

# Integrating Sustainability in Management and Business Education: A Matrix Approach

CATHY A. RUSINKO  
Philadelphia University

*This paper presents a matrix of options for integrating sustainability in management and business education, and illustrates how the matrix can be used with the example of a business school in the Northeastern United States, including lessons learned. The matrix contributes to the literature by including the co-curriculum—in addition to the curriculum—as an opportunity for integrating sustainability in management and business education. In addition, it draws from and extends previous empirical and conceptual research, and addresses the needs and weaknesses stated in earlier literature. The matrix provides a framework for discussion, as well as a framework for action—since it provides faculty, staff, and administrators with options for integrating sustainability and includes advantages, disadvantages, and recommendations for using each option. The matrix is useful for relative newcomers to sustainability, and can also help those who are analyzing past successes and failures, as well as those planning future efforts.*

Over the past several years, a number of studies have been published on how to integrate sustainability in higher education, including studies focused on business and management education. Some of the more recent ones include Benn and Dunphy, 2009; Porter and Cordoba, 2009; Rands, 2009; Roome, 2005; Scott and Gough, 2006; and Walker, Gough, Bakker, Knight, & McBain, 2009. In June 2009, the *Journal of Management Education* published a special issue on the topic, “Greening and Sustainability Across the Management Curriculum.” One of the summary messages from contributors—both academics and practitioners—was the need to integrate sustainability both in management education and across the business school (Rusinko & Sama, 2009); therefore, that is the focus of this paper.

This paper presents a matrix of options with respect to how to integrate sustainability in management and business education. It extends a matrix (Rusinko, 2010), and offers an application that illustrates how a university in the Northeastern U.S. is integrating sustainability in management and business education, including lessons

learned. The matrix presented here contributes to the literature by addressing the co-curricular—as well as curricular—opportunities for integrating sustainability in management and business education. It is flexible in that users can move between and among options, and can implement multiple options simultaneously. Users—including faculty, staff, and administrators—can start at whichever option (or quadrant) is most appropriate for them.

This type of matrix is consistent with recommendations by researchers, such as Lidgren, Hakan, Huisingh (2006); Sammalisto and Lindhqvist (2008); Scott and Gough (2006); Rands (2009); and Starik (2006) in that it adopts a broader focus with respect to sustainability education; it has the potential to address dimensions of sustainability beyond that of the environment—including environmental, social, and economic/financial; it presents users with multiple options for integrating sustainability in management and business education; it educates students in ways that help them to contribute to sustainable organizations and societies; and it engages multiple users (faculty, staff, administrators). In addition, the matrix illustrates how sustainability can be integrated across business disciplines.

The inclusion of both curricular and co-curricular learning helps business schools to ap-

The author wishes to thank Mark Starik and the two anonymous reviewers for their very helpful comments on earlier drafts of this article.

proach sustainability as a more holistic issue, which is the way that sustainability is approached by effective decision makers in effective organizations. There is a growing literature on the importance of both curricular and co-curricular engagement in higher education (e.g., Ahren, 2009; Kuh, 1995). Co-curricular options for sustainability can allow students the opportunity for additional experiential and applied learning outside the classroom, as discussed further below.

---

***The inclusion of both curricular and co-curricular learning helps business schools to approach sustainability as a more holistic issue, which is the way that sustainability is approached by effective decision makers in effective organizations.***

---

The matrix allows faculty, staff, and administrators to choose the best options for integrating sustainability into their curricula, relative to their desired outcomes and resource constraints. In addition, this type of matrix can provide a framework for future research on effectiveness of various options with respect to integrating sustainability in management and business education. This matrix does not have course-level content or curricular outcomes as part of its scope; however, readers can find a recent discussion in Rands (2009). The primary focus of this matrix is structural options for delivery of sustainability in management and business education; however, the paper does provide a brief list of current resources to facilitate integrating sustainability into management and business education.

While there are multiple definitions of sustainability, here, sustainability will be defined in a manner consistent with one of the most-cited definitions, that of the Brundtland Commission. That is, *sustainability* refers to that which “meets the needs of the present generation without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 1987: 8). Consistent with other researchers (e.g., Kagawa, 2007; Venkataraman, 2009), sustainability is defined in terms of three dimensions: environmental, social, and economic/financial. Examples of environmental sustainability include efforts to conserve and reuse. Examples of social sustainability include efforts to promote equity, diversity, and social justice. Examples of economic sustainability include efforts to reduce poverty and promote fair trade and survival.

There is overlap between and among these dimensions of sustainability (e.g., Scott & Gough, 2006). According to the United Nations Educational, Scientific, and Cultural Organization (UNESCO; 2004), sustainability education must address all three dimensions—social, environmental, and economic—because this allows all people to develop the necessary skills, knowledge, and perspectives to make decisions to improve quality of life at all levels.

---

***Examples of environmental sustainability include efforts to conserve and reuse. Examples of social sustainability include efforts to promote equity, diversity, and social justice. Examples of economic sustainability include efforts to reduce poverty and promote fair trade and survival.***

---

While there may be some variation, the term, *co-curricular* is generally defined to mean complementary to, but outside of the curriculum; therefore, it will be defined that way here. Ahren (2009) defines co-curricular engagement to include a variety of student activities outside of the classroom, such as community service groups, student government, honor societies, athletics, and fraternities. Since service learning can refer to both academic service learning based in coursework (e.g., Rands, 2009) and co-curricular service learning outside of the curriculum (e.g., Keen & Hall, 2009), the distinction will be made between the two types as they are discussed.

## **Background and Literature**

This paper contributes to the literature by reflecting and extending previous studies and perspectives with respect to how to integrate sustainability in management, business, and higher education, including Lidgren et al. (2006); Lozano (2006); Rands (2009); Roome (2005); Rusinko (2010); Rusinko and Sama (2009); Sammalisto and Lindhqvist (2008); Scott and Gough (2006); and Starik (2006). These researchers provided the context and constraints that informed the development of the matrix presented here.

For example, Sammalisto and Lindhqvist (2008) emphasized the need for a broader, more flexible approach to sustainability in higher education. Scott and Gough (2006) suggested that the dimensions of sustainable development (e.g., environ-

mental, social, and economic) should be addressed simultaneously, and not separately—and likewise for teaching sustainability. Lidgren et al. (2006) and Scott and Gough (2006) addressed the need for institutions to think strategically—that is, with respect to goals and resource constraints—when integrating sustainability into higher education. Lozano (2006) recommended an incremental approach with respect to sustainability in higher education, whereby small groups can start out, and if successful, can expand. Roome (2005) addressed the need to include multiple academic stakeholders, and stakeholders outside of the academic environment. Rands (2009) stressed the need to educate students in ways that will help them to contribute to sustainable organizations and societies. Starik (2006) pointed out the importance of engaging multiple users of our academic and pedagogical research on sustainability; the multiple users of the matrix presented here include faculty, staff, and administrators. Rusinko and Sama (2009) reported that sustainability in management education should be addressed both in the discipline, and across the business school. Likewise, Shriberg (2002) advocated for integrating sustainability within and across disciplines, and Steketee (2009) expressed the need for a broader based approach to integrating sustainability in management education—that is, beyond the management discipline and into the broader business curriculum.

This paper addresses the concerns and limitations articulated by the researchers above, and extends and applies a generic matrix (Rusinko, 2010) with respect to integrating sustainability in management and business education, including an example of one university in the Northeastern United States and the lessons learned from their experiences.

The matrix presented here contributes to the literature by including the co-curriculum—as well as the curriculum—in terms of opportunities for integrating sustainability in management and business in higher education. Researchers including Kuh (1995) and Ahren (2009) are part of a growing body of scholars who advocate the importance of both curricular and co-curricular engagement to help students develop vital personal and leadership skills. The matrix developed here also helps faculty, staff, and administrators in management and business education determine and choose the best options for their organizations and situations, and hence, make more effective decisions about integrating sustainability.

Additional links to research are established below, where the matrix and how it can be used is explained. The focus of this paper is on student-

centered teaching and learning about sustainability in management and business education; therefore, greening and sustainability in campus operations is addressed within the context of curricular or co-curricular opportunities for students.

### **A Matrix of Options for Integrating Sustainability in Management and Business Education**

To effectively integrate sustainability in management and business education, it is necessary to address how it should be implemented or delivered, that is, through already existing structures, or by creating new structures (e.g., Sammalisto & Lindhqvist, 2008). For example, sustainability can be integrated into management and business school curricula through an already existing structure such as a course—as a new topic, case, or module. Likewise, sustainability can be integrated by creating a new structure, such as a new course, major, minor, or program. Currently, there is debate over whether sustainability should be integrated into existing courses or taught as stand-alone courses (e.g., Christensen, Peirce, Hartman, Hoffman, & Carrier, 2007; Tilbury, Crawley, & Berry, 2004).

It is also necessary to address the focus for integrating sustainability in management and business education (e.g., Lozano, 2006). That is, sustainability can be integrated through a narrower or discipline-specific focus (e.g., within the management discipline), or with a broader or more cross-disciplinary focus (e.g., across the business school). Advantages and disadvantages of these approaches—as well as examples—are discussed below.

In addition, a growing body of literature in higher education (e.g., Ahren, 2009; Kuh, 1995) points to the importance of both curricular and co-curricular engagement to help students develop skills that are desirable outcomes for college graduates. According to Kuh (1995), co-curricular engagement helps students develop self-awareness, autonomy, self-worth, altruism, reflective thought, interpersonal skills, and decision-making skills. In an earlier study, Moffat (1988) reported that activities outside the classroom constituted the most significant part of the educational experience for about 40% of college students. Therefore, this matrix includes both curricular and co-curricular options with respect to integrating sustainability in management and business education.

The matrix of options for integrating sustainability in business and management education is explained below and illustrated in Figure 1. Table 1 summarizes the major advantages, disadvantages,

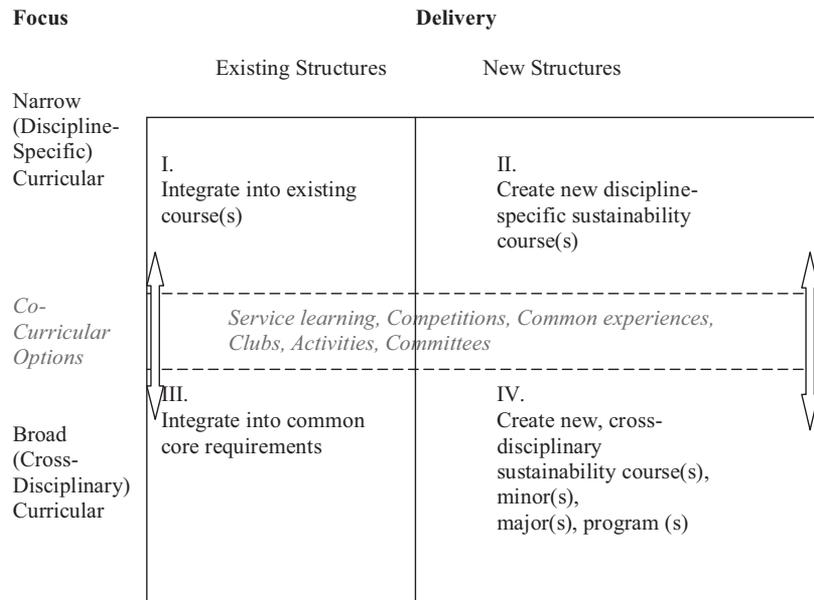


FIGURE 1

**Matrix to Integrate Sustainability in Management and Business Education (Curricular & Co-Curricular Learning).** Source: Adapted and extended from Rusinko (2010).

and circumstances under which to use each quadrant.

The upper left quadrant, or Quadrant I, represents integration of sustainability within existing structures and through a narrower, more discipline-specific focus. An example would be integrating sustainability into an already existing course in management as a new topic, case, module, or service learning project. First movers or individual

faculty champions might start in Quadrant I, or committed administrators may solicit faculty members to integrate sustainability into an existing course. In addition to approaching sustainability as a new topic, case, or module, it can be integrated into an existing course with the use of guest speakers, field or site visits, or student–client team projects. With respect to Quadrant I, sustainability is presented in a way that is consistent with the

**TABLE 1**  
Major Advantages, Disadvantages, and Uses for Matrix Options to Integrate Sustainability in Management & Business Education

Option	Major Advantages	Major Disadvantages	When to Use
I.	Easy to implement; Little need for admin. support; Minimal resource demands	Limited, non-uniform integration of sustain.	With motivated faculty & limited resources; As an introductory/trial approach to sustain.
II.	Sustain. has independent identity within discipline(s); More standardized approach to sustain. within discipline(s)	Greater resource demands than I; Greater need for admin. support than I; May isolate sustain.	With greater resource commitment; To distinguish discipline with respect to sustain.
III.	Sustain. is cross-disciplinary within existing courses; Large number of students exposed to sustain.	Demands significant cross-disciplinary resources and admin. support	When sustain. is a priority across disciplines
IV.	Sustain. has independent identity across disciplines; Large number of students exposed to sustain.	Greatest demands on resources and admin. support	When sustain. across the business school is a strategic goal
Co-Curricular Options	Sustain. exposure beyond the curriculum; Encourages student-initiated sustain.	Additional resource demands	To complement/support curricular sustain; To increase student engagement in sustain.

Source: Adapted and extended from Rusinko (2010).

course description, content, and outcomes. For example, a case on how a company transforms their supply chain in order to source and use fair trade resources may be adopted in an operations management course. Depending upon the amount of time available for the topic of sustainability, this case can replace a more traditional (nonsustainability-focused) case on supply chain management, or be adopted as an additional case. Such a case has the potential to illustrate practices and outcomes that are consistent with all three dimensions of sustainability throughout the supply chain—environmental, social, and economic/financial—while remaining consistent with the course description, content, and outcomes.

A major advantage to an option in Quadrant I is that it does not require a great deal of review, coordination, or support beyond that of the involved faculty member(s), and resource demands are relatively modest. A disadvantage is that the application is limited to the involved faculty member(s) and a portion of their particular course(s)/section(s). However, given faculty and administrative support, it may be possible to integrate sustainability into all sections of a particular management course—and it may be possible to integrate sustainability into multiple existing management courses within a program, as was the case with the MBA program at the University of Technology in Sydney, Australia (Benn & Dunphy, 2009).

The upper right quadrant, or Quadrant II, represents integration of sustainability through a narrower, more discipline-specific focus, but through creating a new structure. An example of this would be development of a stand-alone course on sustainability in the management discipline, such as *Managing Sustainable Organizations*. A stand-alone course would allow more time and opportunity to develop the relationships between sustainability and the discipline, and more time to illustrate the three dimensions of sustainability.

The advantage of this approach is that sustainability has its own identity, and its own separate course(s) within the management discipline. In the event that one or more of the courses are required, sustainability will be integrated uniformly within the discipline. The major disadvantage of this approach is that it demands significant time, resources, and cooperation by faculty and administrators throughout the discipline and school, and at higher levels in the university. In addition, this approach can isolate sustainability, particularly in the case of stand-alone electives. According to Shriberg (2002), sustainability electives are necessary; however, sustainability education needs to

be incorporated into the core curricula and courses.

This option would be adopted by users with some time, resources, and commitment to integrate sustainability in management education; these users would include faculty and administrators within the discipline and at higher levels of the university. Users who want to establish a distinctive competence with respect to sustainability in a discipline (e.g., management) would adopt this option. Table 1 summarizes the major advantages, disadvantages, and circumstances under which to use each option or quadrant.

The lower left quadrant, or Quadrant III, represents integration of sustainability within existing structures, but through a broader, cross-disciplinary focus within the business curriculum. Users who adopt this option might integrate sustainability into the existing business core. This could be done through introduction of sustainability as a topic, or through cases, modules, or service-learning components in the courses. For example, the *Principles of Marketing* course—required for all students as part of the core—might explore the topic of sustainable marketing, including environmental, social, and financial dimensions. Or, both the principles of marketing and principles of management courses—both required as part of the core—might integrate sustainability into their curricula.

The advantage of this option is that sustainability is integrated across multiple disciplines within business, or across the entire business curriculum, and a larger number (or all students) are exposed to sustainability. The major disadvantage is that it demands a schoolwide commitment with respect to time, resources, and support. This option would be adopted by a business school for which integrating sustainability across the curriculum is a priority.

The lower right quadrant, or Quadrant IV, represents integration of sustainability through new structures, but with a broader, cross-disciplinary focus. An illustration of this type of decision is creation of a new, cross-disciplinary introductory or capstone course in sustainability that is required for all business students. Quadrant IV can also be pursued through development of cross-disciplinary or transdisciplinary sustainability programs, majors, or minors within the business school. While a cross-disciplinary perspective involves two or more disciplines, a transdisciplinary perspective involves moving beyond academic disciplines to include stakeholders such as organizations, customers, and citizens (e.g., Lozano, 2006). Therefore, a transdisciplinary approach can

include a sustainability-oriented service-learning project with the larger (nonuniversity) community, as part of a newly developed, cross-disciplinary course requirement that is an introduction to sustainability.

The advantage of this option is that sustainability is integrated across two or more business disciplines and can also include nonacademic stakeholders. The disadvantage is that this option makes the greatest demands on resources and coordination, both throughout and beyond the business school. This option would be adopted by a business school for which integrating sustainability across the curriculum is a strategic goal.

The above examples for each quadrant in the matrix provide some suggestions, but are not exhaustive. In all quadrants, in addition to—or as a component of—the examples provided, methodologies including guest speakers, site or field visits, or student–client team projects can be used to facilitate integration of sustainability in management and business education. The Internet and other electronic tools are also good resources for bringing sustainability into the classroom. Skype and video conferencing are truly sustainable ways to introduce students to experts in sustainability from all sectors, since neither experts nor students must travel in order to be together. Similarly, YouTube requires only Internet access and offers a rapidly growing variety of presentations on sustainability that can be used in or out of the classroom; instructors can quickly and easily search “sustainability,” or search by individual or company name. For example, a series of interviews with Ray Anderson, longtime sustainability champion and founder and chairman of Interface, Inc., offers his perspectives on the business case for sustainability. Additionally, YouTube is an interactive media with great appeal to millennial students, since they can create and upload their own videos on sustainability issues for class projects. Table 2 provides a sample of some resources for integrating sustainability in management and business education. Due to the large and rapidly growing number of sustainability resources available, this list is intended as a starting point.

Co-curricular options to integrate sustainability in management and business education are purposely superimposed over the center of the matrix in Figure 1. They exist independently of the four quadrants, since they are outside of curricula. They can have a narrow (e.g., management) or broad (e.g., business school/university) focus, and they can be delivered by way of existing or new co-curricular structures. (Hence, the co-curricular options are printed across both columns of the

matrix, with arrows pointing to both rows of the matrix.) For example, an existing student Management Club can add a Sustainability Committee, or students can choose to form a new Sustainable Management Club. Likewise, a fund-raising competition by management students can add environmental causes as beneficiaries, or students can choose to start a fund-raising competition for green causes. The co-curricular mechanisms to integrate sustainability can be used alone (without curricular options), or together with any or all of the four curricular quadrants or options. For example, students can form a Sustainable Management Club independently, or as part of a project for their class in *Managing Sustainable Organizations*.

The higher education literature (e.g., Ahren, 2009; Kuh, 1995) reports the integral role of co-curricular activities (along with curricular activities) in students' college experience and outcomes. In Figure 1, co-curricular options both support and are supported by the four curricular options or quadrants. For example, co-curricular and sustainability-oriented service-learning projects can complement and support sustainability in curricula with either a narrow or broad focus—regardless of whether they are delivered by way of existing or new structures—by reinforcing curricular sustainability education and allowing students an additional venue for application and experiential learning. Correspondingly, sustainability education in the curricula—as defined by any or all of the four quadrants in Figure 1—can complement and support co-curricular activities in sustainability by providing academic frameworks or theories to underpin co-curricular learning.

For example, a stand-alone course on sustainable entrepreneurship can use more traditional means, such as cases, readings, and theoretical frameworks to enhance students' ability to think entrepreneurially about sustainable businesses and organizations. However, such a course can also participate in a co-curricular activity, such as helping to plan, set up, and run a small, sustainable business on campus (e.g., to help the campus community to recycle clothing and accessories) as an experiential learning opportunity to help students to learn to think entrepreneurially about sustainable businesses and organizations. The first few sections of students to take the course could participate in planning and setting up the business, and future sections could participate in maintaining and running the business. The business would be a co-curricular activity since it would operate independently of the course and curriculum. Theoretical frameworks learned in class would help students as they plan, develop,

**TABLE 2**  
**Sample Resources to Help Integrate Sustainability Into Management & Business Education**

**A Few Recent Books**

Hamschmidt, J., Ed., *Case Studies in Sustainability Management and Strategy: The Oikos Collection*, Greenleaf Publishing, Ltd., 2007. Can be adapted for grad. or undergrad. use.

Russo, M.V., *Environmental Management: Readings & Cases*, Sage Publishing, Inc., 2008. Can be adapted for grad. or undergrad. use.

Sharma, S., Starik, M., Husted, B., Eds., *Organizations and the Sustainability Mosaic: Crafting Long-Term Ecological & Societal Solutions*, Edward Elgar Publishing, 2007. Grad. or upper-level undergrad. use.

Wustenhagen, R., Sharma, S., and Starik, M., Eds., *Sustainable Innovation and Entrepreneurship*, Edward Elgar Publishing, 2008. Grad. or upper-level undergrad. use.

**Additional Sources for Cases & Teaching Materials**

AoM, Organizations and the Natural Environment (ONE) website—a large and growing number of cases, syllabi, links to multimedia and other sites, ideas for assignments, and other teaching resources for sustainability in management and business. <http://one.aomonline.org> (click on *teaching resources*)

Case Place (USA) for free cases, syllabi, and other teaching materials on business and sustainability—run by the Aspen Institute. <http://www.caseplace.org>

European Case Clearing House (ECCH) does not focus explicitly on sustainability topics, but collection includes some such cases. <http://www.ecch.com>

ICFAI Center for Management Research (India) holds Asia's largest on-line collection of management cases—many deal with corporate responsibility issues, but majority do not have explicit sustainability focus. <http://icmr.icfai.org>

**Additional Websites with Sustainability Information**

GreenBiz website is a source for green and sustainability news, worldwide—including careers and newsletter. Part of Green World Media. <http://www.greenbiz.com>

YouTube website for videos on sustainability in management and business—do keyword search (e.g., “sustainability and management,” or “Ray Anderson and sustainability”). Students can also make and upload videos on sustainability for class projects. <http://www.youtube.com>

**Recent Journal Special Issues**

*Journal of Management Education*, Special Issue, “Greening and Sustainability Across the Management Curriculum,” June 2009, 33(3). Articles cover multiple levels, including “how-to’s” at individual course levels and frameworks for integrating sustainability across courses and programs.

For an earlier perspective on integrating environmental sustainability in management education: *Journal of Management Education*, Special Issue on, “Teaching About the Natural Environment in Management Education,” April 2003, 27(2).

*Note:* While course content is not the major focus here, this table provides a small sample of a large and rapidly growing body of materials for use in the classroom—these are more recent materials and are intended as a starting point. Of course, a stand-alone course on sustainability in management or business would require use of a larger set of materials, and integrating sustainability into an existing course would demand use of a smaller set of materials. Above comments on grad./undergrad. suitability are subjective, and selection of materials is ultimately the decision of the instructor(s).

and grow the business, while the business itself would provide a learning lab for students to test and refine the theories and frameworks learned in class. Hence, both curricular and co-curricular initiatives can work together in complementary ways to integrate sustainability into management and business education.

Since co-curricular activities can be student (or Student Activities) directed, the co-curricular options may allow student-initiated participation in sustainability, so that students can be added to the traditional list of decision makers—faculty, staff,

and administrators—with respect to sustainability in higher education. Hence, advantages of co-curricular options include the potential for student-originated initiatives and practices, and exposure to sustainability beyond the curricula. Disadvantages include additional resource demands. Therefore, co-curricular options can be used as a complement and support to sustainability in the curriculum, and to increase the potential for student engagement.

All parts of Figure 1 (the curricular and co-curricular options) are flexible in that users can

move from one option to another, and can select one or multiple options with respect to integrating sustainability in management and business education. In addition, users can start at whichever option is most appropriate for them with respect to integrating sustainability into their curricula or co-curricula—or they can use more than one option simultaneously. It is not inconceivable that the choice of options can move backward—for example from Quadrants III and IV to Quadrants I and II—depending upon resources and strategic focus with respect to sustainability, or effectiveness of particular options in business school and university environments.

In general, the greater the commitment to integrate sustainability into the curricula—in terms of more or new structures, and broader focus—the greater is the need for faculty resources and training in sustainability, as well as rewards for engaging in sustainability education and research. The same relationship holds with respect to integrating sustainability in the co-curriculum. According to Beringer, Wright, and Malone (2008), the lack of such rewards is well-known for sustainability in the curriculum, and is often cited by faculty as a reason for lack of commitment to sustainability, in favor of more traditional disciplines that carry a higher probability of promotion, tenure, and other rewards.

---

***[T]he greater the commitment to integrate sustainability into the curricula—in terms of more or new structures, and broader focus—the greater is the need for faculty resources and training in sustainability, as well as rewards for engaging in sustainability education and research.***

---

The next section applies the matrix to illustrate a specific example of how a university in the Northeastern United States is integrating sustainability in the management and business curriculum, and co-curriculum.

#### **Example: Integrating Sustainability in Management and Business Education at a University in the Northeastern United States**

In 2009, a private university in the Northeastern United States formally announced that leadership in sustainability education was one of its strategic goals. This goal is being realized through a mul-

tidisciplinary, campuswide strategy—including both curricular and co-curricular options—with respect to sustainability education. The university enrolls approximately 3200 students in over 50 academic programs within six schools; about 85% are undergraduates. Currently, faculty with teaching and research interests in sustainability are distributed across all six schools. However, this example focuses on sustainability in management and in the School of Business Administration (SBA), which houses the management area.

The School of Business Administration (SBA) has about 700 full-time undergraduate students, and about 150 matriculating graduate students. Figure 2 illustrates the SBA's approach in terms of the matrix introduced in Figure 1.

Sustainability was introduced into SBA several years ago—before the university-level commitment—as a grassroots effort by SBA faculty with teaching and research interests in sustainability. With respect to the matrix, the initiative to integrate sustainability started in Quadrants I, II, and IV relatively simultaneously. With respect to Quadrant I, one faculty member has been integrating sustainability into the MBA core course in management since at least 2007. The course is titled, *Management in a Global Environment*, and sustainability is addressed as a vital issue in global management. For one major assignment, students develop original, research-based cases on sustainability at company and industry levels, and from the perspectives of environmental, social, and economic/financial—or triple bottom-line—practices, outcomes, and recommendations. Students present findings in both written and oral case formats. Additional sustainability-oriented teaching methodologies and tools include published cases, guest speakers (live and via Skype), CDs/videos, and YouTube presentations on sustainability in diverse environments and from diverse perspectives.

With respect to Quadrant IV, an undergraduate minor in sustainable business was developed and proposed several years ago, when one interested faculty member invited other faculty members to participate in the task. The proposal included three SBA undergraduate, stand-alone courses: *Economics of Sustainability*, *Managing Sustainable Organizations* (a management course), and *Sustainable Marketing*. For the fourth course in the minor, students would take one additional upper-level course in sustainability from outside of SBA. While the proposal was approved unanimously by the SBA faculty, and by SBA and University Curriculum Committees, it was not supported by University administration; the reason for lack of support was unclear. Since the minor was originally

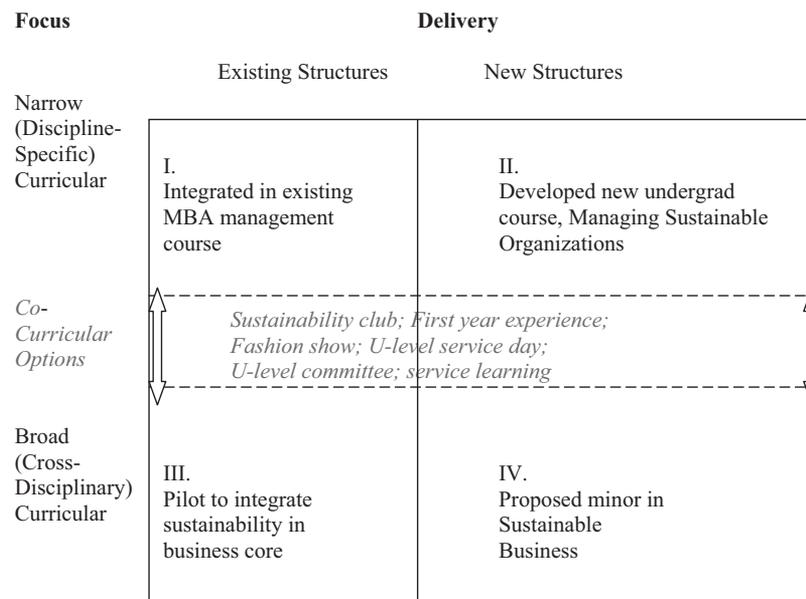


FIGURE 2

**Matrix to Illustrate Integrating Sustainability in Management and Business Education at a Northeastern U.S. University (Curricular & Co-Curricular Learning).** Source: Adapted and extended from Rusinko (2010).

proposed, University administration has changed, and the current administration strongly supports sustainability in the curriculum, so discussions are underway to reintroduce the minor in sustainable business.

With respect to Quadrant II, two courses proposed in the sustainable business minor are being developed as stand-alone courses: *Managing Sustainable Organizations* and *Economics of Sustainability*. Both are listed as upper-level electives in SBA, and are also requirements for the B.S. in environmental sustainability in the School of Liberal Arts. Both courses are being developed and will be taught by SBA faculty members with research or teaching interests in sustainability. These faculty members received small stipends for course development. In *Managing Sustainable Organizations*, a case approach (students read and analyze published cases) will be combined with a student-client project, in which student teams perform a real-time analysis of environmentally, socially, and economically/financially sustainable practices at a field site, including recommendations.

As momentum grows—and especially since the University made a commitment to becoming a leader in sustainability education—cross-disciplinary approaches to sustainability are being addressed. As stated above, discussions are underway to reintroduce the minor in sustainable business. In addition, with respect to Quadrant III, a pilot is being developed to integrate sustainability into the business core. For now, four faculty members

who are enthusiastic about teaching or research in sustainability are participants in this pilot, and currently, this effort is not compensated. The core courses included in the pilot represent those taught by the four participating faculty members: *Management Principles*, *Marketing Principles*, *Microeconomics*, and *Operations Management*. These four courses are also distributed so that students take one during each of their 4 years: *Marketing Principles* in freshman year; *Microeconomics* in sophomore year; *Management Principles* in junior year; and *Operations Management* in senior year.

While plans are still underway at this time, each of the four instructors will address environmental, social, and economic/financial sustainability in their sections of the core courses. For example, in *Management Principles*, the three dimensions of sustainability will be explained and discussed when social responsibility is covered. For one course assignment, student teams are assigned companies to research with respect to environmentally, socially, and economically/financially sustainable practices (or lack thereof); results are presented as team presentations. This assignment helps students to understand the relationship between social responsibility and sustainable practices.

If the pilot (scheduled for 2011) is successful, original faculty participants will invite other faculty members who teach in the business core to integrate sustainability into their course sections.

Original faculty participants will act as facilitators for other interested faculty (e.g., through meetings and conversations to learn whether/which sustainability issues are already being addressed; by helping faculty to choose materials and methodologies that are consistent with their teaching philosophies, etc.). It is important to ensure that all participating faculty members are comfortable with their sustainability materials and methodologies, and that materials and methodologies are consistent with pedagogical styles of each faculty member. According to Benn and Dunphy (2009), this is critical in order to gain buy-in and continued participation.

Sustainability is also part of the co-curriculum in SBA. Like their curricular counterparts, co-curricular activities evolved as both discipline-specific and cross-disciplinary approaches that are delivered by way of existing and new structures. In more narrowly focused individual disciplines, existing student clubs and activities participate in projects to promote sustainability at the business school and beyond. For example, the student organizations for fashion merchandising majors have sponsored and cosponsored green/eco-fashion-oriented speakers and activities (fashion merchandising is a major in SBA). New co-curricular structures with a broader, SBA-wide focus include plans for a student-run business to allow university community members the opportunity to recycle clothing and accessories.

Perhaps partly because the university is a smaller institution, and perhaps partly because sustainability lends itself to multidisciplinary activity, most co-curricular activities that have a sustainability focus tend to include business and non-business students. For example, in spring 2008, marketing and fashion merchandising majors in SBA participated in staging the annual student-run fashion show with the theme, "Eco-Fashion," along with nonbusiness majors in fashion design, industrial design, and architecture. Likewise, the book all freshman students read for the university-wide freshman year experience in 2009–2010 was *Cradle to Cradle* by William McDonough. Correspondingly, Student Activities sponsored panel discussions and guest speakers on sustainability throughout the 2009–2010 academic year, including a panel discussion co-sponsored by SBA and School of Liberal Arts.

In terms of more broadly focused and newer co-curricular activities, in September 2008, the university held its First Annual University-Wide Day of Service. Classes were suspended so that teams of students, faculty, and staff could participate in service projects—organized by faculty, staff, and stu-

dents—throughout the local area. Environmental, social, and economic/financial dimensions of sustainability were addressed with Service Day projects that included improving and cleaning up parks, schools, and recreation areas, as well as speaking in elementary and high schools, and designing and making products for the physically challenged. Subsequently, the Second Annual University-Wide Day of Service was held in September 2009 and included a larger number of projects that were similar in scope to those in 2008, and plans are underway for September 2010. The university also belongs to Association for the Advancement of Sustainability in Higher Education (AASHE), hosts an active chapter of Student Organization for Sustainable Action (SOSA), and has a University Sustainability Committee comprised of students, faculty, staff, and administrators. Both SOSA and the University Sustainability Committee are involved in campus greening activities. Some examples include working with Dining Services to purchase and serve more locally grown foods on campus, and working with Physical Plant to purchase more resource-efficient washers, dryers, and other appliances for the campus.

### Lessons Learned

While integration of sustainability in management and business education is still in process at the university in the example above, and quantitative results are not yet available, some qualitative findings are offered in the spirit of lessons learned. Although these findings are based on one university, they are consistent with other research findings on sustainability in higher education, as indicated in the discussion below. First of all, efforts to integrate sustainability in management and business education at this university required enthusiastic support, and the more far-reaching the effort, the greater the need for far-reaching support. One enthusiastic faculty member may be able to integrate sustainability in an existing course, particularly if it is the course that they teach. However, to develop a stand-alone course in sustainability (e.g., *Managing Sustainable Organizations*), requires support at several levels. Furthermore, to develop a minor (e.g., in sustainable business) or integrate sustainability in several core courses requires the support of several enthusiastic faculty members in the school, as well as support at the department, school, and university levels.

In this example, once a university-level commitment was made with respect to sustainability education, there was more administrative support for

integrating sustainability in the curriculum and co-curriculum at all levels, including discussions about reintroducing a minor in sustainable business that had not been supported at the university level a few years earlier. This finding is consistent with Benn and Dunphy's (2009) experience with integrating sustainability across Australian business schools, and is also echoed by Bradfield's (2009) observation that a management structure can make or break an effective sustainability program.

In addition to top-level support, faculty support for sustainability in business and management education is also necessary. Faculty champions who are interested in integrating sustainability not only act as pioneers in terms of introducing sustainability into their classrooms, but also can work with other faculty members in their disciplines to facilitate wider dissemination of sustainability across the curriculum. In SBA, faculty champions were able to interest other colleagues in integrating sustainability into their courses because they had positive working relationships with those colleagues. Similarly, faculty support and good working relationships were keys to success in disseminating sustainability across the curriculum in major Australian business schools (Benn & Dunphy, 2009). Also important is that thus far in SBA, individual faculty members or small groups with positive working relationships have been responsible for integrating sustainability in management and business education. According to Thompson and Purdy (2009), this approach to curricular innovation may lead to quicker and less controversial outcomes.

Likewise, a small group of faculty in SBA (four members) has been developing a pilot to integrate sustainability into their core courses with little or no compensation or support, because they are interested in the area. However, in the event of a ramp-up, incentives and resources for both champions and new adopters will facilitate the process (e.g., Beringer et al., 2008). In addition to internal resources, Steketee (2009) reported that external funding was vital to effective program development on a larger scale.

Another lesson learned is that integrating sustainability into both the curriculum and co-curriculum can be complementary. That is, the co-curriculum can provide opportunities for classroom projects (e.g., students from a management class provide consultation to a student-run clothing recycling business), as well as provide additional opportunities for student engagement in sustainability. Likewise, the curriculum can provide the theoretical frameworks and underpin-

nings for more effective co-curricular endeavors (e.g., the theory-based consultation provided by management students to a student-run clothing recycling business). In addition, addressing sustainability in terms of curriculum and co-curriculum allows students to interact with a larger and more diverse set of stakeholders, gain a better perspective on the role of sustainability in society, and be better prepared to address sustainability as members of organizations and society.

In general, students have embraced sustainability. Informal feedback has been positive, with students inquiring about and requesting additional opportunities to address sustainability issues in the curriculum and co-curriculum. More formal feedback will be collected in the future, including formal student evaluations of sustainability in the curriculum and co-curriculum, and formal evaluations of involved faculty members.

The final lesson learned is that sustainability can be most effectively integrated into management and business education through a combination of bottom-up and top-down efforts, as was the case in this example. To discourage the former can stifle enthusiasm and innovation that typically occurs at the individual or local team (e.g., SBA) level. To ignore the latter can result in a random collection of efforts, with no synergy.

---

***The final lesson learned is that sustainability can be most effectively integrated into management and business education through a combination of bottom-up and top-down efforts, as was the case in this example.***

---

### **The Matrix and Future Research**

Thus far, the matrix to integrate sustainability in management and business education has been presented as a framework of options and used to illustrate one business school's plan to integrate sustainability across the curriculum and co-curriculum. Moving forward, the matrix can be used to begin to ask important questions about integrating sustainability in management and business education. Some of these questions include (1) What is the relative effectiveness of integrating sustainability in management and business education by way of curricular, co-curricular, and both curricular and co-curricular options? (2) Under what conditions are existing structures most effective for integrating sustainability in management and business education, and under what con-

ditions is it most effective to create new structures? (3) Under what conditions is a narrower focus most effective for integrating sustainability in management and business education, and under what conditions is it most effective to use a broader focus? The problem of how to operationalize sustainability measures and outcomes is well-reported in the literature (e.g., Sammalisto & Lindqvist, 2008), and answers to these questions require further development of measurement tools.

Likewise, hypotheses can be tested with respect to various contingencies and demographics of particular management departments, business schools, disciplines, programs, courses, faculties, resources and support, and sustainability philosophies or missions. Some research has suggested that sustainability modules integrated into discipline-specific courses are "more important" in business schools than are stand-alone courses (Holt, 2003). Other research has pointed out that in practice, development of stand-alone sustainability courses tends to be more common than linking sustainability to a particular field of study (Beringer et al., 2008). With respect to sustainability in higher education in Atlantic Canada, Beringer et al. (2008) report that the best performers tend to be "primarily undergraduate" institutions that are known for their commitment to high-quality undergraduate education in the region. While these findings may be limited in their generalizability, they provide a starting point for future research.

Additional problems with current research on sustainability in higher education include weak linkages between plans and implementation (e.g., early adopters with ambitious plans that fail to be realized), and offerings that focus mainly on the environmental dimension of sustainability (Segalas, Cruz, & Mulder, 2004). Other researchers have cited lack of administrative commitment to integrating sustainability into higher education, and limited time and resources (e.g., Lidgren et al., 2006; Sammalisto & Arvidsson, 2005). Existing data on integrating sustainability in higher education may not be conclusive, but the field of research is evolving, and as it continues to do so, this matrix can be used to guide future empirical research. Despite measurement and data constraints, this matrix can provide a platform from which to launch discussions on the role of sustainability in individual departments and across the business school.

In future studies, there is the potential to extend the matrix. For example, a future study can address course-level content and outcomes

measures, perhaps as a third dimension of the matrix.

## CONCLUSION

This paper has drawn from and extended previous research and recommendations from the literature in order to develop and present a matrix of options with respect to integrating sustainability in management and business education. Contributions of the matrix include multiple options—including delivery and focus considerations—so that users can make the appropriate choices with respect to integrating sustainability into management and business education, given their particular goals, resources, and environment. Discussion and illustrations include major advantages and disadvantages of each option, as well as general suggestions for when to use them.

In particular, this matrix contributes to the literature by incorporating both curricular and co-curricular options for integrating sustainability, and by illustrating how the matrix can be used with the example of one business school's experiences in integrating sustainability in the curriculum and co-curriculum, including lessons learned.

The matrix is flexible. Unlike much of the current literature, the matrix can be used at the course, discipline, and cross-disciplinary levels. Users can move between and among options and can implement multiple options simultaneously. The matrix has the potential to focus on all dimensions of sustainability—environmental, social, and economic—rather than focusing only on the environmental dimension. In addition, the matrix provides a platform for discussion of the role of sustainability at discipline, department, and school levels—with respect to curricular and co-curricular options—and a framework for future empirical research on effectiveness of various options with respect to integrating sustainability in management and business education.

## REFERENCES

- Ahren, C. S. 2009. Detangling the unique effects of co-curricular engagement on self-reported student learning outcomes. Doctoral Dissertation, Indiana University, Department of Educational Leadership and Policy Studies.
- Benn, S., & Dunphy, D. 2009. Action research as an approach to integrating sustainability into MBA programs: An exploratory study. *Journal of Management Education*, 33(3): 276–295.
- Beringer, A., Wright, T., & Malone, L. 2008. Sustainability in higher education in Atlantic Canada. *International Journal of Sustainability in Higher Education*, 9(1): 48–67.

- Bradfield, S. L. 2009. The value of sustainability education. *Journal of Management Education*, 13(3): 372–375.
- Christensen, L. J., Peirce, E., Hartman, L. P., Hoffman, W. M., & Carrier, J. 2007. Ethics, CSR and sustainability education in the *Financial Times* top 50 global business schools: Baseline data and future research directions. *Journal of Business Ethics*, 73(4): 347–368.
- Holt, D. 2003. The role and impact of the business school curriculum in shaping environmental education at Middlesex University. *International Journal of Sustainability in Higher Education*, 4: 324–343.
- Kagawa, F. 2007. Dissonance in students' perceptions of sustainable development and sustainability: Implications for curriculum change. *International Journal of Sustainability in Higher Education*, 8(3): 317–338.
- Keen, C., & Hall, K. 2009. Engaging with difference matters: Longitudinal student outcomes of co-curricular service-learning programs. *The Journal of Higher Education*, 80(1): 60–79.
- Kuh, G. D. 1995. Out-of-class experiences associated with student learning and personal development. *The Journal of Higher Education*, 66(2): 123–155.
- Lidgren, A., Hakan, R., & Huisingh, D. 2006. A systematic approach to incorporate sustainability into university courses and curricula. *Journal of Cleaner Production*, 14: 797–809.
- Lozano, R. 2006. Incorporation and institutionalization of SD into universities: Breaking through barriers to change. *Journal of Cleaner Production*, 14: 787–796.
- Moffat, M. 1988. *Coming of age in New Jersey: College and American culture*. New Brunswick, NJ: Rutgers University Press.
- Porter, T., & Cordoba, J. 2009. Three views of systems theories and their implications for sustainability education. *Journal of Management Education*, 33(3): 323–347.
- Rands, G. P. 2009. A principle-attribute matrix for sustainable management education and its application: The case for change-oriented service-learning projects. *Journal of Management Education*, 33(3): 296–322.
- Roome, N. 2005. Teaching sustainability in a global MBA: Insights from the OneMBA. *Business Strategy and the Environment*, 14: 160–171.
- Rusinko, C. A. 2010. forthcoming. Integrating sustainability in higher education: A generic matrix. *International Journal of Sustainability in Higher Education*, 11(3): 250–59.
- Rusinko, C. A., & Sama, L. M. 2009. Greening and sustainability across the management curriculum: An extended journey. *Journal of Management Education*, 33(3): 271–275.
- Sammalisto, K., & Arvidsson, K. 2005. Environmental management in Swedish higher education: Directives, driving forces, hindrances, environmental aspects and environmental co-ordinators in Swedish universities. *International Journal of Sustainability in Higher Education*, 6: 18–35.
- Sammalisto, K., & Lindqvist, T. 2008. Integration of sustainability in higher education: A study with international perspectives. *Innovation in Higher Education*, 32: 221–233.
- Scott, W., & Gough, S. 2006. Sustainable development within UK higher education: Revealing tendencies and tensions. *Journal of Geography in Higher Education*, 30(2): 293–305.
- Segalas, J., Cruz, Y., & Mulder, K. 2004. What professionals should know about sustainable development? European network conference on sustainability practice (ENCOS), Berlin, Germany.
- Shriberg, M. 2002. Institutional assessment tools for sustainability in higher education. *International Journal of Sustainability in Higher Education*, 3(3): 254–270.
- Starik, M. 2006. In search of relevance and impact. *Organization & Environment*, 19(4): 431–438.
- Steketee, D. 2009. A million decisions: Life on the (sustainable business) frontier. *Journal of Management Education*, 33(3): 391–401.
- Thompson, T. A., & Purdy, J. M. 2009. When a good idea isn't enough: Curricular innovation as a political process. *Academy of Management Learning & Education*, 8(2): 188–207.
- Tilbury, D., Crawley, C., & Berry, F. 2004. Education about and for sustainability in Australian business schools. Report prepared by the Australian Research Institute in Education for Sustainability (ARIES) and Arup Sustainability for the Australian Government Department of the Environment and Heritage, Canberra.
- UNESCO. 2004. DESD Draft Implementation Plan, Volume 1.
- Venkataraman, B. 2009. Education for sustainable development. *Environmental Magazine*, 51(2): 8–10.
- Walker, H. L., Gough, S., Bakker, E., Knight, L., & McBain, D. 2009. Greening operations management: An online sustainable procurement course for practitioners. *Journal of Management Education*, 33(3): 348–371.
- World Commission on Environment and Development. 1987. *Our common future*. Oxford: Oxford University Press.



**Cathy A. Rusinko** (PhD, Pennsylvania State University) is an associate professor of management in the School of Business Administration at Philadelphia University. Her research interests include sustainability in industry and higher education, and technology and innovation management. She has been actively involved in developing curriculum and integrating sustainability at undergraduate and graduate levels in higher education, and

studying the relationship between sustainable practices and competitiveness in industry.

Copyright of Academy of Management Learning & Education is the property of Academy of Management and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.

**Fonte: Academy of Management Learning & Education, v. 9, n. 3, p. 507–519, 2010. [Base de Dados]. Disponível em: <<http://web.ebscohost.com>>. Acesso em: 16 dez. 2010.**

A utilização deste artigo é exclusiva para fins educacionais