer publications gain widespread adoption across multiple schools and will become required reading.

CONCLUSION

There is growing pressure from both inside and outside academia to incorporate sustainability into business school curriculum. Many schools have begun to offer sustainable business courses for certificates, minors, majors, tracks, concentrations, degrees, and executive education. Given the rapid growth of sustainable business education in recent years, this study sought to determine if a consensus is emerging on publications that all students of sustainable

business should read and also sought to determine the orientation toward sustainability (weak versus strong) that is being advance in reading assignments.

In sum, few publications have been identified that the *majority* of course instructors can agree are central to sustainable business education and the preponderance of readings being assigned in the U.S. advance a weak sustainability paradigm. The contribution of this study is to provide guidance to current and future instructors of sustainable business in developing relevant content.

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Title	Authorship
"A road map for natural capitalism"	Lovins et al. (1999)
"A safe operating space for humanity"	Rockstrom et al. (2009)
A Sand County Almanac and Sketches Here and There	Leopold (1949)
"An overview of the historical context for sustainable business in the United States, 1960-2000"	Larson (2008)
"Beyond greening"	Hart (1997)
Biomimicry: Innovation Inspired by Nature	Benyus (1997)
"Building the green way"	Lockwood (2006)
Built to Last: Successful Habits of Visionary Companies	Collins & Porras (2005)
Business and Society: Stakeholders, Ethics, Public Policy	Lawrence & Weber (2004)
"Business guide to a sustainable supply chain: A practical guide"	New Zealand Business Council for Sustainable Development (2003)
Cannibals with Forks: The Triple Bottom Line of 21st Century Business	Elkington (1997)
Capitalism at the Crossroads: The Unlimited Business Opportunities in Solving the World's Most Difficult Problems	Hart (2005)
"Climate business/business climate"	Porter et al. (2007)
Climate Capitalism: Capitalism in the Age of Climate Change	Lovins & Cohen (2011)
"Climate change strategy: The business logic behind voluntary greenhouse gas reductions"	Hoffman (2004)
Collapse: How Societies Choose to Fail or Succeed	Diamond (2006)
"Competitive advantage on a warming planet"	Lash & Wellington (2007)
Cradle to Cradle: Remaking the Way We Make Things	McDonough & Braungart (2002)
"Cradle–to–cradle design: Creating healthy emissions — a strategy for eco–effective product and system design"	Braungart et al. (2006)
"Creating sustainable local enterprise networks"	Wheeler et al. (2005)
"Creating shared value"	Porter & Kramer (2011)
"Creating sustainable value"	Hart & Milstein (2003)
Ecosystems and Human Well-being: Synthesis	Millennium Ecosystem Assessment (2005)

Appendix: Dataset reading list.

Title	Authorship
Embedded Sustainability: The Next Big Competitive Advantage	Laszlo & Zhexembayeva (2011)
"Environmental product differentiation: Implications for corporate strategy"	Reinhardt (1998)
Fostering Sustainable Behavior: An Introduction to Community–Based Social Marketing	McKenzie-Mohr & Smith (1999)
"Four challenges of sustainability"	Orr (2003)
"Green and competitive: Ending the stalemate"	Porter & van der Linde (1995)
Green to Gold: How Smart Companies Use Environmental Strategy to Innovate, Create Value, and Build Competitive Advantage	Esty & Winston (2006)
Greening Your Business: A Hands-on Guide to Creating a Successful and Sustainable Business	Sitarz (2008)
"Growth through global sustainability"	Magretta (1997)
Human Scale Development: Conception Application and Further Reflections	Max-Neef (1989)
Leading Change	Kotter (2006)
Leading Change Toward Sustainability: A Change-Management Guide for Business, Government and Civil Society	Doppelt (2009)
Let My People Go Surfing: The Education of a Reluctant Businessman	Chouinard (2005)
Leveraging Corporate Responsibility: The Stakeholder Route to Maximizing Business and Social Value	Bhattacharya et al. (2011)
Making Sustainability Work: Best Practices in Managing and Measuring Corporate Social, Environmental and Economic Impacts	Epstein (2008)
Mid–Course Correction: Toward a Sustainable Enterprise: The Interface Model	Anderson (1998)
Natural Capitalism: Creating the Next Industrial Revolution	Hawken et al. (1999)
Nature and the Marketplace: Capturing The Value Of Ecosystem Services	Heal (2000)
"Overview of systems thinking"	Aronson (1996)

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Title	**Authorship**
"Places to intervene in a system"	Meadows (1997)
Primal Leadership	Goleman et al. (2004)
Prosperity without Growth	Jackson (2009)
"Recycling for profit: The new green business frontier"	Biddle (1993)
"Rethinking the social responsibility of business"	Friedman et al. (2005)
"Serving the world's poor, profitably"	Prahalad & Hammond (2002)
Small is Beautiful	Schumacher (1973)
Strategic Corporate Social Responsibility: Stakeholders in a Global Environment	Werther & Chandler (2010)
"Strategies that fit emerging markets"	Khanna et al. (2005)
"Strategy and society: The link between competitive advantage and corporate social responsibility"	Porter & Kramer (2006)
Strategy for Sustainability	Werbach (2011)
"Sustainability and its impact on the corporate agenda"	Lowitt et al. (2009)
Sustainability by Design: A Subversive Strategy for Transforming Our Consumer Culture	Ehrenfeld (2008)
"Sustainability leadership: Co-creating a sustainable future"	Ferdig (2007)
"Sustainability: The 'embracers' sieze the advantage"	Haanaes et al. (2011)
Sustainable Business: An Executive's Primer	Landrum & Edwards (2009)
"Sustainable development: Mapping different approaches"	Hopwood et al. (2005)
"Teaching smart people how to learn"	Argyris (2008)
The Bridge at the End of the World	Speth (2008)
The Business Guide to Sustainability	Hitchcock & Willard (2009)
The Business of Sustainability	Berns et al. (2009)
"The case of the environmental impasse"	Stern (1991)
"The competitive advantage of corporate philanthropy"	Porter & Kramer (2002)
The Dream of the Earth	Berry (1988)
The Ecology of Commerce: A Declaration of Sustainability	Hawken (1993)
The Fifth Discipline: The Art & Practice of The Learning Organization	Senge (1990)

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Title	Authorship
"The fortune at the bottom of the pyramid"	Prahalad & Hart (2002)
The Leader's Guide to Storytelling	Denning (2005)
The Natural Step for Business: Wealth, Ecology and the Evolutionary Corporation	Nattrass & Altomare (1999)
The Necessary Revolution: How Individuals and Organizations are Working Together to Create a Sustainable World	Senge et al. (2008)
"The NEXT industrial revolution"	McDonough & Braungart (1998)
"The roots of sustainability"	Ehrenfeld (2005)
"The six sins of greenwashing"	TerraChoice Environmental Marketing (2007)
"The social responsibility of business is to increase its profits"	Friedman (1970)
The Sustainability Advantage: Seven Business Case Benefits of a Triple Bottom Line	Willard & Elkington (2002)
The Sustainability Handbook: "The Complete Management Guide to Achieving Social, Economic and Environmental Responsibility"	Blackburn (2007)
"The sustainability imperative"	Lubin & Esty (2010)
"The sustainable economy"	Chouinard et al. (2011)
"The tragedy of the commons"	Hardin (1968)
The Triple Bottom Line: How Today's Best-Run Companies Are Achieving Economic, Social and Environmental Success – and How You Can Too	Savitz (2006)
The Wal–Mart Effect	Fishman (2006)
Thinking in Systems: A Primer	Meadows & Wright (2008)
Walking the Talk: The Business Case for Sustainable Development	Holliday et al. (2002)
"What every executive needs to know about global warming"	Packard & Reinhardt (2000)
"What executives don't get about sustainability (and further notes on the profit motive) "	Hopkins (2009)
"When social issues become strategic"	Bonini et al. (2006)
"Why sustainability is now the key driver of innovation"	Nidumolu et al. (2009)

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