

Sport-Environmental Sustainability (Sport-ES) Education

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The vast natural environment of Planet Earth is changing and global-scale human activities are the predominant drivers of such change. Human-induced changes to Earth's complex and interconnected ocean, freshwater, land, and atmospheric ecosystems have been established through a range of empirical observations and analyses (e.g. IPCC, 2007; IPCC, 2014; Rockström et al., 2009; UNEP, 2005, 2007). The most recent United Nations (UN) assessment of the state of the Earth's ecosystems argued that, "the currently observed changes to the Earth System are unprecedented in human history" (UNEP, 2012a, p. 6; 2012b). Previous UN assessments have echoed this conclusion (UNEP, 2002; 2005, p. 1; 2007) with one asserting that our Earth had changed, "more rapidly and extensively than in any comparable period of time in human history" (UNEP, 2005, p. 1). These conclusions were reached by the work of thousands of the world's best scientists, and several rounds of peer-review research.

Particular among these environmental changes is anthropogenic climate change, a "wicked" problem of global scale (Prins & Rayner, 2007; Winn, Kirchgeorg, Griffiths, Linnenluecke, & Gunther, 2011). The unintended consequences of climate change—including rising ocean and land temperatures, extreme weather events, rises in sea levels, and reduced polar ice cover (IPCC, 2014)—have been characterized as "extreme damage to the natural

environment” that is “unpredictable,” difficult to control and manage, and potentially irreversible (Bansal & Hoffman, 2012; Solomon, Plattner, Knutti, & Friedlingstein, 2009; Winn et al., 2011). As a consequence, environmental changes of such magnitude and urgency are driving demand for sustainability (Benn, Dunphy, & Griffiths, 2014). Such calls for sustainability extend to the sport sector that, like other industrial sectors, is not exempt from the impacts of such environmental changes (Mallen, Adams, Stevens, & Thompson, 2010).

Sport and the natural environment have a “dualistic relationship” (Morelli, 2011, p. 3). This relationship involves a reciprocal dependency between the two entities. For instance, where would sport be without the mountains used for the multiple forms of skiing and snowboarding? Or, without the natural waterways used for canoe and kayak racing, sailing, and marathon swimming? Sport must, thus, play a role in safeguarding the natural environment, as it is critical for use by future generations in sport.

This chapter considers environmental sustainability and/or sustainable development, and how higher education for sport management can respond to the challenges of teaching and learning sustainability. To give context to such challenges, we begin by considering the philosophical origins of sustainability. Two related concepts are then introduced, sport environmental sustainability, or the field characterized as *sport-ES* (Mallen & Chard, 2011; Mallen, Stevens, & Adams, 2011) and *natural capitalism* (Cordano, Ellis, & Scherer, 2003). Literature on sustainability education, typically known as *Education for Sustainable Development* (ESD) (Sterling, 2012; UN, 2015) but sometimes referred to as *Education for Sustainability* (EfS) (Jones, Selby, & Sterling, 2010; G. Scott, Tilbury, Deane, & Sharp, 2012), is offered, along with sport-ES education. Finally, four foundational steps and two pedagogical approaches are considered for sport-ES education.

Background to Sport-ES Education

Philosophical Origins of Environmental Sustainability

Perspectives of sustainability and the natural environment—and therefore sport-ES—have emerged from deeper philosophical debates about humanity’s relationship with nature. Two contrasting perspectives dominate this debate, and so inform discussions about environmental sustainability: (1) *anthropocentrism*, a view centered on the needs of humans where nature is valued only for what material benefits it can provide; and (2) *ecocentrism*, a view centered on the needs of nature where it is valued for its own sake by humans (Brymer, Downey, & Gray, 2009; Catton & Dunlap, 1980; Gagnon-Thompson & Barton, 1994; Hoffman & Sandelands, 2005; Vlek & Steg, 2007). The conceptualization of humanity’s relationship with nature into these two contrasting views gained recognition in environmental psychology literature dating back to the 1960s (Gifford, 2007).

Anthropocentric and ecocentric views characterize human perceptions of what nature is, and our historical relationship with it. When considered from a purely “anthropocentric or materialistic perspective,” the natural environment is everything that is “*other* to humankind” (Brymer et al., 2009; Mathews, 2006). However, aligned with calls for sustainability is the inextricable relationship that humans have with nature. Indeed, Schultz (2002) explains that humans often forget that we, too, are, “part of nature”:

We are born in nature; our bodies are formed of nature; we live by the rules of nature. As individuals, we are citizens of the natural world; as societies, we are bound by the resources of our environment; as a species, our survival depends on an ecological balance with nature. (p. 61)

Despite what Brymer et al. (2009) calls “popular perceptions to the contrary,” humanity is undeniably a “part of the natural world,” and so this fundamental truth is consistent with efforts to achieve the sustainability of the natural environment, and provide ESD/EfS. However, we will return to the theme of anthropocentric and ecocentric perspectives in the section ahead on “stand-alone” sport-ES courses.

Education for Sustainability and Sport-ES

Since 2008 in particular, there has been a growing body of research and other literature pertaining to sport-ES (e.g. Dingle, 2009; Fairley, Ruhanen, & Lovegrove, 2015; MacIntosh, Apostolis, & Walker, 2013; Mallen & Chard, 2011, 2012; McCullough, Pfahl, & Nguyen, 2015; Phillips & Turner, 2014; Trendafilova et al., 2014). This was originally illustrated by Mallen, Stevens, and Adams (2011) content analysis, and which is updated by Mallen in Chapter 2 of this text. Across this sport-ES literature, there is a general acceptance that sport does impact adversely on the natural environment, but that there are a range of strategies for mitigating such harm. A good illustration of such work is Casper and Pfahl’s (2015a) edited book, *Sport Management and the Natural Environment: Theory and Practice*, which is a major and welcome addition to the literature that examines sport’s relationship with the environment from a variety of management perspectives. While such texts could be valuable to a sport-ES educational program, generally there is a gap in the ESD/EfS literature as it pertains to sport, or what might be called “sport-ES education.”

It is ironic that there is a gap in the literature on sport-ES education when for over a decade in other disciplines, there has been significant advances in ESD/EfS. As König (2015, p. 105) has noted, this is underpinned by attempts to address complex environmental problems that invite society—including higher education—to, “re-frame, un-learn, and re-learn fundamentally

how humans relate to each other and the environment” (p. 105). This was reiterated by Lotz-Sisitka, Wals, Kronlid, and McGarry (2015, p. 73) in their contention that higher education institutions “need to be reconsidered to enable students and staff to deal with accelerating change, increasing complexity, contested knowledge claims and inevitable uncertainty” (p. 73).

To support calls for ESD/EfS, the UN declared the period from 2005–2014 the “Decade of Education for Sustainable Development” (UNESCO, 2005). This UN “decade” was aimed at encouraging the integration of “principles and practices of sustainable development into all aspects of education and learning” (Buckler & Creech, 2014, p. 5). The UN’s final report on this “decade” indicated that “a strong trend can now be seen to make education more relevant to the social, environmental and economic challenges that the world faces today” (Buckler & Creech, 2014, p. 5). In particular, “participatory learning processes, critical thinking and problem-based learning are proving particularly conducive to ESD” (Buckler & Creech, 2014, p. 7).

A challenge outlined in the UN Final Report was the need for “further alignment of education and sustainable development sectors” (Buckler & Creech, 2014, p. 8). The UN’s commitment to sustainable development education was reaffirmed to 2030 to “ensure that all learners acquire the knowledge and skills needed” (UN, 2015, p. 2). Iyer-Raniga and Andamon (2016, p. 106) concurred and reported that within the sustainability movement, the “focus has shifted from knowledge of natural ecosystems to equipping people with knowledge skills and understandings necessary to make decisions based on environmental, social and economic implications” (p. 106). However not all researchers agree with the progress with some noting that the, “inclusion of EfS has been slow to materialise” (Christie, Miller, Cooke, & White, 2015, p. 656).

The message is quite simple—a paradigm shift needs to occur if we are going to stop the increasing global rates of human-caused environmental and social degradation. The difficult question is, how can education include the dialogue and actions necessary to create this kind of change? (p. 79)

Moore (2005, p. 78) further argued:

Sustainability education is defined as education that concentrates on the concept of sustainability in a manner that fits with the values of sustainability. What we teach, what we don't teach, and how we teach are all considered when creating sustainability education practices. (p. 78)

Despite some notable exceptions (e.g., Seattle University's Certificate program in Sport Sustainability Leadership, (SU, 2016)), education in sport-ES has yet to be fully researched, debated, and implemented within the sport academy. Four foundational steps and two pedagogical approaches are offered to aid in this process.

Foundational Steps in Sport-ES Education:

Foundational Step 1: The Role of Research and Debate in Defining Sport-ES

The authors of this chapter propose that firstly, faculty and graduate students need to research, debate, and define sport-ES for the multiple entities within the sport industry. Given the complexity of defining sport-ES, this first step is proposed as a key measure in sport-ES education. According to Schwartz (2009), complexity generates challenges and navigational issues in ES. Further, defining sport-ES is seen as aid in managing the complexity of the topics, in particular due to the “ambiguity, controversy and uncertainty both with respect to what is going on and with respect to what needs to be done” (Lotz-Sisitka et al., 2015, p. 73). It is proposed that these challenges and navigational issues can be managed, in part, with a guiding

definition. This raises the question: Can one definition for sport-ES be found that applies to all entities within sport? For instance, can one definition be applicable to public and private sport entities, as well as amateur to the professional and not-for-profit sport? Perhaps multiple definitions will be required. Adding to the complexity of defining sport-ES, another question arises: How can the definition be applied to the diverse range of entities in sport management education? Many of these diverse entities are addressed in specific courses, such as marketing, sponsorship, ethics, law, media, globalization, social media, sport policy, the politics of sport, finance and accounting, sales/consumption, and sport equipment and apparel manufacturing. Additionally, can a definition encompass the multiple elements that can be considered when acting sustainably? This includes understanding areas such as measuring resources used; cleaner production and waste management (e.g., rethinking, reduce, recycling, renewable resources, preservation of resources); clean energy sources; strategies concerning air, land; and water management; reporting; transparency; and innovations. A definition of sport-ES that is suitable for all contexts in the sport industry is currently elusive.

Foundational Step 2: Identify a Vision for Sport-ES

Second, sustainability education has been noted to be “inherently problematic” (MacVaugh & Norton, 2012, p. 72). One of the problems facing sport-ES involves not knowing where sport wants to head with such education. Faculty and graduate student research and debate is, therefore, needed to provide visions of the future with respect to sport-ES and natural capitalism. What does the future look like if incorporating sport-ES? How can educators succeed if we do not have ideas concerning future directions in sport-ES for the multiple entities within sport? As with defining what is sustainable for organizations, (Hunting & Tilbury, 2006), sport-ES will likely benefit from a process of *envisioning* what it could, or perhaps should, be like.

Foundational Step 3: Develop Best Practices for Training Sport-ES Educators

Interestingly, it is proposed that sport management educators need to be trained at the same time as the students. This situation can be problematic as the educators are considered to be the cornerstone when it comes to transforming the educational institutions to become effective in ensuring students are empowered change agents in environmental sustainability (Lozano-García et al., 2008). Much work, thus, is needed in terms of research and debates on the best practices for training the educators in sport-ES.

Foundational Step 4: Understand the Barriers to Sport-ES Education and Devise Strategies to Overcome the Barriers

There are multiple barriers that need to be navigated to make progress in sport-ES education. For example, barriers identified for non-sport ESD/EfS include: perceived irrelevance by academic staff (Dawe, Jucker, & Martin, 2005; Sterling & Witham, 2008; Thomas, 2004), resistance among students (Perera & Hewege, 2016), and a lack of resources (Kelly & Alam, 2009; Perera & Hewege, 2016). Also, they may not have an understanding of a potential future with respect to environmental sustainability (Cotton, Bailey, Warren, & Bissel, 2009) or have a mindset for natural capitalism. It is noted that not all sport studies programs have an interest, awareness, or desire to enrich their course curricula with the integration of sport-ES and each higher education educator has a choice as to the curriculum content—so it cannot be mandated. Also, importantly, MacVaugh and Norton (2012) indicated that those in educational positions have been part of the generation that caused global environmental damage and, now, they may not be the right group to educate the next generation on how to safeguard the natural environment.

Additional barriers are outlined in the literature. These include: an already crowded curriculum (Christie et al., 2015; Dawe et al., 2005; Sterling & Witham, 2008); limited staff awareness and expertise (Ceulemans, Prins, Cappuyns, & Conin, 2011; Dawe et al., 2005; Perera & Hewege, 2016); limited institutional commitment (Ceulemans et al., 2011; Dawe et al., 2005); and difficulty in designing assessments and organizing teaching materials (Perera & Hewege, 2016; Reid & Petocz, 2006). Further, Moore (2005, p. 85) indicated that “Unfortunately, there are few rewards for educators willing to embrace alternative practices in their classrooms and even fewer classrooms that create space for social change and action” (p. 85). In the Asian business school context, another barrier has been “scepticism among faculty about the importance of sustainability, ... [and also that there is a] lack of case studies on sustainability issues” (Malik & Neal, 2012, p. 66). Furthermore, it has been argued that higher education is simply not structured to favor integration of the topic (Ceulemans et al., 2011). And finally, Lotz-Sisitka et al. (2015, p. 74) stated, “The scientific community suggests that issues need to be understood and engaged via transdisciplinary perspectives. ... Yet, the reality is that mono-disciplinarity and mono-sectoral practice and governance activities remain dominant” (p. 74).

Overall, there are multiple barriers to sport-ES education. Furthermore, there are a limited number of suggestions in the literature for overcoming the barriers. One such suggestion offered by Benn and Dunphy (2009) was that instructor consultancy programs could be used to provide support for sustainability education. This suggestion gives rise to questions such as: In sport-ES, what could this consultancy program entail? How could it be delivered? Further, what are the resource issues and what options can be used to manage these issues? Much faculty and graduate student research is needed to answer these questions, and others that aid in overcoming the difficulties facing educators with respect to sport-ES education.

Pedagogical Approaches for Sport-ES Education

In light of the global environmental situation and the need for sport to do its part to safeguard the natural environment for future generations, we argue that there are two pedagogical possibilities for sport-ES education. These pedagogical options are: (1) an introductory stand-alone sport-ES course, and (2) the integration of sport-ES across the entire sport management educational curriculum. Each approach is discussed in turn below.

Pedagogical Approach 1: A Stand-alone Sport-ES Course

We argue that all change must have a starting point, and that sport management programs can begin to integrate sport-ES into the curriculum with an initial stand-alone course. Such a course, however, is proposed as a permanent course offering within sport-ES education to provide the introduction to the topic. This approach is to be followed by long-term work to integrate sport-ES across the curriculum as outlined later in this chapter. This two-staged pedagogical approach is positioned best for the realities within the higher education institution.

Why a Stand-alone Sport-ES Course?

The rationale for an initial stand-alone sport-ES course has three components. Firstly, for students to develop a cohesive understanding of sustainability problems, key concepts, and approaches tools such as “systems-thinking” (Wiek, Withycombe, & Redman, 2011), a foundational course is required. Whilst we argue that all courses within a sport management program ought to consider the nexus between sport and the natural environment, confining such teaching and learning to the topic-level alone is inadequate for the task of providing higher education students with a comprehensive understanding of the complex sustainability challenges that are a hallmark of this relationship. Sport-ES education that is limited to a mere topic risks

the possibility of leaving students with a superficial and disjointed understanding of this nexus, and effective responses to environmental sustainability problems.

Secondly, for sport management students to develop an understanding of sport-specific sustainability issues, a foundational course is required that critically evaluates the origins of these problems as well as what they mean in a sport context, and examines the sport-specific strategies that are required to address them. This position is supported by a range of literature that argues sport has “distinct and special features” that make it a “unique institution” (e.g. Crosset & Hums, 2012; Foster, Greyser, & Walsh, 2006; Hoye & Cuskelly, 2007; Kerwin, Doherty, & Harman, 2007; Smith & Stewart, 2010; Stewart & Smith, 1999). This underpins our contention that starting with a stand-alone sport-ES course affords students with the opportunity to understand the sport-environment nexus, to “cross disciplinary boundaries” (MacVaugh & Norton, 2012, p. 75), and to synthesize sustainability problems and sport management strategy. Thirdly, the sport industry is already “undertaking environmental initiatives” as part of perceived social obligations (Carroll & Shabana, 2010; Pfahl, 2015, p. 33) so sport-ES is a legitimate subject for analysis in a sport management program.

However, it is important to note that some literature is against a stand-alone course and strongly supports only utilizing the integration to be discussed in Pedagogical Approach 2 below, rather than our proposed combination. Despite this, the collegial nature of higher education means in a practical sense that faculty staff cannot dictate to their teaching colleagues that sport-ES be integrated into existing courses. So typically, the reality is a sport management program needs to offer a foundational sport-ES course upon which topic-level student learning can be built.

Where Do We Start?

So, where can academics start to devise a stand-alone sport-ES course? Multiple questions arise. For example, what should be the intended learning outcomes for such a course? How can we include a sport-ES course with the learning resources we have already? Or do we begin by reviewing the existing courses within a sport management program, and identify opportunities for teaching sport-ES as a topic? Do we begin with our acquired discipline knowledge, and then seek where this intersects with sustainability literature? Or do we begin with our fundamental epistemological and ontological positions as scholars? Alternatively, do we start with our faculty colleagues whose trust and support we must have in order to introduce such a course in the first place? Given the diversity and complexity of modern academia, we may find ourselves starting in any one of these places, or in several of them at the same time. In this section therefore, we offer insights drawn from both the literature in this area, and from our practical experience in advocating for the inclusion of a sport-ES course in a sport management curriculum, designing it “from scratch” and successfully teaching it. In doing so, we aim to answer some “what,” “who,” “why,” and “how” questions that are typical to introducing such a course.

Situating Sport-ES within Wider Perspectives of Knowledge and Reality: Choices of Paradigm, Epistemology, Ontology, and Perspective of Nature

For educators with ambition for teaching ESD/EfS in sport management, one place they might begin designing a sport-ES subject is with themselves: that is, begin designing a sport-ES subject by reflecting on the possible paradigmatic, epistemological, and ontological stances that underpin their teaching and research. Given that there are five major paradigms within which scholars can situate themselves (Denzin & Lincoln, 2011)—positivism, post positivism, critical

theory, constructivism, and participatory action—teachers and researchers of sport-ES may wish to start by asking themselves:

1. What paradigm do I position my teaching and learning within?
2. What assumptions do I make about how knowledge is created (i.e., epistemology)?
3. What assumptions do I make about how reality is created (i.e., ontology)?

These questions are important as each of these paradigms have their own “criteria, assumptions, and methodological practices” (Denzin & Lincoln, 2011, p. 91) that can be used to inform the classroom activities and choices of assessment instruments. For example, in our experience in designing a sport-ES subject several years ago, prior awareness of the value of “constructivism” was crucial to preparing a cohesive subject design, a key influence on classroom activities that were intended to assist student learning of the course content, and the use of qualitative assessments that were consistent with the constructivism paradigm. This constructivist approach emphasized qualitative “how” and “why” questions in the course rather than quantitative questions that are more consistent with the positivism paradigm.

Another initial consideration for staff in a sport management program advocating teaching sport-ES is reflection on how they understand the relationship between humans and nature. By this we mean that sport management educators, and their students, may benefit from personal reflection on the anthropocentric *and* ecocentric views of nature. First, such reflection challenges sport-ES educators to clarify their own thinking about nature, humanity’s relationship with nature, and the value of sustainability thinking. Awareness of whether one’s world view is broadly anthropocentric *or* ecocentric facilitates a critical understanding of the nature-human relationship, and may therefore clarify choices of course content. Second, students of a sport-ES stand-alone course may also benefit from reflection on anthropocentric and ecocentric views of

nature because such awareness enables deeper understanding of systems-thinking—a vital component of thinking and acting sustainably—whose absence is identified as a key factor in environmental sustainability problems. ESD/EfS is more than just teaching students to recycle more and to use less water. As with most quality higher education, we ought to challenge students to think critically about how they understand the world. Inviting students to reflect on these two fundamental perspectives is also pedagogically consistent with similar reflective practices in other disciplines where self-awareness is considered important (e.g., student reflection on learning styles, occupational preferences, or phases of career development).

Advocacy for a Sport-ES Course in Sport Management Programs

Another important milestone in introducing a sport-ES course is to persuade faculty colleagues that it is a necessary and important innovation for inclusion within any sport management program. To do so, the preparation of a strong rationale for a sport-ES course is essential. As with any curriculum innovation, a strong argument for the change needs to underpin our advocacy to our colleagues, one that utilizes the abundance of evidence that confirms that sustainability thinking is beneficial to society, nature, and the economy, and which is increasingly a vital competency for graduates of higher education (Wiek et al., 2011).

We argue that the inclusion of such a course is entirely consistent with the growth of ESD/EfS in higher education curricula in other disciplines (G. Scott et al., 2012; Tilbury, 2011; Wals & Blewitt, 2010). ESD/EFS is also consistent with government and societal expectations that universities will play a leading role in creating a sustainable future (GUNI, 2011), and is therefore a valid part of the process of keeping a sport management program relevant and up to date with wider sectoral and societal developments. In answering the “why” question, this likely means preparing a draft outline of the proposed course that can be distributed to faculty

colleagues and discussed in program reviews. Fortunately, such advocacy is made easier today by the existence of professional associations (e.g. AASHE, 2016), and in some nations, government policy (e.g. DEWHA, 2009).

How Can We Conceptualize Teaching a Sport-ES Course?

Before any higher education course can be adequately designed, a conceptual framework is needed for making the series of inter-related decisions that are required for a coherent, logical, and meaningful learning experience for students. To achieve this, we argue that the constructivist perspective of learning and teaching is useful as it is already well established in the literature, and has been the basis for the development of the “constructive alignment” model that is applied widely in higher education (Biggs, 2003; Biggs & Tang, 2007, 2011). The principle of constructive alignment assumes that teachers begin the learning process by designing student learning outcomes, and then *align* their teaching and assessment to those outcomes (Biggs, 1996, 2003; Biggs & Tang, 2007, 2011). It also assumes that learning is not “transmitted from teacher to learner” (Biggs, 2003, p. 1; Shuell, 1986), but rather, is *constructed* by students through learning activities. This active learning approach has been endorsed by some ESD/EfS literature (MacVaugh & Norton, 2012; Perera & Hewege, 2016).

From our experience designing a sport-ES course, we have found valuable a variation of Bigg’s constructive alignment model, Nicholson and Stewart’s (2004) *Strategic Aligned Learning Model* (SALM). The SALM is a four-part framework that consists of the following elements: (1) learning *objectives* (i.e., outcomes), (2) learning *resources*,¹ (3) learning *activities*, and (4) learning *assessments*. Consistent with Biggs’ constructivist model, Nicholson and Stewart argued that any educator must begin by asking themselves: “What is it that I want the

¹ The SALM extends Bigg’s constructive alignment model by adding a fourth element: learning resources.

students to learn?” This question is answered to a significant extent when the educator sets the learning objectives/outcomes. To aid learning, the SALM systematically aligns learning objectives, resources, activities, and assessments. That is, learning assessments are based on the learning activities, the learning activities are based on the learning resources, which in turn are based on the original learning objectives. Nicholson and Stewart argued that “students *construct* meaning through relevant learning activities” such as reading, discussion, and writing, and so the teacher is therefore is a “catalyst” for learning. An overview of Nicholson’s (2005) SALM is offered in Table 1 below.

Table 1: Strategic Aligned Learning Model (SALM) of Teaching and Learning (adapted from Nicholson & Stewart, 2004)

Phase 1 – Learning Objectives	Phase 2 – Learning Resources	Phase 3 – Learning Activities	Phase 4 – Learning Assessments
Course (or Topic) learning outcomes determining the appropriate resources, activities and assessment in Phases 2, 3 and 4.	Resources provided or identified, to assist with achieving the outcomes identified in Phase 1, and inform the activities in Phase 3.	Activities undertaken, demonstrating knowledge gained in Phase 2, honing skills in preparation for Phase 4, and achieving the outcomes of Phase 1.	Assessment tasks to demonstrate that the outcomes in Phase 1 have been achieved and the activities in Phase 3 were completed successfully.

For a sport-ES course, the SALM might lead to the examples provided in Table 2.

Table 2: Two Examples of How the SALM Might Be Applied in a Stand-alone Sport-ES Course

Phase 1 – Learning Objectives	Phase 2 – Learning Resources	Phase 3 – Learning Activities	Phase 4 – Learning Assessments
Understand the reasons for key global environmental problems.	Journal articles, scientific reports, film/documentaries, websites	Reading, class discussion, critical reflection of the learning resources.	Essay/research paper
Critically evaluate the environmental sustainability of an existing sport organization	Sport-ES textbook, journal articles, case studies, websites	Reading, class discussion of textbook chapter or case studies, analyze the ecological (or carbon) footprint of a sport organization, field trip to a LEED-certified sport stadium.	Case study report and/or presentation, synthesis report that includes ecological (or carbon) footprint analysis of a sport organization, written reflection on a field to a LEED-certified sport stadium.

What Should be Taught?

Fortunately for scholars contemplating the introduction of a sport-ES course, this question is much easier to answer today than it was several years ago although educators will still need to decide what to emphasize. In recent years, the content available for sport-ES education has advanced significantly owing to a range of scholarly publications (e.g. Casper & Pfahl, 2015b; Inoue & Kent, 2012; Mallen, Chard, Keogh, & Mansurov, 2015; McCullough et al., 2015; Pfahl, 2011; Trendafilova & Nguyen, 2015). The work of these scholars has added considerable depth to the sport-specific aspects of ESD/EfS, and builds upon earlier contributions that were written for practitioners as much as scholars (e.g. Chernushenko, Stubbs, Van Der Kamp, & UNEP, 2001; Stevens, 2008). Common threads among these learning resources has been initial discussion of the environmental basis to calls for sustainability, followed by strategic or tactical responses, and then sport-specific considerations (e.g., marketing, sponsorship, facility management).

However, educators seeking a greater emphasis on the sociological dimensions of sustainability, or on the organizational implications of particular environmental problems (e.g., climate change), may need to supplement these sport-specific ES texts with non-sport management literature (e.g. Benn et al., 2014; Linnenluecke & Griffiths, 2015; Pinkse & Kolk, 2012; Weinhofer & Hoffmann, 2010). Nevertheless, there is now much sport-specific literature available to support a stand-alone sport-ES course, and particularly with developments in North America (e.g., Leadership in Energy and Environmental Design, Green Sports Alliance), there are now sufficient sport-specific case studies to enhance student learning.

Whilst there is no single way to design a sport-ES course, one possibility is to take a competency-based approach. Five competencies have been identified as appropriate outcomes of

ESD/EfS education, and may therefore also apply to sport-ES. These are: (1) systems-thinking, (2) anticipatory, (3) normative, (4) strategic, and (5) interpersonal competencies (Wiek et al., 2011, p. 205). Such competencies are considered valuable for the task of helping students to become future “change agents” and “problem solvers” (Wiek et al., 2011; Willard et al., 2010), and therefore could be used to guide the development of learning objectives for a sport-ES course.

Of these five competencies identified by Wiek et al., sport-ES educators should note that *systems-thinking* in particular is a valuable tool for ESD/EfS in higher education. Systems of the environment, society, and business are widely discussed in ESD/EfS literature, and so systems thinking is also consistently identified as useful for ESD/EfS (e.g. Corcoran & Wals, 2004; Hunting & Tilbury, 2006; MacVaugh & Norton, 2012; G. Scott et al., 2012; Sterling, 2004; Wiek et al., 2011). As T. Porter and Córdoba (2009, p. 324) note, systems thinking can help students to see themselves in a wider context that is both natural and humanmade, and understand the “complexity and tensions behind sustainability-related issues and provide frameworks and tools for developing and implementing solutions” (p. 324). The “fundamental guiding principle” of systems thinking—that the organization ought to be understood as “a system to design meaningful interventions”—opens up the potential for students to be agents of change for sustainability in sport organizations. However, sport-ES educators may need to appreciate that there are three “broad” options for systems thinking—functionalist, interpretive, and complex adaptive systems (CAS)—and that these three views encourage the application of different theories. For instance, the functionalist view encourages the use of hard and general management theories; the interpretive view encourages symbolic interactionism; and the CAS

view encourages the application of complexity theory, non-linear systems, and complex adaptive systems when teaching sustainability.

Another possible approach to designing a sport-ES course is to adopt a thematic approach supported by broader organizational perspectives. In a thematic approach, sport-ES educators might begin with a foundational theme of environmental arguments for sustainability. By beginning with the extent and nature of global environmental change, such as that summarized in the introduction to this chapter, a compelling platform would be created for students upon which more sport-specific issues and concerns can be overlaid. Examples of such issues might include over-population, human consumption of natural resources, anthropogenic climate change, and associated impacts on land, water (oceans and freshwater), and atmospheric and biodiversity ecosystems. Having established the *environmental case* for sustainability, sport-ES educators might then link such environmental change to themes of *social* impacts, and then a theme of *business* impacts.

With this basic structure as an underpinning, sport-specific and discipline-specific themes are contextualized and so deeper analysis is possible. For example, sport-ES educators from a sport sociology background might choose sociological perspectives as the frame for studying how sustainability intersects with sport. Alternatively, sport-ES educators from the sport management background might use theoretical perspectives of organizations (e.g., systems theory, institutional theory, critical thinking theory, resource-based view) as the frames for such learning. Building upon such a basic course structure, sport-ES educators can then scaffold the “inside-out” and “outside-in” organizational perspectives advocated in management literature (M. E. Porter & Kramer, 2006; M. E. Porter & Reinhardt, 2007), and which has been applied in recent sport-ES literature (e.g. Casper & Pfahl, 2015a; Casper & Pfahl, 2015b; Dingle, 2014).

The “inside-out” perspective simply refers to the view that organizations (the “inside”) have an impact on the natural environment in which they operate (the “outside”). Such impacts are usually adverse ones and include direct ones such as pollution of all kinds and land clearing, but also indirectly to problems like climate change through greenhouse gas (GHG) emissions. In contrast, the “outside-in” perspective is simply one where the natural environment (the “outside”) has the potential to disrupt the operations of organizations (the “inside”) (Linnenluecke & Griffiths, 2012; Linnenluecke, Griffiths, & Winn, 2013; Linnenluecke, Stathakis, & Griffiths, 2011). Examples of such outside-in impacts include extreme weather events such as storms, floods, and droughts that damage buildings, equipment, or logistics systems. In a sporting context, examples of this outside-in phenomenon include the impacts of a warmer climate and extreme weather events (e.g., the impacts of a warmer climate on snow cover at the 2014 Sochi Olympics (Koch, 2014), or on pond hockey in the USA (Fairley et al., 2015), or the extreme weather that led to the flooding of Suncorp Stadium in Australia in 2011).

As Winn & Kirchgeorg (2005) note, management researchers have concentrated more on the inside-out perspective than outside-in, and the same is perhaps true of literature in the sport-ES field. Whilst this claim is not empirically validated, given that sport-ES literature to date is arguably focused on the impacts of organizations on the natural environment rather than nature’s impact on organizations, that this may also apply to sport-ES education represents a potential blind spot in such teaching. This is because it does not account for the impacts of the widespread global change that has been empirically documented, on sports that are vulnerable to such change, especially those that are directly climate-dependent. To overcome this limitation, teachers of sport management contemplating a stand-alone sport-ES course can supplement their learning resources with a range of both sport and non-sport literature (e.g. Berkhout, 2012; Chard

& Mallen, 2012, 2013; Dawson & Scott, 2013; Dolf & Teehan, 2015; Fairley et al., 2015; Phillips & Turner, 2014; D. Scott, Steiger, Ruty, & Johnson, 2014; Steffen et al., 2015).

The Faculty-level Challenge for Integrating ES

Assuming that there is adequate institutional support (e.g. support from university-level leaders or the Head of School) and sufficient resources and expertise, another challenge worthy of consideration is that of overcoming the skepticism of faculty colleagues who may see sport-ES education as “fashion” rather than serious and important scholarship. To overcome this, advocacy *before, during, and after* introducing sport-ES education is needed in two ways: first, having a sport-ES “champion”; and second, having “teams” of ES champions (Hunting & Tilbury, 2006). Advocacy for ES is always more effective when groups of people are making the “case” for such change, so as Scott et al. (2012) suggest, academics hoping to introduce a sport-ES course need to build coalitions with supportive colleagues who understand the value of sustainability to industry, society, and the natural environment. Limiting such advocacy to a lone ES champion risks the hard-won sport-ES course being omitted at the next course review or when that champion leaves to join another institution.

Pedagogical Approach 2: Integrating Sport-ES Across the Curriculum

Following the immediate inclusion of an initial stand-alone course to the sport management curriculum, the authors of this chapter propose that an integrated sport-ES approach be assimilated across the sport management curriculum for advanced understandings of the topic. This integration approach responds to the call for academic institutions to reorganize in order to relate teachings to society’s complexities and dynamic systems (Miller, Muñoz-Erickson, & Redman 2011). According to Iyer-Raniga and Andamon (2016), “The general direction of education for sustainability is moving increasingly towards integration and innovation” (p. 105).

This position is supported by multiple researchers that purport sustainability is transdisciplinary and can be taught across fields (Christie et al., 2015; Dey, Kurucz, & Colbert, 2010; MacVaugh & Norton, 2012). In sport management, this means integrating sport-ES across fields such as marketing, sponsorship, finance, economics, globalization, sport for development, facility and event management. According to Moore:

The pedagogy of sustainability education is about creating spaces where disciplines are not piled on top of one another but instead integrated in new ways. Educators need to move into these spaces as collaborators and cocreators of knowledge instead of experts and non-experts. By changing the practices in classrooms, there is a potential for transformations to occur—for individuals, organizations, and systems. (p. 80)

This type of integration is beyond the topic being added to one lecture within an ethics or social responsibility course, or what MacVaugh and Norton (2012) called a “bolt-on” topic. It is not proposed that courses need to be fully revised for sport-ES; instead, the integration needs to be part of the regular issue management discussion, and the production and consumption developments, for the multiple fields within sport management. It is instituting natural capitalism into all decisions within the business of sport.

The transformation for sport-ES to be integrated within educational programs, however, can be difficult to generate (Moore, 2005). Lotz-Sisitka, Wals, Fronlid, and McGarry (2015) argued that this difficulty stemmed from the fact that we “need to learn how to cross disciplinary boundaries” (p. 74). Learning for transdisciplinary education may take years to develop and incorporate within sport management programs. This difficulty and time frame is the key reason why we argue that the stand-alone sport-ES course is the introductory stage for sport-ES

education. A generation of students simply cannot wait for educators and programs to learn, adapt, and to fully prepare them for their future.

The question, thus, arises: “If transformative learning is complex, uncomfortable, and time consuming, how do academics propose to make the radical shift toward it?” (Moore, 2005, p. 84). This is a key question in sport management and a guiding body of literature has yet to be developed. There is, however, some literature that could aid in our understandings if applied to sport management programs. For instance, Wiek, Xiong, Brundiers, and van der Leeuw (2014) described the problem and successes of the integrated undergraduate and graduate sustainability program at the Arizona State School of Sustainability. Also, Marcus, Coops, Ellis, and Robinson (2015) discussed the experiences at the University of British Columbia, Canada, when integrating environmental sustainability throughout the curriculum. Further, MacVaugh and Norton (2012) noted that sustainability was integrated across the curriculum at the University of Gloucestershire Business School. They defined their integration as “de-emphasising disciplinary boundaries” (p. 74).

Overall, as outlined above, sport management literature in environmental sustainability is advancing, but there is a lack of focus on pedagogy in sport-ES. The authors of this chapter call upon faculty and graduate students to conduct research to guide educators towards an integrated pedagogy for sport-ES. This includes the study of educator training for the topic and integration strategies, including best practices. Finally, research is needed to aid in re-framing what progress means in sport, and to offer re-imaginings of sport in terms of sustainability that respects the limits of our planet.

Conclusions

Sport-ES education is an emerging field that is a rational response to global

environmental change, and is consistent with wider developments in ESD/EfS in higher education. To advance the field of teaching and learning sustainability, especially that of environmental sustainability, we have argued that sport-ES should be integrated into every higher education program for sport studies/management. We have therefore proposed that there are two major pedagogical options for both undergraduate and graduate sport programs: (1) a stand-alone course; and (2) sport-ES that is integrated across multiple courses. A stand-alone course enables students to have an in-depth introduction to ES that allows them to then explore sport-ES in a more integrated way within multiple courses, and eventually to apply this to multiple sport management specializations upon graduation. Given the urgency and scale of the need for all disciplines to be environmentally sustainable, including sport management, a mature sport management program should have both a stand-alone foundational course *and* ES integrated across multiple courses. However, we recognize that within a crowded curriculum, achieving both stand-alone and integrated sport-ES courses is still no easy thing to do. In light of this reality, we have outlined strategies for teaching and learning sport-ES within such constraints. However, to facilitate such courses and programs, sport scholars need to be prepared to undertake research into the teaching and learning of sport-ES. With this in mind, a sport-ES education research agenda should feature different levels of analysis including principles and theories of teaching and learning, course-level design, and student-level experiences of learning resources, activities, and assessments.

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