Situating PRME's Impactful Five (i5) in the Landscape of Higher Education Pedagogy

Bridging Theories, Principles, and Practices

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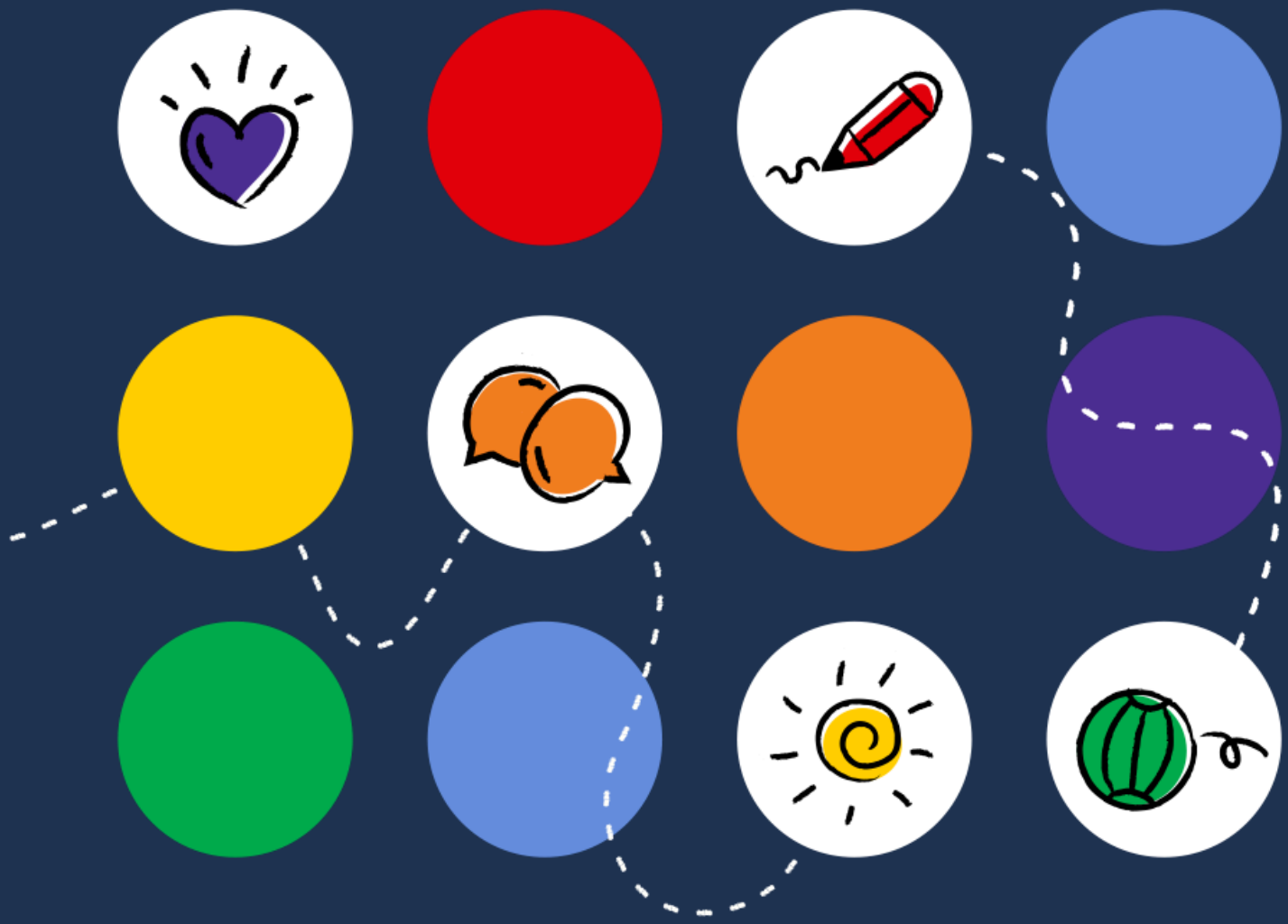

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Introduction

The Impactful Five (i5) *Framework for Developing Responsible Leaders* is a student-centered holistic pedagogy whose methodological approach can be traced back to the earliest origins of teaching and learning practice, and this across multiple regional, cultural, ideological, and even classical traditions. Seeking impact in any educational endeavor—here understood as the effective and efficient passing of meaningful and *transformative* knowledge, skills, attitudes, and behaviors from one generation to another—has always been *the* central concern and goal of educators. Yet it is precisely because the outcome of high impact practice has always fallen short of the promise that the i5 Framework is the welcome and innovative approach that it is.

i5 and Pedagogical Landscapes

This White Paper explores where the i5 Framework and its twenty constituent Signature Moves fit into selected regions of the pedagogical landscape of higher education. The underlying concepts of the i5 Framework of teaching and learning did not emerge ex nihilo from the business and management education sector. They were not invented by LEGO, UN Global Compact, PRME, or Harvard University. Both in spirit and practical application, the pedagogical lineage of the i5 Framework draws from and synthesizes a rich body of established educational theory and practice. As such, this paper explores complementarities between the i5 Framework and the following pedagogical approaches to teaching and learning: Constructivist, Experiential, Feminist, Socratic, Outdoor and Environmental Education, Education for Sustainable Development (ESD), Global Citizenship Education (GCE), Critical Ecopedagogy, and Indigenous Pedagogy.

i5 and the Meaning of “Impact”

This White Paper also investigates the multifaceted concept of "impact" as defined by i5, addressing its historical context, underlying nature, and dynamic characteristics. Initially, we explore the notion of impactful teaching and learning, emphasizing how educators and learners can engage in more efficient learning processes, enhance their educational experiences, and cultivate a greater enjoyment of learning.

We also extend our inquiry to the paradigm of Teaching and Learning *for* impact, which emphasizes intentional and purpose-driven education. This perspective highlights the importance of aligning pedagogical practices with desired learning objectives related to responsible management, sustainability, and societal transformation.

In this process, we transition from considerations of "how you teach" to a more profound examination of "what you teach" and, more critically, to "why you teach." This shift requires that we cultivate not only conformative changes in knowledge acquisition but also a radical transformation and "*re-foundation*" in students' being, values, thought processes, and practices, particularly in the context of education for sustainability and sustainable development.

Objectives and Methodology

The objective of this White Paper is to explore where the i5 Framework and its twenty constituent Signature Moves fit into the wider pedagogical landscape of higher education. To this end, it provides a brief discussion (with corresponding synoptic charts) for several diverse pedagogical frameworks, such as Constructivist pedagogy and Experiential education, as well as more intentionally disruptive and transformative frameworks such as Feminist pedagogy, the Socratic Method, Education for Sustainable Development, Ecopedagogy, Global Citizenship Education (GCE), and Indigenous pedagogy.

The primary objective of this mapping exercise is two-fold:

1. To establish common ground: To provide a means for educators already using such pedagogical approaches to connect with the i5 Framework, and to identify i5 practices already congruent with their current practice. Moreover, this mapping exercise provides evidence, where available, of the impact of such pedagogies both within and beyond the classroom that may be similarly applicable to i5 teaching and learning methods.
2. To widen horizons: To highlight both positive impact of, and potential complementarities with other practices, thus highlighting other pedagogical approaches educators may wish to explore.

This comparative approach seeks to build bridges between the i5 Framework and other interesting and tested pedagogical theories in conjunction with their relevance to established and evolving leadership competencies.

The following pages provide an overview of several pedagogical theories, the principles and practices they promote, and the i5 Characteristics and Signature Moves for which they may be said to align. We then expand on selected principles discussing their convergence or divergence with i5. Moreover, while the discussion of impact unfolds throughout the paper, each chapter has a brief section exploring the evidence found in the research literature.

For this review, several terms as applied to teaching and learning processes require some definitional clarity. Our use of the term paradigm refers to an overarching philosophy of knowledge and learning—such as positivism or constructivism—that informs the process of both what we teach and how we teach. The term pedagogy we reserve for an interrelated collection of theories, values, assumptions, and underlying processes related to how formal, informal, and non-formal learning takes place. The terms methods and practices we reserve for the wide array of in-class and out-of-class activities designed to promote specific learning objectives. Building on this hierarchy, we organize our review as follows: we start with overarching paradigms, then focus on pedagogical theories, explore their variations and manifestations, outline their major underlying principles and practices, and finally discuss their connections and potential applicability to the i5 Framework.

Situating i5 in the Landscape of Higher Education Pedagogy

The i5 Framework

For educators unfamiliar with the i5 Framework, the table below provides an overview of its five Characteristics and twenty Signature Moves. Educators may wish to review the i5 Playbook prior to reading this current article.

Characteristics	Signature Moves			
Make Learning Meaningful 	**Role Modeling** Demonstrating responsible leadership competencies in observable ways that students can understand and possibly emulate	**Personalizing** Attuning to current students' backgrounds, interests and needs and giving them more agency to design their learning	**Surfacing** Uncovering the values, norms and biases that exist in ourselves, ideas, societies, and systems	**Dignifying** Honoring and supporting the identities and perspectives of minoritized and marginalized groups in your context
Foster Joy & Well-being 	**Delighting** Infusing fun, surprise, wonder, and celebration into the teaching and learning experience	**Sensing** Providing space for students to notice and navigate a range of emotions within themselves and others	**Contemplating** Guiding students in reflection about their inner, spiritual, and physical selves through contemplative practices and meta-reflection	**Rippling** Enabling students to grasp the profound impact of individual and collective actions in an interconnected world
Develop Supportive Social Interaction 	**Communifying** Establishing a community in which students can engage with each other in healthy, trustworthy, and productive ways	**Braving** Guiding students to bravely engage in controversial topics, complex experiences, and difficult conversations	**Bridging** Connecting students to different cultures, disciplines and perspectives in ways that broaden and clarify their understandings	**Teaming** Organizing group experiences that explicitly develop students' critical communication and interpersonal skills
Facilitate Active Engagement 	**Animating** Incorporating activities that focus students' attention, energize them, or ask them to perform an action that invites them to physically move in their space or surroundings	**Authenticating** Expose students to real-world issues and engage them in experiences that are authentic to their current and future realities	**Linking** Building meaningful links and relationships between students and industry professionals, businesses, community organizations, and others	**Teching** Creating opportunities for your students to use technologies in effective and healthy ways
Design for Iteration 	**Exploring** Designing open-ended, sometimes ill-structured, learning experiences where students are encouraged to mess about, experiment with ideas, and take calculated risks	**Prototyping** Embedding cycles of ideation, development, drafting, feedback and revision into assignments and learning experiences	**Revisiting** Going back to artifacts of students' thinking about a topic over time to reveal the progression of their understanding throughout a learning experience	**Compassing** Decentering testing and summative grading to focus more on the student learning journey

Bridging i5 and Constructivist Pedagogy

Since its emergence in the mid-20th century as an insightful and stern reaction to the hierarchical and teacher-centric tradition of 19th century education, constructivism now constitutes one of the most influential philosophies in 21st century education (Krahenbuhl, 2016). Moreover, the constructivist critique has inspired the development of a wide variety of reformist and critical teaching theories and practices that continue challenging assumptions of what currently constitutes both good practice in teaching specifically, and inclusive, equitable, and lifelong quality education for all more generally as articulated in SDG-4 of the UN Sustainable Development Goals (United Nations, n.d.).

The constructivist pedagogies emerging from this movement are considered "reformist and critical" because they challenge the previous intellectual movement of Behaviorism (Skinner, 1938) that placed so much emphasis on the observable *behavior* of students after a given learning activity rather than the underlying and hidden *thought processes* at work before, during, and after the learning activity. It was this "transmissive" theory of teaching and learning of Skinner's that Freire (1968/1972) disparaged as a politically and socially conservative "banking model" of learning whereby teachers "deposit" knowledge into passive learner's empty heads rather than "drawing out" knowledge created within inquisitive and hungry minds. It is precisely this latter process—engaging learners in active meaning-making activity—that is the common thread within constructivism's many manifestations. It's what defines constructivist theory as a "transformative" approach to teaching and learning, representing as it does a paradigm shift from "knowledge as a product to knowledge as a process" (Allen, 2022).

As an epistemological view of the origins and nature of knowledge, constructivism holds that "knowledge is derived in a meaning-making process through which learners construct individual interpretations of their experiences and thus, construct meaning in their minds" (Krahenbuhl, 2016). Within learning theory, constructivism posits that people learn not through the passive acquisition of knowledge through direct lecture-based instruction, but through a process of constructing an understanding of the world through personal experiences, social interaction, facilitated dialogue, active participation in one's learning, and the the integration of new information and learning into existing knowledge and prior learning.

A synthesis of Jean Piaget's (1970) theory of cognitive development, Lev Vygotsky's (1978) theory of social constructivism, and Ernst von Glaserfeld's (1995) radical constructivism, the pedagogy of constructivism resides among the most influential learning theories in contemporary formal education—informing as it has the assumptions of so many other pedagogies, whether experiential, feminist, intercultural, environmental, ecological, or indeed the i5 Framework.

Because lack of training, time, and incentive constitutes the main barrier to increasing pedagogical knowledge, skill, and innovation in higher education (Brownell & Tanner, 2017), it's possible that management education instructors may be unfamiliar with the underlying theory of constructivist pedagogy. But it's very unlikely that such instructors are not using at least several constructivist teaching techniques, so mainstream have they become. Constructivism, for example, underlies the impulse toward active learning and experiential education, from which business education has drawn so heavily in the form of problem-based and project-based learning, collaborative and cooperative group learning, project-based capstone courses, the embedded internship, company visits, direct personal engagement with industry leaders, and more recently for engineering students, *maker education* (Honey & Kanter, 2013).

With its emphasis on the complex ways in which knowledge is socially co-constructed by student, classmate, and instructor together—each bringing their widely diverse personal experiences, prior learning, feelings, and acquired understandings into the process; and each encouraged to build learning through active social interaction and personal engagement—constructivism also provides the epistemological foundation upon which feminism (discussed below) built an impactful pedagogy around the principles of diversity, inclusion, empathy, community building, privileging the individual student voice and personal experience, power sharing, and altered teacher-learner roles.

As for the i5 Framework, a close inspection of its twenty i5 Signature Moves, as displayed above, shows just how much the i5 pedagogy owes to constructivist epistemology. Except perhaps for **Teching** (*Actively Engaging*), all i5 Signature Moves emphasize the importance of engaging students directly and personally in meaningful, collaborative, reflective, and exploratory activity if any chance of transformative learning is to take place.

Theory of Constructivist Pedagogy (Piaget, Vygotsky, Glaserfeld)	**Principles and Practices Promoted** (Adapted from Learning-Theory & Research — GSI Teaching & Resource Center, UC Berkley, 2016)	**Related i5 Charactheristics**	**Related i5 Signature Moves**
Constructivism in education is a theory positing that people learn not through the passive acquisition of knowledge through direct instruction, but through a guided process of constructing an understanding of the world through personal experiences, social interaction, facilitated dialogue, active participation in one's learning, and the integration of new information and learning into existing knowledge and prior learning. <u>Variations and Manifestations</u> • Social constructivism • Experiential learning • Integrative learning • Student-centered learning • Problem-based learning • Inquiry-based learning • Project-based learning • Nature-based learning • Phenomenon-based learning • Competency-based learning • Discovery-based learning • 21st century learning • Situated learning • Cognitive apprenticeship • Montessori education • Progressive education • Theories of John Dewey • Waldorf education • Outdoor education • Gamification	**Knowledge is constructed upon prior learning.** This is the foundational assumption of constructivism—that students process information through the lens of their own experiences of the world. They construct their understanding of the world by connecting it to what they know from their own past experiences and prior learning.	**Meaningful**	**Surfacing**
	Knowledge and learning are personal. The backbackground, experiences, culture, and self-identity of learner is critical to how they understand the world, process new knowledge, and integrate it into existing knowledge.	**Meaningful** **Joyful**	**Personalizing** **Sensing** **Contemplating**
	Learning is social and cooperative. Building knowledge and understanding is a social process in which interaction, collaboration, cooperation, and interpersonal engagement with diverse others make learning relevant and meaningful.	**Socially Interactive**	**Communifying** **Teaming**
	Learning requires context and relevancy. Students learn best when new content relates to their existing knowledge, beliefs, competencies, and experiences. Learning must be perceived as meaningful, authentic, and situated around students' practical needs and within real-world settings students appreciate and care about.	**Meaningful**	**Personalizing**
	Learning is an active cognitive process. Students must actively participate in their learning, take responsibility for their progress, show initiative and curiosity for learning, engage in speculation and debate, challenge conventional or lazy thinking, and build motivation and desire for learning where it lacks. Learning can never be passive.	**Actively Engaging** **Joyful** **Iterative**	**Animating** **Authenticating** **Delighting** **Revisiting**
	Learning happens by doing. Practical, hands-on, experiential learning helps integrate information into students' cognitive architecture. Instructors should design active learning activities that align to the desired cognitive, affective, and competency-based learning outcomes.	**Joyful**	**Contemplating**
	Knowledge is holistic and integrated. The artificial organization of knowledge into disciplines should serve to facilitate our understanding of the world, not define it. Constructing meaningful knowledge requires critical thinking, integrated reasoning, systemic thinking, and cross-disciplinary analysis. Integrative learning helps students relate their knowledge to, and draw inspiration from other disciplines, theories, and ideas.	**Socially Interactive** **Actively Engaging**	**Bridging** **Linking**
	Learning requires challenge and support. Instructors facilitate the process of navigating between past knowledge and knowledge under construction. Instructor / mentors help by providing the "scaffolding" students need to build new knowledge, and then remove it as students become more autonomous.	**Meaningful** **Socially Interactive**	**Role Modeling** **Braving**

Impact in Constructivist Pedagogy

Taking but one example from the i5 Framework, the constructivist outlook on the requirements of building student knowledge and learning is best reflected in the first of the i5 Characteristics—*Make Learning Meaningful*—and its four signature moves: **Role Modeling**, **Personalizing**, **Surfacing**, and **Dignifying**. *Demonstrating responsible leadership competencies in observable ways that students can understand and possibly emulate* (i.e., **Role Modeling**), and *attuning to current students' backgrounds, interests and needs that give them agency to design their learning* (i.e., **Personalizing**), together requires self-analysis and a sense of critical self-awareness (Gosling & Grodecki, 2020; Laasch et al., 2020; Muff et al., 2022) without which it is difficult to create a genuine learner-centered and caring (Meyers, 2009) environment that students come to trust, engage with, and help cultivate. In addition, such introspection and fostering of motivation and self-awareness are all leadership competencies students can develop in classrooms environments intentionally designed around this i5 Characteristic.

Similarly, the i5 Signature Moves of **Surfacing** (*Uncovering the values, norms and biases that exist in ourselves, ideas, societies, and systems*) and **Dignifying** (*Honoring and supporting the identities and perspectives of minoritized and marginalized groups in your context*) address the central concerns of constructivist learning—helping students make meaning of the world around them (Kegan, 1982; Mezirow, 1990) through the lens of their personal experiences, social interactions, prior learning, individual cultural identities, and emotional make-up. It is here that constructivist approaches to teaching and learning have opened up so many pathways to pedagogical innovation in, for example, critical theory, deconstructivism, intersectionalism, critical race theory, feminism, values exploration, intercultural learning, comparative analysis (Muff, 2013) and what one author referred to as "culturally relevant pedagogy" (Ladson-Billings, 1995) and another—seeking to perpetuate and foster (i.e., to sustain) linguistic, literate, and cultural pluralism as part of the democratic project of schooling—as "culturally sustaining pedagogy" (Paris, 2012).

As an antidote to the teacher-centric, positivist-behavioralist model of "sage-on-a-stage" lecturing, a constructivist pedagogy can't guarantee that truly transformative learning will take place. However, considerable teaching experience since the 1970s, as well as the more recent research into the Scholarship of Teaching and Learning (SOTL), confirm that little transformative learning takes place outside the constructivist

paradigm and without the “guide-by-your-side” mentoring support that only a trained, self-aware, and caring instructor can provide (Vande Berg et al., 2012, pp. 9–10).

That said, there is research (Kirschner et al., 2016) into the impact of constructivist pedagogies indicating that such teaching strategies—at least as applied to discovery learning, problem-based learning, experiential learning, and inquiry-based leaning—are likely to fail when students have an insufficient foundation of prior knowledge and learning upon which they can build new knowledge; when the support, guidance, and scaffolding lack sufficient competence, robustness, and sustained attention; and when, logically, class enrollments are too big to accommodate such flexible, dynamic, and “unstructured” pedagogies. Indeed, student-centered and experiential learning—the essence of constructivism—is impossible to deliver effectively in large introductory survey courses grounded in lecture-based *cours magistraux*.

And for all their pedagogical merits, a quick glance through the i5 Signature Moves shows their own limitations in the face of this challenge—they are largely conceived for smaller, seminar-like, and more advanced educational settings.

While constructivist pedagogies enrich an instructor’s theoretical understanding of the underlying cognitive processes of student learning and the social and environmental factors that promote and foster co-constructed learning, they don’t provide the practical and behavioral “check list” of heuristics that the i5 Framework does so well.

The twenty i5 Signature Moves—i.e., good rules of thumb—translate the otherwise complex and multifaceted responsibilities of the constructivist instructor into a manageable list of easy-to-remember roles, attitudes, and values that, if regularly introduced into the classroom, would go far in creating a student-centered learning environment. And while the i5 Framework doesn’t explicitly acknowledge its debt to constructivist thinking, much less provide a structured articulation of constructivist learning theory, it does provide busy and possibly overstretched management education instructors with a list of some tested principles of good practice that, if class size permits, are likely to result in greater student engagement, satisfaction, and learning.

Bridging i5 and Experiential Education

While there are many sources of theory and practice related to the experiential education most well-known via John Dewey (Williams, 2017; Sikandar, 2016) and David Kolb (McLeod, 2024; Manolis et al., 2013), the Society for Experiential Education (SEE) presents a useful list of *Eight Principles of Good Practice* that underlie the basic pedagogical elements of experiential education (National Society for Experiential Education, n.d.), many of which align closely to the i5 Characteristics and 20 corresponding Signature Moves. While alignment can be easily demonstrated across multiple areas, only a sampling of examples is needed to highlight the similarity and convergence of these two pedagogical frameworks.

Theory of Experiential Education	**Principles and Practices Promoted** (SEE 8 Principles)	**Related i5 Characteristic**	**Related i5 Signature Moves**
Experiential education is a philosophy that informs many methodologies in which educators purposefully engage learners in direct experience and focused reflection in order to increase knowledge, develop skills, clarify values, and develop students' capacity to contribute to their communities. Variations & Manifestations • Active learning (engagement & motivation) • Internships • Place-based learning • Service learning • Community-based learning • Undergraduate research • Education abroad • Capstone courses & projects • Problem-based learning • Public sphere pedagogy • Vocational education • Outdoor education • Adventure education • Environmental education • Maker education (i5-Prototyping, Teching) • Formal, informal, and non-formal	**Intention** Alignment between the chosen methodology and the knowledge to be demonstrated, applied, or gained from it	Meaningful	Role Modeling
	Preparedness and Planning Having a sufficient foundation to support a successful learning experience, while remaining flexible to allow for adaptations as the experience unfolds	Iterative	Exploring
	Authenticity Ensuring the learning experience has a real-world context and is relevant and meaningful to an applied setting or situation	Actively engaging	Authenticating
	Reflection Allowing learners to test assumptions, evaluate outcomes against past knowledge, and adjust their understanding throughout their learning	Joyful	Contemplating
	Orientation and Training Establishing a common understanding about each other, the context and the environment in which the experience will take place and enabling the learner to expand their skills and context appreciation	Meaningful	Personalizing

	Monitoring and Continuous Improvement Implementing a dynamic and participative feedback loop	**Iterative**	**Revisiting**
	Assessment and Evaluation Revisiting goals established prior to the learning experience (Intention) and the experience itself	**Iterative**	**Compassing**
	Acknowledgment Collectively recognizing progress and accomplishment	**Joyful**	**Delighting**

Just as the i5 Framework encourages instructors to "*expose students to real-world issues that engage them in experiences that are authentic and relate to current and future realities*" (*Actively engaging* - **Authenticating**), so too does SEE Principle 3 on "Authenticity" affirm that the learning experience must have a "real world context and/or be useful and meaningful in reference to an applied setting or situation" (National Society for Experiential Education, n.d.). It is here that alignment may be most apparent in these two frameworks—the importance of providing students with the opportunity to gain knowledge that they know, and feel is both intrinsically valuable and relevant to their personal needs and professional futures.

Another point of congruence is SSE principle on "Reflection." Recognized as "the element that transforms simple experience into a learning experience [and in which the learner] must test assumptions and hypotheses about the outcomes of decisions and actions taken, then weigh the outcomes against past learning and future implications" (National Society for Experiential Education, n.d.), it aligns with the i5 practice of **Contemplating** (*Joyful*), which "*creates restorative reflective opportunities to reconnect with one's values and purpose [that] help students examine their thoughts, emotions and beliefs to gain a deeper self-knowledge*." The act of integrating critical reflection into student learning and development is perhaps the most unappreciated—and thus most unused—instructional technique instructors turn to both in and out of the classroom.

Without guided reflection—which itself must be taught—little impactful and long-lasting learning takes place. It is, for example, at the heart of life-long learning strategies. And while the i5 Framework situates such reflection as a *Joyful* part of learning, the theory and practice of reflection / contemplation / mindfulness are embedded widely across the i5 Framework and Signature Moves.

The approach of SEE also brings an interesting perspective to "Assessment and Evaluation." For SEE, "assessment is a means to develop and refine the specific learning goals and quality objectives identified during the planning stages of the experience" (National Society for Experiential Education, n.d.). For the i5 Signature Move on **Compassing** (*Iterative*), what's similarly important is "*decentering testing and summative grading to focus more on the student learning journey*." As such, it is the assessment *for* learning (Main, 2022; Din et al., 2018), instead of assessment *of* learning, that becomes the new agenda of quality assurance in higher education generally and business education specifically. The i5 Signature Move of **Compassing** to "*incorporate alternative forms of assessment and grading strategies*" is a part of this much-needed transformation of pedagogical practice.

This leads us to the concept of "Acknowledgment." For SEE, "all parties to the experience should be included in the recognition of progress and accomplishment [and] culminating documentation and celebration of learning and impact help provide closure and sustainability to the experience." For the i5 Characteristic of *Joyful*, the Signature Move of **Delighting** "*importantly includes rejoicing in student accomplishments, commemorating progress and providing affirmation*." The celebration of learning over achievement (Pendoley, 2019) constitutes a powerful antidote to the excessive importance placed upon learning benchmarks, correct answers, and achievement of outcomes on someone else's timeframe. And while the i5 Signature Move of **Delighting** does rejoice in "student accomplishment", it also includes "commemorating progress" and "providing affirmation" in the celebration. Students learn at different paces and in different ways and should be recognized and acknowledged for the learning path taken and progress made.

In conclusion, it is evident that i5 Characteristics inherited much from the pedagogy of experiential education as demonstrated by but a handful of examples showing alignment between the i5 Framework and the SEE Eight Principles. Indeed, for learning designed to be *meaningful*, *joyful*, *actively engaging*, and *iterative*, the areas of pedagogical convergence between the SEE Eight Principles and the i5 Characteristics are both numerous and compelling. However, for both the i5 Characteristic of *Socially Interactive* and *Meaningful*, the i5 Framework reveals itself as more socially engaged, critical, student-centered, and culturally aware of the importance of diversity and inclusion, as compared to the SEE Eight Principles which are largely silent on such matters. And while the i5 innovations no doubt result from the very different historical

and cultural contexts in which the i5 and SEE frameworks were created, they also reflect the concerns of business educators mindful of the need to reform management education in line with planetary boundaries and human welfare as articulated in the 17 UN SDGs.

Impact in Experiential Education

Experiential education is designed to have a meaningful impact on learning goals (i.e., by promoting civic engagement and social justice as instructional goals (Shumer, 2013), extended stakeholders, institutional culture, and especially students.

Evidence of the impact of experiential education both on institutional culture and student learning outcomes is quite conclusive. As but one example, we highlight the initiatives implemented and assessed at Lesley College (Dreher, 2013). As Dreher writes,

> In its century long history, Lesley College practice in teaching and learning has deeply embedded experiential education into its culture, making it available to students as early as the first year; inclusively, to engage all majors over the four years; and authentically, through department structures, formal assessment and coordinated reflection on experience in both academic and co-curricular environments. A common language that resonates in the organization permits shared meaning among colleagues and contributes to a fruitful alliance that has moved experiential education beyond a group of individual courses to an institutionalized component of the undergraduate experience.

With respect to the impact of experiential learning in the classroom setting and with the needs of instructors in mind dedicated to helping students achieve their full potential, recent additional research highlights the impact of such experiential pedagogies on student motivation and classroom engagement. It has been widely documented that learners who actively engage in their learning journey and take an active interest in their academic achievement via experiential learning methods are more likely to advance to higher levels of learning (Wang et al., 2021; Kong, 2021).

One study (Zelechoski et al., 2017) across four higher education institutions (N = 291 students) designed to assess the effectiveness of experiential learning pedagogies applied within undergraduate courses found that participants in experiential activities performed significantly better than did control students on most exam questions

related to such “hands-on” activities. Moreover, students drawn into “learning-by-doing” activities consistently rated aspects of the course as more enjoyable than did control students. These results provide an additional example of how building experiential learning activities into curricular design improves student performance and increases student engagement, participation, and motivation.

Finally, one of the leading and most innovative institutions in experiential education—Elon University—was the object of a recent in-depth study (n=2,058) designed to evaluate the impact of experiential learning *depth* (amount of time commitment) and *breadth* (number of different types of experiences) on student learning outcomes. Key findings (Coker et al., 2016) confirmed that “Depth (but not breadth) was associated with higher order thinking (synthesis and application) in the senior year, as well as overall educational experience [and] breadth (but not depth) was associated with working effectively with others and better relationships with other students.”

The variable of *depth* as designed at Elon suggests that the i5 emphasis on *Iterative* learning and **Revisiting** student work and thinking is indeed likely to result in improved life-long learning, knowledge retention, appreciation of the role played by past and prior learning, and values clarification—all critical leadership competencies for envisioning futures, for critical and systems thinking, and for moral and ethical reasoning (PRME, 2023).

Similarly, the variable of breadth suggests that the i5 Framework related to **Sensing**, **Rippling**, **Communifying**, **Bridging**, **Linking**, and **Exploring** should all build instructor confidence that designing a variety of diverse learning activities helps build student social-emotional skills, global perspective-taking, cross-cultural understanding, improvisation, tolerance for ambiguity, collaborative engagement, network building, and teamwork—all crucial leadership competencies that business and management education should strive to foster in students and that the i5 Framework also seeks to develop (PRME, 2023). This finding highlights the value of the i5 Framework as a comprehensive approach. We hope that this mapping and the i5 Framework enable educators to identify where they can find more depth, but also suggest different moves to increase the breadth of the student experience.

Conceptualizing The Impact We Want to Have

As management educators begin evaluating the utility of i5 pedagogy and its applicability to their course-specific context, and as they seek to relate the i5 Framework to other pedagogical strategies for effective teaching and learning, thinking about what constitutes the basic "signature pedagogy" of their own profession—business and business management—is a good place to start. Shulman (2005) reminds us that "signature pedagogies are important precisely because they are pervasive. They implicitly define what counts as knowledge in a field and how things become known. They define how knowledge is analyzed, criticized, accepted, or discarded."

While signature pedagogies certainly differ across the disciplines, they all share three dimensions of "apprenticeship" that Schmidt-Wilk (2010) describes as: 1) a *cognitive apprenticeship* wherein one learns to think like a professional, 2) a *practical apprenticeship* where one learns to perform like a professional and, 3) a *moral apprenticeship* where one learns to think and act in a responsible and ethical manner that integrate across all three dimensions.

When turning specifically to the field of management education, the two main staples that have historically nourished its signature pedagogy are case studies and projects (Schmidt-Will, 2010) to which should be added since the 1970s and 80s the required and credit-bearing internship. Once again, the two frameworks described above—cognitive and professional apprenticeship—may not seem novel to many business educators. Yet what appears to be lacking (Schmidt-Will, 2010)—and where i5 pedagogy provides a suite of innovative remedies—is sufficient emphasis on moral apprenticeship: in short, "are we underemphasizing the third dimension—teaching future managers to act with integrity? If we do not explicitly design our courses to teach for integrity, will it get overlooked with our traditional pedagogies?"

While the i5 Framework focuses only on pedagogical practice and is largely silent on what ethical content and sustainability learning outcomes may be the object of such pedagogy, its Characteristics and Signature Moves can—if there's sufficient intent on the part of the instructor—be leveraged to support impactful learning about ethics, sustainability, and responsible management.

What Is Impact and When Is It "Transformative"?

The concept of learning levels (Sterling 2003, 2011; Bateson, 1972) provides a useful heuristic for thinking about and ultimately defining what we choose to mean by the term "impact" or "impactful" when used as either a noun or adjective in conjunction with (or to modify) basic educational actions such as teaching, learning, activities, practice, methods, outcomes, and indeed pedagogies such as the i5 Framework. This same approach also helps us organize our thoughts around the meaning of the term "transformative" or transformational" in the context of learning, education, change, knowledge, and leadership—curiously, (by the way) the very few nouns modified by this word in higher education.

First-order learning refers to learning demonstrated through increased knowledge. It takes place within established boundaries and without examining or changing the assumptions or values that inform what is being learned. In this sort of learning, meaning is assumed or given and relates primarily to the external objective world. This is the most elementary process of basic learning and cognition (Cf. Evans & Ferreira, 2019). (See below: Renovation and Conformative change).

Second-order learning refers to learning demonstrated via changes in awareness, attitudes, beliefs, assumptions, and behavioral intentions. It requires a significant change in thinking via an examination of assumptions and values and is about understanding one's inner or subjective world. This is learning about learning, meta-learning, and meta-cognition. (See below: Innovation and Reformative change).

Third-order learning refers to learning demonstrated through an epistemological shift capable of effecting profound changes in one's thinking, values, and practices. It constitutes a dramatic paradigmatic shift of consciousness affecting identify, behavior, and epistemic outlook. This level is more about understanding—indeed wisdom—than about knowledge (level 1) or awareness (level 2) (Sterling, 2011; Evans & Ferreira, 2019). (See below: Re-Foundation and Transformational change).

Sterling's presentation of these learning levels as nested systems, as shown below in Figure 1., is designed to convey that transformative learning is extremely rare, taking place only at the fringe of instructional practice.

Sterling indicates that most students congregate mainly at the center of the nest, with a minority cohort able to explore more self-aware forms of meta-learning, and only a handful of outliers actually engaging in worldview-altering epistemic learning.

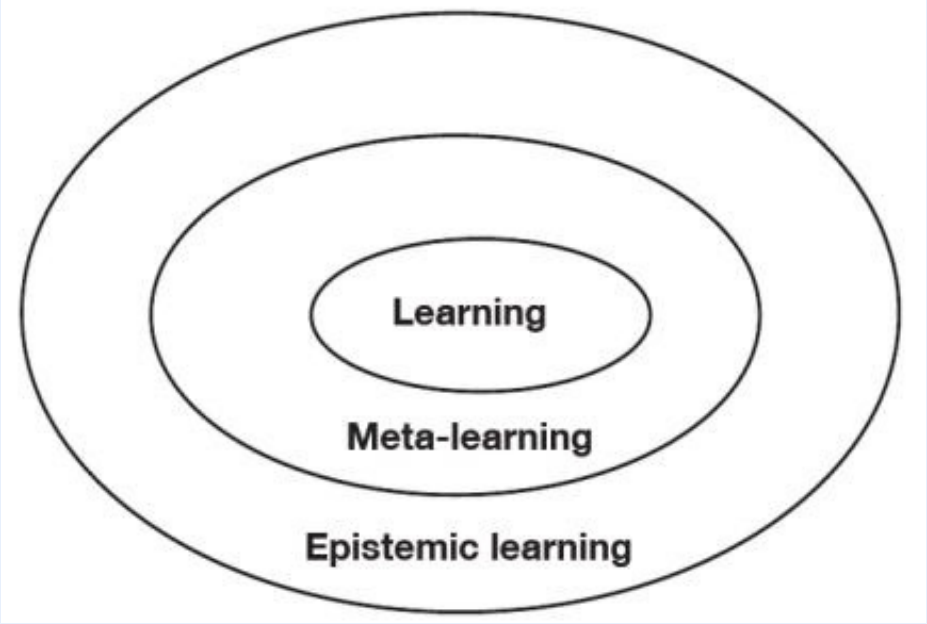

Figure 1. Sterling (2011), p.24.

A similar 3-part conceptual framework (Curnier, 2019) closely related to learning levels but focused on levels of change—whether individual or societal—that result from such learning, provides an opportunity to expand and better define our notion of what constitutes *impact* in educational settings. See Figure 2. The triptych of *Doing things better—Doing better things—Seeing things differently* is both easy to grasp and remember and is elegant in its simplicity. It is easy to apply at various actor levels—e.g., individuals (students), groups (instructors), and institutions (business schools). Moreover, it reveals how deceptive the notion of change can be. One case—*conservative conformative renovation*, for example—results in tidying things up without altering assumptions, power structures, or basic outcomes. Think: "more fuel-efficient cars!" A second case—*progressive reformative innovation*—questions whether better alternatives are at hand. Think: "electric cars!" The third case—*radical, transformative, re-foundation*—envisions an altogether different way to live. Think: "self-sustaining and walkable eco-villages interconnected via efficient and accessible public transport." Each case reflects a paradigmatic shift across anthropocentric, biocentric, or ecocentric mindsets, as indicated.

Figure 2. Adapted by author from Wallenhorst (2019) p. 90.

When applied to the type of learning we hope to effect in students, and when shopping through the pedagogies available to us that might spark such learning, this model of change serves both as a mirror and ethical compass, as indicated in the chart. Indeed, several of the business sectors subject to formal management education courses—e.g., banking and finance, investment and asset management, but particularly advertising and marketing—come under growing scrutiny (Parguel et al., 2015; Schmuck et al., 2018; Gregory, 2021; Kwon et al., 2023, etc.) for the stark greenwashing they practice. More alarmingly, greenwashing has fully entered the Academy, with researchers providing evidence-based approaches to its extent, its relationship to education, and the more or less effective strategies identified for fighting it via environmental education and education for sustainable development (Álvarez-García & Sureda-Negre, 2023). The extent of frustration experienced by one instructor of management education with this phenomenon (M. Parker, 2018) is expressed by the title of his popular article/rant: *Why we should bulldoze the business school.*

In a more constructive response, integrating sustainability and ethics into management education should not only enable students to better judge the possible negative impacts a business decision might have in economic as well as non-economic terms, but also challenge the "dominant economic-driven world view in order to cultivate [sustainability-driven values among] business students" (Lourenço, 2013). Such integration increasingly occurs within the business school curricula and teaching practices (Figueiró & Raufflet, 2015) as well as in and related activities beyond the curricula (Painter-Morland et al., 2016).

If management education instructors choose to highlight the ecological and social implications of a "dominant economic-driven world view" in *what they teach*, then the i5 Signature Moves provide them with a battery of "off-the-shelf and ready-to-use" tools and techniques that are designed to better expose students to such real-world issues (**Authenticating**); that invite them to bravely engage in controversial topics and difficult conversations (**Braving**); that guide them in reflection about their inner, spiritual, and physical selves (**Contemplating**); and that enable them to grasp the profound impact of individual and collective actions in an interconnected world (**Rippling**). If such challenge and support is explicitly presented to students as an intentional pedagogical strategy designed and selected to help them see the world differently, to see all things in the world differently, and to *being* differently—*savoir être*—then the chances are improved that they will regard the i5 Playbook as a friend and ally in quenching whatever thirst they have for transformative learning.

Bridging i5 and Feminist Pedagogy

Higher education first encountered the term “feminist pedagogy” in the 1980s when it was coined to characterize a variety of teaching methods then emerging out of women’s studies programs and progressively adopted by instructors in other disciplines (Shackelford, 1992). Early candidates for a feminist reading of their disciplinary theories, principles, and practices included economics (Shackelford, 1992), advertising (Stern, 1992), and marketing (Maclaran et al., 2022), but of course no area of the management education curriculum would escape feminist scrutiny, including accounting (Lehman, 2019). In addition, and in response to the growing appeal for greater diversity, inclusion, and equity across society generally, management education embraced feminist principles as both ethically grounded and good for business (UNC Pembroke, 2021).

Of course, while the i5 Framework does not explicitly refer to feminist pedagogy, it does share with it many core values such as student-centered learning; making space in the classroom for students’ personal lives and experiences; the sharing of power and altering student-teacher roles; acknowledging diversity, inclusion, and equity; fostering community andcollaboration, and addressing issues—such as power, authority, and domination—that are also meaningful to students.

Theory of Feminist Pedagogy	Principles and Practices Promoted	Related i5 Characteristic	Related i5 Signature Moves
Feminist pedagogy is a pedagogical framework grounded in feminist theory embracing a set of epistemological theories, teaching strategies, approaches to content, classroom practices, and teacher-student relationships. Feminist pedagogy is concerned with existing and historical power systems and relations while also incorporating the concept of intersectionality (Vanderbilt Center for Teaching, 2015). Variations & Manifestations • Critical pedagogy • Social constructivism • Inclusive education • Intersectionality • Critical race theory (CRT) • Diversity, equity, inclusion (DEI) • Critical ecopedagogy • Ecofeminism • Critical theory • Anti-bias curriculum	**Addressing power & empowerment** • Overcoming patriarchy: decentering power and authority • Challenging gender stereotypes • Identifying and addressing oppression /domination • Critical thinking & consciousness raising	Meaningful Actively Engaging	Surfacing Dignifying Authenticating
	Altering teacher-learner relationships • Shared power as energy not domination • Participatory learning & Democratic relationships • Shared responsibility for learning • Teacher as a leader role model and the intermediary between content and learners • Classroom as community of learners • Active, collaborative, risk-taking	Meaningful Socially Interactive Iterative	Role modeling Communifying Compassing
	Embracing diversity & the role of students' personal experience • Integration of emotions and lived experience • Embracing intersectionality	Meaningful Joyful Socially Interactive	Personalizing Sensing Contemplating Bridging
	Building community • Solidarity and coalition in and out of classroom • Building trusting environments • Collaborative learning through dialog, respect, critical thinking, and shared meaning-making • Social transformation via service learning, global learning, civic engagement	Meaningful Joyful Socially Interactive Actively Engaging	Dignifying Rippling Communifying Bridging Linking
	Privileging individual voice as a way of knowing • Socially constructed knowledge • Seeks input of all voices, considering each voice provides knowledge and a methodology for instruction • Diversity, inclusion, empathy	Meaningful Socially Interactive Actively Engaging	Personalizing Surfacing Dignifying Teaming Exploring
	Challenging traditional pedagogies, practice, knowledge, and values • Question traditional authority and theories • Recognizing power influences in the teaching and learning process • Consciousness raising	Meaningful Joyful Iterative	Surfacing Rippling Compassing

The feminist pedagogical concern with *empowerment*—both in its oppressive form of patriarchy and its liberationist form of intersectional equality of gender, race, and class—resonates quite powerfully within the i5 Characteristic of *Meaningful* **Surfacing**. Uncovering the values, norms and biases that exist in ourselves, ideas, societies, and systems—i.e., the very definition of i5 **Surfacing**—constitutes both a central goal and basic methodology of the feminist critique vis-à-vis decentering power and authority, challenging gendered stereotypes, and overcoming patriarchy. Honoring and supporting the identities and perspectives of minoritized and marginalized students—i.e., the very definition of *Meaningful* **Dignifying**—provides another example of how the i5 Framework merges with feminist pedagogy as applied to power, authority, and domination.

Another basic principle of feminist pedagogy—altering both the power relationship of learner and teacher, and creating a learning environment of participatory and democratic collaboration—finds a close parallel in the i5 Signature Move of *Meaningful* **Role Modeling** in which the instructor sets an example for sharing power-as-energy (not domination), for conveying the shared student-teacher responsibility for learning, and for acting as an intermediary between the course content (both pre-selected but also spontaneously co-constructed) and the students empowered to embrace and integrate it. This same feminist concern for altering and democratizing the learning environment is expressed in the i5 Signature Move of *Socially Interactive* **Communifying** in which the instructor finds good cause to foster an atmosphere of trust, openness, and inclusiveness so important to prioritizing communal learning and community building over individualization. An important additional sign that instructors can send to students that they strive to share power with students, create healthy and trustworthy learning environments, and respect individual learning styles is via the i5 Signature Move of *Iterative* **Compassing** with its call to decenter testing and summative grading—perhaps the most potent manifestation in the classroom of masculine "power and authority" so decried by feminist pedagogy.

Furthermore, embracing diversity and making space in the classroom for students' lived experiences and emotions as a legitimate basis for social analysis, theory building, civic activism, and research, resonate deeply with the i5 signature moves of *Meaningful* **Personalizing**, *Joyful* **Sensing**, and *Socially Interactive* **Bridging**. The first draws our attention to caring about *who are students are, where they come from, and what their interests, needs, and feelings might be*, because—within the constructivist paradigm to

which both i5 and feminist pedagogies belong—these things matter. *Joyful* **Sensing** encourages students to notice, navigate, and express their emotions in the context of other students doing the same thing. It is through this shared exploration of lived lives, everyday experiences, and complex emotional responses that students come to understand and welcome difference, develop emotional awareness, engage in deep listening and perspective-taking, and develop a sense of empathy and genuine caring. These are deeply desired learning and developmental outcomes shared by both i5 and feminist pedagogies. The third i5 Signature Move—*Socially Interactive* **Bridging**—expresses perhaps the most important principle in feminist thought and pedagogy—intersectionality and identity formation. Exploring the multiple facets of identity and integrating these into the process of analyzing social phenomena and constructing knowledge around key concepts such as stereotyping, racism, discrimination, diversity, intercultural sensitivity, and many others—all of this is an important part of feminist pedagogy that the i5 Signature Move of *Socially Interactive* **Bridging** is well-designed to support.

Impact in Feminist Pedagogy

Those discontented with feminist pedagogy criticize all its core tenets—the emphasis it places on personal experience, its "politicized" agenda of liberation, its intent to balance power relationships in class, and even its ability to foster critical thinking and participatory classrooms. However, evidence that substantiates these charges is scant (Stake & Hoffmann, 2000). Early assessments of the impact of feminist pedagogy (Hoffmann & Stake, 1998) found strong endorsements, at least in the United States. Alternatively, its impact is less clear in specific national contexts in Europe as described by Welch (2007): "Whether feminist pedagogy is conceived of as a strand of critical pedagogy, a particular variant of student-centred teaching, or a vital dimension of the Women's Studies project, its impact to date on UK writings about learning and teaching in higher education has been limited." What is clear is how much promise feminist pedagogy holds out to instructors seeking a more authentic voice in class (**Role Modeling**), building a learning environment around care, concern, and connectedness, (**Communifying**), seeking counter-hegemonic ways of knowing and being (**Surfacing**), all of which combines into an exercise of transformative learning both for themselves and their students (**Braving**) (Roberts, 2021).

However, it's important to remember that feminist pedagogy is not widely practiced in business and management education where neoliberal values and assumptions sit uncomfortably nearby. Indeed, when feminist pedagogy is introduced into business education courses, it evokes resistance (Stierncreutz & Tienari, 2023). As an example of one such testimonial: "colleagues who have adopted bold and radical feminist approaches to teaching tell us that while they may cause some students to 'shut their eyes' in denial, they do occasionally succeed in radically unsettling their students' assumptions and thinking in ways that our pragmatic approach cannot" (Stierncreutz & Tienari, 2023). It appears that third-order learning and transformative change does take place in the most unlikely of places and by the least likely of candidates. As such, the i5 Framework provides instructors with a process to introduce the best of feminist teaching and learning into the hallways of management education, through either the front door for the more daring or, for the more discreet, through the real service entry.

Bridging i5 and the Socratic Method

The image Antiquity has passed down to us of Socrates—an unkempt, ugly, and wizened gadfly philosophizing in the streets of Athens in the late 5th century BC and executed at age 70 for impiety and corrupting the young—is one educators are unlikely to seize upon when articulating principles of responsible management education. Yet they would do so at their peril given how foundational and consequential has been the Socratic method to the history of education and pedagogy (George, 2015). Critical thinking, student-centered teaching, transformative learning, moral reasoning, constructivist pedagogy, self-knowledge and awareness, healthy skepticism and respect for one's ignorance, the pursuit of knowledge, higher-order thinking, inductive reasoning, standards of evidence, critical reflection, the art of questioning, testing hypotheses, universal truths, challenging conventional wisdom—these are but a few of the educational goals, endeavors, and cognitive processes we owe to this extraordinary and maddeningly unconventional, yet intellectually honest, Athenian fellow (Trepanier, 2017; Elder & Paul, 2010).

For example, just within business and management education, the Socratic Method has been used for testing critical thinking skills (Boa et al., 2018), teaching business ethics (Morrell, 2004), fostering problem-solving skills and improving decision-making (Peterson, 2009), developing more effective management tools and strategies (Abenoza, 2024), advancing leadership education (Friesen & Stephens, 2016), and providing advice for start-up founders (Riani, 2023), to list just a few. In the context of psychotherapy for example (Overholser, 1994), the Socratic method has proven effective in helping learners identify underlying causation, build new knowledge, broaden perspectives, and guide behavioral change—all key cognitive processes and competency-based learning that are (by the way) equally pertinent to building and acting upon environmental awareness. The imprint of Socrates is deep upon the modern Academy, both in what it teaches and, more importantly, how learners gain knowledge, insight, and enlightenment simply by scrutinizing one's established beliefs (Curcio, 2023).

The i5 Framework is no exception, echoing as it does many practices and principles that Socrates and his toga-clad students would find familiar. The Socratic practice of dialectical inquiry, question and answer, and cross examination can be achieved using multiple i5 Signature Moves but it's probably *Iterative* **Prototyping**—*embedding cycles of ideation, development, drafting, feedback, and revision into assignments and learning*

experiences—that best captures Socrates's characteristic strategy of engaging learners in an ongoing sequence of questions, analyzing one by one the implications of each answer in ways that draw out flaws and inconsistencies, and resulting sometimes in an epiphany of truth, other times in complete perplexity (Tarnas, 1991, p. 34). It is an iterative process premised not so much on *knowing* the right answers but engaging in the strenuous intellectual work of *discovering* those answers—a cyclical process closely expressed by i5 *Iterative* **Exploring**—*designing open-ended, sometimes ill-structured, learning experiences where students are encouraged to mess about, experiment with ideas, and take calculated risks*. This is pure Socratic Method.

Throughout such processes, Socrates had an uncanny knack for raising curiosity, sparking wonder, and fomenting self-discovery of those in his Socratic circle—moments expressed by i5 Signature Moves such as *Joyful* **Delighting**, **Sensing**, and **Contemplating**—i.e., *infusing fun, surprise, wonder, and celebration; navigating a range of emotions, both one's own and others'; and reflecting about inner, spiritual, and physical selves*. And Socrates's most memorable mottos of "Know Thyself" and "An unexamined life is not worth living" convey quite nicely the spirit of i5 *Meaningful* **Surfacing**—*uncovering the values, norms and biases that exist in ourselves, ideas, societies, and systems*.

Similarly, Socrates's focus primarily on ethical and moral reasoning resonates across several i5 Signature Moves: e.g., *Meaningful* **Role Modeling**—*demonstrating responsible leadership competencies in observable ways that students can understand and possibly emulate*; *Interactive* **Braving**—*guiding students to bravely engage in controversial topics, complex experiences, and difficult conversations*; and *Active* **Authenticating**—*expose students to real-world issues and engage them in experiences that are authentic to their current and future realities.*

Finally, being subjected to the Socratic Method was probably no easier in ancient Athens than it is today. Having your beliefs relentlessly questioned, forced to publicly admit inconsistencies and flawed logic in your thinking, becoming resigned to overturning your long-held convictions, and worse, compelled through critical reasoning to embrace the opposing position of the very person revealing your cognitive defects—this is all both embarrassing and very hard to tolerate—perhaps even more so today in our hyper-sensitive age. And it helps very little hearing such cross-examination referred to as "productive discomfort" by those hoping to take the edge off the Socratic Method (Reis, 2003). Yet, generating such discomfort is

something the i5 Framework does implicitly acknowledge here and there, but which is explicitly stated in the i5 Signature Moves of *Interactive* **Braving**—*guiding students to bravely engage in controversial topics, complex experiences, and difficult conversations*; and *Iterative* **Exploring**—*designing open-ended, sometimes ill-structured, learning experiences where students are encouraged to mess about, experiment with ideas, and take calculated risks*. Such Socratic *braving* and *exploring* forces students to subject themselves—*publicly*!—to a critical analysis of what they believe, value, and assume both about the world around them and their behavior within it. The Socratic Method is not for the faint-hearted.

Yet, this same productive discomfort is also its chief attribute—i.e., its effectiveness in building a deeper sense of self-awareness, without which little high-impact learning takes place (London et al., 2022). Indeed, Socrates held out the promise of truly transformative learning precisely because he's not really ontologically interested in the act of *transferring* knowledge to his students—he's more epistemologically interested in helping them grasp how knowledge is *created, validated, and embraced* (Curcio, 2023). It is a pedagogy of 'cognitive discovery' not about the world but about one's place, identity, and behavior within it. It is basically a pedagogy of *responsibility* and *ethics* applicable to any discipline, whether business management or environmental studies. And while the method is radical, subversive, and risky, it leads to more profound learning and personal development, premised as it is on questioning tightly held convictions, and unlearning what we once supposed to be true (Posey, 2022). As such, it is a pedagogy that no doubt feels to some as intimidating and painful even when delivered by the kindest of Socratic instructors. But experiencing the i5 Signature Moves of **Braving** and **Exploring**, and enduring the Socratic Method both builds character and helps students learn to better defend what they purport to believe. At the very least, it also helps them understand why Socrates was put to death.

Impact of the Socratic Method

Indeed, Socrates could be so exasperating and irksome—to the point of wanting him dead!—precisely because he insistently sought answers to questions that no one previously had thought to ask, and in so doing, undermined conventional assumptions, sowed doubt in established beliefs, and exposed fallacious and sloppy thinking of self-important yet powerful men (Tarnas, 1991, p. 32). His Delphic-inspired dictum—*Know thyself*—ended up placing no one (including, he said, himself) in favorable light. Only through the hard work of exploring the qualities such as goodness, justice, courage, piety, and beauty could one hope to discover and live a life of virtue. The pedagogical tool of such hard work was his famous dialectical form of argument and cross-examination that has become so fundamental to the character of the modern mind—*reasoning through rigorous dialogue as a method of intellectual investigation intended to expose false beliefs and elicit truth* (Tarnas, 1991, p. 34). This is the essence of what virtuous instructors across the world strive to see take place in any university or business school classroom.

Of course, the i5 Framework is conceived to foster growth in other areas of human development that Socrates largely ignored—emotional well-being, aminated physical activity, social interaction, interpersonal skills, and using technology in effective and healthy ways. And indeed, had Socrates been more sensitive to the virtues of i5-**Linking**—*building meaningful links and relationships between students and industry professionals, businesses, community organizations, and others*—his post-trial sentencing may well have been something less impactful than the glass of poison hemlock handed to him. But the essence of **Meaningful** learning within the i5 Framework—*uncovering the values, norms and biases that exist in ourselves, ideas, societies, and systems*; and instructors serving as honorable, principled, uncompromising, and cheerful **Role Models** *that students can understand and possibly emulate*—this is wholly the Socratic Method, and so totally Socrates.

The Socratic Method	**Principles and Practices Promoted** (Adapted: AIOU Open University, 2024; Reich, 2003)	**Related i5 Characteristic**	**Related i5 Signature Moves**
The Socratic Method creates a dialogue between teacher and student via the posing of ongoing probing questions by the teacher, in a joint effort to explore the underlying beliefs that shape a student's views and opinions (Conor, 2024). The Socratic Method thus involves a shared dialogue between teacher and student—the teacher leading by posing thought-provoking questions, and students following by actively asking questions of their own. The discussion is iterative and goes back and forth. The Socratic Method "is better used to demonstrate complexity, difficulty, and uncertainty than to elicit facts about the world." (Reich, 2003). As such, the aim of Socratic questioning is to probe underlying beliefs upon which students' statements, arguments and assumptions are built. While such questioning may be stressful, the classroom environment should create "productive discomfort," not intimidation. The Socratic professor openly admits to not having all the answers and is therefore not just "testing" students. The questioning is open-ended, without pre-determined goals, and premised on co-constructing knowledge and revealing hidden yet universal truths (Reich, 2003). Variations & Manifestations • Socratic questioning / seminar / circle • Critical thinking • Inductive reasoning • Dialectical method • Formal proof theory • Rules of evidence • Argumentation and debate • Productive discomfort • Sophism and rhetoric • New and prior knowledge • Universal truths and definitions • Logical refutation • Assumptions analysis / risk analysis • Ethical reasoning • Normative competency • Self-awareness competency	**Dialectical Inquiry** • Inductive reasoning & questioning • 5-stage process of dynamic iterative dial • Cyclical and iterative scaffolding	Socially Interactive Actively Engaging Iterative	Braving Authenticating Linking Prototyping Revisiting
	Cross-examination (*Elenchus*) • Critical examination of assumptions • Reveal truth by exposing irrelevance, inconsistency, fallacy, and faulty logic • Foster intellectual flexibility	Meaningful Joyful Iterative	Personalizing Contemplating Exploring Revisiting
	Learn Cooperatively • Collaborative and open inquiry • Neither "Sage on stage" • Nor "Guide at side" • Group interactive reflective learning • Open to speculative and "crazy" ideas	Meaningful Socially Interactive Actively Engaging Iterative	Role Modeling Communifying Braving Bridging Linking Exploring
	Spark Curiosity & Wonder • Pursue knowledge for its own sake • Demonstrate complexity and uncertainty rather than eliciting facts about the world • Explore what constitutes the good life	Meaningful Joyful Socially Interactive Actively Engaging	Dignifying Delighting Sensing Contemplating Communifying Teaming Linking
	Self-Discovery • Importance of self-awareness • Seek a life of virtue and good • Explore eros & logos (passion & mind, friendship & argument, desire & truth) • "An unexamined life is not worth living"	Meaningful Joyful Actively Engaging Iterative	Personalizing Surfacing Delighting Sensing Contemplating Authenticating Exploring Compassing
	Ethical & Moral Reasoning • Examine underlying values, beliefs, principles, assumptions and actions • Explore implications of each • Engage in personal reflection on how one "ought to live" • Moral education as essential	Meaningful Joyful Socially Interactive Actively Engaging	Role Modeling Surfacing Sensing Contemplating Braving Bridging Authenticating
	Embrace Challenge & Difficulty • Create a learning environment of "productive discomfort" • Seek truth via challenge and support • Engage in hard mental and emotional work of questioning one's own values • Struggle to find the truth hidden by error and prejudice • Expose one's beliefs and assumption to rigorous examination & skepticism • Learn to defend what you believe	Meaningful Joyful Socially Interactive Actively Engaging Iterative	Surfacing Sensing Contemplating Rippling Braving Bridging Teaming Authenticating Exploring

Bridging i5 and Sustainability Education

When it comes to teaching and learning about Earth's natural systems, about the deleterious impact human activity has upon them, and upon the growing urgency of articulating remedies and corrective "sustainable" human behaviors—an agenda for which we have a growing variety of contested and inconsistently used terms, such as nature study, outdoor education, environmental science, environmental education, education for sustainability, education for sustainable development, sustainability literacy, climate change education, ecofeminism, ecopedagogy, critical ecopedagogy, and Indigenous pedagogy—we enter a pedagogical world quite unlike the previously described approaches of behavioralist, constructivist, experiential, and even i5 Frameworks.

As attested by the long list of educational variations and manifestations surrounding the "ecological paradigm," it's no surprise that teaching and learning about the natural world, and the place and impact of humans within and upon it, has been the struggle it has. The origins of our curiosity about Nature stretch back at least to the ancient world of Aristotle (Kullmann, 1991). Nature as a source of basic human identity and well-being was explored by Rousseau in the Enlightenment (Wolff, 2014; Lu, 2019). But wider and more popular interest in the workings and beauty of the natural world emerged in the late 19th century movement called "Nature Study" (Kohlstedt, 2010) whose dictum—"study nature, not books"—is particularly poignant today as higher education struggles in its response to climate change and minimal progress on the 17 UN SDGs. More recently in the 1960s, environmental education gained a foothold in university education as part of the wider protest movement focused on, among other things, nuclear weapons, imperialism, "decolonization", the war in Vietnam, civil rights, women's liberation, the emerging materialism of Western culture (Sherkat & Blocker, 1993) and the dangerous chemical pollution it generated, threatening both human and non-human life, so effectively exposed in 1962 in Rachal Carson's *Silent Spring* (Carson, 1962/2020). However, it's only in the 1990s that the UN system (via UNESCO at the 1992 Rio Earth Summit) launched a global movement for Education for Sustainable Development (ESD), later taking on additional urgency in 2015, when the member states of the UN adopted the 2030 Agenda for Sustainable Development, including SDG-4 on Quality Education (United Nations, n.d.). A structured approach to integrating ESD into global higher education dates from 2007 with the establishment of the UN Global Compact (for global business) (n.d.) and the founding of PRME—Principles for Responsible Management Education, (for global education) (Principles for Responsible

Education, n.d.). Dissatisfaction with the underlying assumptions, the progress made, and the pedagogical methods employed by mainstream approaches to ESD accounts for the rise of the Ecopedagogy movement (Kahn, 2010) which begins in earnest around 2000 but whose intellectual origins stretch back into the 1970s (Illich, 1971) and beyond (Freire, 1968/1972).

Impact in Pedagogies for Sustainability Education

So, what is so different about sustainability education? From one standpoint, what is striking about the act of teaching and learning how the world's many natural systems work, is how much the pedagogical endeavor—particularly when done effectively *directly in Nature*—captures youthful minds, bodies, and spirits. The case of outdoor environmental education provides some insight into how impactful such learning can be. Because, while much of the research on the impact of outdoor education concerns K-12 education (University of Wisconsin-Stevens Point, 2023), the list of positive developmental outcomes—higher test scores; improved attitudes and behaviors towards learning; increased physical, mental and social health; fewer symptoms of ADHD; enhanced emotional, behavioral, and cognitive development; greater independence, confidence, creativity, decision-making and problem-solving skills, empathy towards others, motor skills, self-discipline, confidence, and enthusiasm; stronger environmental attitudes, community engagement, and civic behavior—is both so long and so compelling as to be relevant to higher education, for which research on the benefits of outdoor learning once adapted to the post-secondary curriculum, is also available (Lugg, 2007; Boland & Heintzman, 2010; Garnham & Oprandi, 2024). These align with many of the leadership competencies the i5 Characteristics are designed to develop, such as: fostering learning motivation; emotional awareness; empowerment and efficacy; managing uncertainty and ambiguity; empathetic engagement, and others.

From a second standpoint, sustainability education is quite unique because the pedagogies listed above and described below—i.e., Outdoor Education (OE) and Environmental Education (EE), Education for Sustainable Development (ESD), Global Citizenship Education (GCE), critical ecopedagogy, Indigenous pedagogy—all proceed to a greater or lesser extent, with the embedded assumption that what we teach and why we teach is more important than how we teach. The more "radical" of these approaches—such as ecofeminism and critical ecopedagogy—are unapologetically prescriptive, political, and radical (i.e., getting to the *root* of the problem), seeking as they do to teach an Earth-centered ecocentric, rather than anthropocentric, reading of

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the world. They draw upon the "passion of revolutionary visions and ancient indigenous sensibilities to awaken us all to our responsibility and unequivocal commitment to the sustainability of all life" (Darder, 2010).

In terms of articulating the desired learning outcomes a critical ecopedagogy is ostensibly designed to achieve, Richard Kahn (2010) highlights teaching methods that "develop [a] type of radical and partisan subjectivity in students, [and] that might be capable of deconstructing their socially and environmentally deleterious hyper-individualism or their obviously socialized identities that tend toward state-sanctioned norms of competition, hedonism, consumption, marketization, and forms of quasi-fascistic patriotism." Another study (Lotz-Sisitka et al., 2015) affirms that the promise of such pedagogies promotes transformative "transgressive learning and disruptive capacity-building."

Such "radical-disruptive-transgressive" methods teach with a goal of full transformational learning that profoundly shifts the epistemological assumptions and existential worldviews of learners. Such pedagogies, in short, are purposefully conceived to help students both *see* the world differently and thus *be* differently within it. And while the i5 Framework may not at first glance appear well-aligned to this agenda—much less conceived to achieve it—many of its Signature Moves explicitly conveying good practice in *how to teach*, do in fact align to the pedagogies promoted by more ecologically "activist" or "ecocentric" educators. Indeed, while the i5 Signature Moves alone are not sufficient to achieve the transformational learning needed to meet the Earth crisis and associated social repercussions, many of them are certainly necessary.

Of course, anyone exploring how best to integrate environmental/ecological learning into the ethos and outcomes of higher education quickly learns that the landscape of sustainability education is constantly shifting. There is little consensus, for example, on the definitions and boundaries of its many variants and manifestations, even among the more widely known examples—such as environmental education, education for sustainability, and education for sustainable development (Sterling, 2013).

There is equal complexity and diversity around the many cognitive, affective, and behavioral competencies that quality education for sustainability might foster, although consensus is building both at the UN (United Nations, n.d.) and at UNESCO (2017) that building a suite of eight key competencies (Rieckmann, 2012; Wiek et al., 2011, UNESCO,

2017) in today's student population is crucial to building a sustainable future. These competencies, we recall, are the following: systemic thinking, anticipatory, normative, strategic, collaborative, critical thinking, self-awareness, and integrated problem-solving (UNESCO, 2017), each of which PRME, via the i5 Framework, has adapted specifically for management education as, for example, complex and system thinking (AE); future visioning (AE); moral and ethical reasoning (M); collaborative engagement (SI); critical reflection (J); emotional awareness (J); and problem-finding and framing (AE) (Principles for Responsible Management Education, 2023).

Finally, there is equally little agreement—and indeed relatively little research—about which specific pedagogies are most effective in achieving whatever environmental/ecological learning outcomes we might agree to pursue. Indeed, when it comes to outlining the types of teaching methods, activities, and content that meaningful sustainability education implies, very few well-defined pedagogical theories and approaches are available to us beyond a collection of little-known frameworks such as ecopedagogy, critical ecopedagogy, and Indigenous pedagogy.

As one researcher (Lotz-Sisitka, 2015) laments:

> "Such forms of pedagogy and learning are only beginning to emerge in higher education, mainly under the banner of engaged research, trans-disciplinarity and/or transgressive decolonizing pedagogies. [...] Ultimately these will require an integration of sustainability-oriented higher education teaching, research and community engagement processes into possibilities for learning that allows for the emergence of agency and lived experience in transformative praxis contexts. Such transformations in pedagogical set-up, must also teleologically suspend disciplines in transgressing taken-for-granted norms, existing ethical and epistemological imperialism in society and higher education, and provide possibilities for engaged, lived experience of transformative praxis for all of our students; to be seen as learning capability necessary for encountering the future." (Lotz-Sisitka, 2015)

But where there is broad agreement, it's this: that learning about the complex interconnections between people, planet, and prosperity (Wals & Benavot, 2017) requires—at a minimum—active, participative, and experiential learning methods that engage learners and transform their understanding, thinking, and behavior (Sterling, 2013). As such, despite the considerable progress made in incorporating sustainability concepts into the university curricula, educators should remain vigilant vis-à-vis the

"delivery stage of sustainable development integration and focus specifically on relevant pedagogical approaches that enable the acquisition of competences for sustainable development" (Lozano et al., 2017).

In this light, the specific classroom-based pedagogical strategies used by educators to teach about sustainability—systematically catalogued by Evans and Ferreira (2019)—both parallel, and would be familiar to anyone exploring, the i5 Framework and Signature Moves. These include: "role play and simulations, group discussions and dialogue, stimulus activities, debates, critical incidents, case studies, reflexive accounts, personal development planning, critical reading and writing, problem-based learning, and fieldwork, dairying, modelling good practice, futures visioning, worldview and values research, and action research" (Evans & Ferreira, 2019, p. 7-8). However, it's important to point out that, while it appears that instructors using such instructional methods can describe their purpose and intended value quite effectively, they are less able to provide evidence of the effectiveness of such methods in achieving the "gold standard" of transformative learning.

Indeed, Evans and Ferreira (2019) found no evidence that any transformative learning outcomes resulted from such methods, concluding that "employing sustainability pedagogies *per se* is not enough to result in transformational learning" (Sterling, 2011). The learning that did take place through such "sustainability pedagogies" was limited to "first order" learning (knowledge and understanding), complemented with only some "second order" learning around awareness, beliefs, and values (Sterling, 2011). In addition to the complex nature of the teaching and learning enterprise generally—not to mention the inherently wicked nature of sustainability problems and their elusive solutions—what appears to be lacking in the pursuit of "transformational learning" is an administration of pedagogy that is sufficiently holistic, in terms of how widely it is used and iterated across time and space on campus, but also in terms of how deeply it touches students in all three developmental areas of cognition, affect, and behavior (Evans & Ferreira, 2019).

It is perhaps here that the i5 Framework holds such promise precisely because what the i5 Framework does so well to support instructors in the endeavor of teaching sustainability—and what often goes unappreciated by those new to this "ecological" domain of learning and development—is the emphasis placed on holistic learning and development that simultaneously engages the "head" (i.e., cognitive development in knowledge and knowing), the "heart" (i.e., affective development in feeling and being in

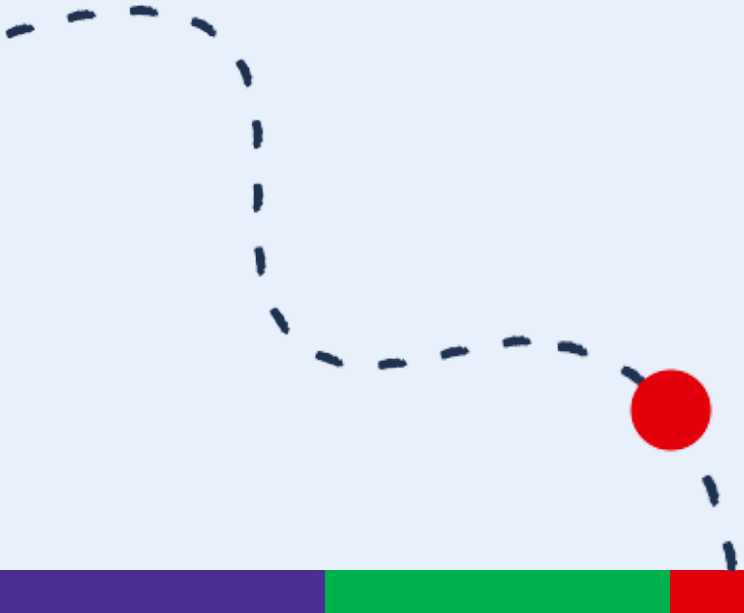
both interpersonal and intrapersonal contexts), and the ”hand” (i.e., behavioral development in competency-based doing and engaging through action (Sipos et al., 2008; Evans & Ferreira, 2019).

Indeed, the i5 Framework is well grounded in this three-part holistic human development theory (Kegan, 1994; Perez et al., 2005) as evidenced by the extent to which i5 Signature Moves “scatter” across cognitive, affective, and behavioral domains. Indeed, as evidenced in the chart below, the i5 Framework both builds upon three decades of holistic learning theory and constitutes a much-needed adaption for responsible management education now compelled—like all of education henceforth on planet Earth—to educate in what some are already calling the Anthropocene era.

Learning & Developmental Themes	**Thinking** Head – Mind – Knowing	**Feeling** Heart – Spirit – Being	**Relating** Hands – Body – Doing	**Author(s)**
Self-Authorship	Cognitive	Interpersonal	Interpersonal	R. Kegan (1994)
Intercultural Maturity	Cognitive	Interpersonal	Interpersonal	Perez et al., 2005
UNESCO Education for Sustainable Development — Learning Objectives	Cognitive domain: Knowledge & thinking skills	Socio-emotional domain: Social skills	Behavioral domain: Action competencies	Wiek, A. Withycombe, L. Redman, C.L. (2011)
PRME i5 Playbook & Signature Moves	Joyful & Meaningful Learning	Active & Iterative Engaging	Socially Interactive Creating	PRME (2023)

What emerges from this discussion is that all the i5 Signature Moves can and should be enlisted in the cause of achieving sustainability learning outcomes in management education. As discussed below, a few i5 Signature Moves align quite naturally to an Earth-centered or ecocentric mindset (e.g., **Contemplating**) while others require more interpretive or imaginative effort to get them to toe an ecological line (e.g., **Dignifying**, see below). Indeed, it’s no criticism to think that the alignment between i5 pedagogies and the goals of sustainability learning is discreet, even agnostic. This is no doubt due to the intellectual origins of the i5 Framework—social constructivist rather than “deep green ecological.”

Nevertheless, if viewed through the lens of achieving transformative sustainability learning, the language of the i5 Signature Moves invites several interesting conjectures and insights into how they might promote more responsible management education, the resultant acquisition of more impactful leadership competencies by tomorrow's business students, and the achievement of the greater 2030 Agenda for Sustainable Development ostensibly served by both. To this end, we identify several associations and complementarities between the i5 Playbook and expected educational responses to the ecological and social crisis we face on a planetary-wide scale. We limit this review to the pedagogies briefly described below, i.e., outdoor education, education for sustainable development, global citizenship education, critical ecopedagogy, and Indigenous pedagogy.



Exploring the alignment

Outdoor & Environmental Education	**Principles and Practices Promoted** (Adapted & quoted from Earlham College n.d.)	**Related i5 Characteristic**	**Related i5 Signature Moves**
Using Ford's (1986) elegant and oft-cited definition, outdoor education is "*education in, about, and for the out-of-doors*." As such, the term outdoor education includes a wide variety of instructional uses of both natural and built areas to meet student learning objectives in a variety of subjects and disciplines through direct experience. Given its many varieties and manifestations, outdoor education has been described as "*a place, a subject, a method, a topic, and a process.*" (Parker, 2022) <u>Variations & Manifestations</u> • Outdoor learning • Experiential learning • Wilderness education • Conservation education • Expeditionary education • Eco-education (Cobb, 1959) • Forest schools • Field study and field trips • Survival skills • Nature study (1900s) • Outdoor adventure education (OAE) • Bushcraft • Garden-based learning (GBL) • Cooperative gardens • Scouting movements • YWCA and YMCA • Outward Bound • Camping / Hiking • Non-guided play	**Cultivating an adventuresome spirit** Viewing obstacles as challenges to be overcome. Actively seeking out opportunities to learn and to push oneself outside the "comfort zone." Living life in a "positive state of non-expectancy."	**Socially Interactive**	**Braving**
	Developing a sense of place A connection to the land we are traveling through such that we are not just tourists or passersby but, rather, we become changed by our relationship with the land and its stories.	**Joyful**	**Delighting** **Contemplating**
	Building servant leadership Servant leadership is defined as the ability to think of others through the acquired skills of listening, observation, awareness, empathy, acceptance and foresight. It is the difference between caring "about" something or someone and "caring for" it.	**Meaningful**	**Role Modeling**
	Fostering a contemplative spirit The art of contemplation and reflection is what brings meaning to our lives. It is also fundamental to the kind of deep and rigorous observation and scholarship we value as learners.	**Meaningful** **Joyful**	**Surfacing** **Sensing** **Contemplating**
	Pursuing simplicity Simplicity and simple living are comprised of two parts: inward simplicity and outward simplicity. The two are, of course, connected. Inward simplicity can be defined by the priorities and goals that you have in your life and how you make decisions about them. Outward simplicity is how you manifest those priorities and goals to the world. Wilderness courses are all about simple living-both inwardly and outwardly.	**Meaningful** **Joyful**	**Surfacing** **Sensing** **Contemplating**

Education for Sustainable Development (ESD)	Principles and Practices Promoted	Related i5 Characteristic	Related i5 Signature Moves
As UNESCO's educational response to the many challenges highlighted in the UN's Sustainable Development Goals, ESD is holistic and transformational education that addresses learning content and outcomes, pedagogy and the learning environment (UNESCO, Learning Objectives, 2017). Because it requires participatory teaching and learning methods that motivate and empower learners to change their behavior and take action for sustainable development, ESD also promotes the development of competencies such as critical thinking, imagining future scenarios, and making collaborative decisions. (University of Plymouth, n.d.). <u>Variations & Manifestations</u> • Brundtland Report, 1987 • UNESCO CCESD (Climate Change Educ.) • UN Decade for ESD (2005-2015) • UNESCO-UNEP-IEEP • Agenda 2030 and the UN SDGs • SDG-4 on Quality Education (2030) • Principles of Responsible Management Education (PRME) <u>Teaching Methods and Activities</u> • Role play and simulation • Real-world inquiry • Real world case studies • Lectures/discussions • Learning journals • Reflection exercises • Group discussions and dialogue • Action research • Field work / research • External experts and guest speakers	**Critical reflection** • Critical thinking • Critical theory • Critical incident analysis • Reflexivity • Critical reflection	**Meaningful** **Joyful** **Socially Interactive** **Actively Engaging**	**Surfacing** **Rippling** **Braving** **Authenticating**
	Systemic thinking • Holistic and integrative • Inter- and trans-disciplinarity • Formal and informal learning	**Socially Interactive** **Iterative**	**Bridging** **Prototyping**
	Active participatory learning • Group and peer learning • Learning through dialogue • Experiential learning • Action-based research • Community-based learning • Action-oriented active learning	**Actively Engaging** **Socially Interactive**	**Animating** **Linking** **Communifying** **Teaming**
	Creative "futures thinking" • Anticipatory thinking • Futures visioning • Foresight intelligence • Problem-based learning	**Socially Interactive** **Iterative**	**Braving** **Prototyping** **Revisiting** **Compassing**
	Collaborative learning • Work-based learning • Collaborative co-inquiry • Participation and collaboration • Group project-based learning • Interactive learning	**Socially Interactive** **Actively Engaging**	**Communifying** **Linking**

Global Citizenship Education (GCE)	**Principles and Practices Promoted** (UNESCO, 2015, p.52)	**Related i5 Characteristic**	**Related i5 Signature Moves**
Global citizenship refers to a sense of belonging to a broader community and common humanity. It emphasizes political, economic, social, and cultural interdependency and interconnectedness between the local, the national and the global. Global citizenship education aims to be transformative, building the knowledge, skills, values, and attitudes that learners need to be able to contribute to a more inclusive, just, and peaceful world. The key competencies of GCE include becoming informed and critically literate, socially connected, and respectful of diversity, and ethically responsible and civically engaged (UNESCO, 2015, p.25). <u>Variations & Manifestations</u> • Human rights education • Peace education • Education for Sustainable Development (ESD) • Education for International Understanding • Inclusive education (DEI) • Participatory learning • Learner-centered • Student engagement • Project-based learning • Experiential learning • Service learning • Community-based learning • Problem-based learning	**Action-oriented and transformative learning**	**Meaningful** **Joyful** **Socially Interactive** **Actively Engaging**	**Surfacing** **Rippling** **Braving** **Authenticating**
	Self-directed problem-based learning	**Meaningful** **Joyful** **Iterative**	**Personalizing** **Contemplating** **Revisiting**
	Collaborative and participative learning	**Meaningful** **Socially Interactive** **Actively Engaging**	**Dignifying** **Communifying** **Teaming** **Linking**
	Inter- and trans-disciplinary learning	**Socially Interactive** **Iterative**	**Bridging** **Prototyping**
	Integrated formal and informal learning	**Joyful** **Actively Engaging** **Iterative**	**Delighting** **Animating** **Exploring** **Compassing**

Critical Ecopedagogy	Principles and Practices Promoted	Related i5 Characteristic	Related i5 Signature Moves
"Rooted in critical theories and originating from popular education models of Latin America, ecopedagogy is centered on better understanding the connections between human acts of environmental violence and social violence to cause injustices/oppressions, domination of the rest of Nature, and planetary unsustainability." (Misiaszek, n.d.). Variations & Manifestations • Critical ecopedagogy • Ecoliteracy • Ecopsychology • Global citizenship education (GCE) • Ecofeminism (bell hooks) • Deep ecology (Arne Naess) • Biophilia hypothesis Leaders/Researchers • Herbert Marcuse, Paulo Freire, Ivan Illich, Francisco Pérez, Cruz Prado, Moacir Gadotti, Richard Kahn, Greg Misiaszek, Nathanaël Wallenhorst & Jean-Phillipe Pierron • Arne Naess (Deep ecology) • Edgar Gonzalez-Gaudino	**Critical** • Constructed learning • Critical thinking • Problem-posing/solving • Social and environmental justice • Eco-literacy of "reading Earth" • Local and Indigenous	**Meaningful**	**Surfacing** **Dignifying**
	Transformational • Engaged • Action/solution-based Praxis • Ethical responsibility • Environmental stewardship	**Actively Engaging**	**Authenticating** **Linking**
	De-Distancing • Othering distance: Us/them • Geographical distance • Epistemological distance • Timewise distance: Now/future • Place-based learning	**Meaningful** **Socially Interactive**	**Role Modelling** **Bridging** **Braving**
	Holistic • Transdisciplinary • Planetary • Head-heart-hand	**Iterative**	**Exploring**
	Eco-centric • Connected to Nature • Diversity, inclusion, equity • Earth sustainability	**Meaningful** **Joyful**	**Dignifying** **Delighting** **Sensing** **Contemplating** **Rippling**

Indigenous Pedagogy	**Principles and Practices Promoted** (Adapted from Smith & Babich, 2024)	**Related i5 Characteristic**	**Related i5 Signature Moves**
Indigenous pedagogy is a teaching method that connects aboriginal stories as a guiding path toward knowledge, relying on the relationships between people and nature with broad, holistic interconnectedness. (Smith & Babich, 2022) Indigenous pedagogy best supports the preservation and dissemination of *Traditional Ecological Knowledge* (TEK) defined as knowledge and practices passed from generation to generation that is: informed by cultural memories and sensitivity to change; inseparable from one's cultural, spiritual, and social fabric; and which values the principles of reciprocity, kinship with nature, and living rightly on Earth. (Oregon State University, n.d.) <u>Variations & Manifestations</u> • Storytelling • Oral history and traditions • Narrative pedagogy • Oracy • Reporting back (Debriefing) • Partnership, bi-cultural, multidisciplinary research • Ways of knowing • Structured silences	**Personal and holistic** Actionable, formal and non-formal, and life-long learning is gained through deep reflection upon open, personal, and meaningful experiences.	**Meaningful** **Joyful**	**Personalizing** **Surfacing** **Dignifying** **Sensing**
	Experiential Authentic learning objectives are achieved via physical, emotional, and sensorial connections to the living environment and social community.	**Actively Engaging**	**Animating** **Authenticating** **Linking**
	Place-based learning Natural learning is built through *in situ* observations, hands-on exploration of symbolic, meaningful, beautiful, and natural places in community with others.	**Joyful** **Iterative**	**Sensing** **Comtemplating**
	Intergenerational kinship • Intergenerational learning—unique to Indigenous pedagogy—acknowledges and empowers older and more experienced community members. • Learners commit to knowledge sharing.	**Meaningful** **Joyful** **Socially Interactive** **Actively Engaging**	**Role Modelling** **Delighting** **Communifying** **Bridging** **Exploring** **Animating** **Linking**
	Critical Indigenization • Indigenous learning upholds, respects, and empowers indigenous research principles, practice, and methodologies. (L. T. Smith, 1999) • Indigenization seeks complementarity across the pedagogies, learning practices, and knowledge theories of Indigenous and western traditions. • Learning requires critical deconstruction of colonizing culture and colonized knowledge.	**Meaningful** **Iterative**	**Dignifying** **Braving** **Prototyping** **Revisiting** **Compassing**

Whatever the traditional learning outcomes and signature pedagogies of management education, preparing tomorrow's business leaders to understand the underlying nature and ramifications of global ecological deficits (Global Footprint Network, 2024); engaging them in a process of critical self-awareness, values clarification and ethical and moral reasoning vis-à-vis the fundamental causes and consequences of our plight; and sparking all their creative and cognitive energies in search of remedies and solutions—this is the both meaningful and needed learning that the i5 Signature Moves is able to stimulate.

For example, such learning can be achieved through i5 *Meaningful* - **Role Modeling** by demonstrating responsible leadership competencies in observable ways, such as centering sustainability within one's course content or setting an example through one's personal consumer choices or ecological behaviors. Whereas outdoor and environmental education refers to this as an act of "building servant leadership," critical ecopedagogy seeks to found more genuine and democratic student-teacher relationships upon a critical process of what may be called (Misiaszek, 2024) "de-distancing" via a social deconstruction of "us vs them" mentalities. Finally, within Indigenous pedagogy, the singular notion of "intergeneration kinship" expresses **Role Modeling** as a collective which, in practical terms, might encourage students to view instructors as a community of elders whose knowledge, experience, and "wisdom" find validation through a generation-to-generation process of knowledge-sharing that fosters an ethos of cyclical thinking and respect for the "circle of life" (James, 2022). As one author intones, "Sustainability is perhaps the most foundational way in which cyclical thinking is embedded in our modern consciousness, from recycling to renewable energy" (James, 2022).

The i5 pedagogical technique of - **Personalizing** (*Meaningful*) learning—*attuning to student interests, needs, and desire for agency in what they learn*—can be equally pertinent to students anxious about climate change (Marks et al., 2021) and seeking answers and responses through formal education. Outdoor and environmental education is designed to foster an ethic of simplicity as one response to frenetic and hyper-consumerist cultures. From the emerging field of Global Citizenship Education (GCE), self-directed and problem-based learning provides another method for building individual student agency, autonomy, and self-reliance. Indigenous pedagogy places particular emphasis on the value of personalized self-agency gained holistically through deep reflection upon one's most personal and meaningful experiences.

Uncovering the values, norms and biases that exist in ourselves, ideas, societies, and systems—the very definition of i5 *Meaningful* **Surfacing**—constitutes a clear educational objective that could just as well have been extracted untouched from a representative text in radical and critical ecopedagogy (e.g., Kahn, 2010). This i5 statement resonates across both the constructivist and related feminist paradigms. It captures the spirit and intent of Culturally Relevant Pedagogy-CRP (Ladson-Billings, 1995). And in one form or another, it appears across the mapped landscape of education for sustainability as an inescapable intellectual "road to Damascus" in which an ecocentric epistemology and mental universe slowly—but sometimes in a flash—replaces one's anthropocentric world view. **Surfacing** is about seeking transformative and third-order learning. It's about *seeing* the world differently and about *being in the world* differently. And while such "radicality" is neither stated nor implied in the i5 Playbook, its discreet presence there certainly authorizes any management instructor to use its critical edge to cut through any non-disruptive "business-as-usual" narrative (Ollinaho, 2022) still embedded in the syllabus, course lecture, signature pedagogy, academic department, discipline, professional association, institution, or accreditation standards, to mention just a few. In short, just as outdoor and environmental education uses its own form of **Surfacing** to foster contemplative spirits and meaningful lives founded upon rigorous observation and scholarship, so too can management education apply **Surfacing** to its own curricular and pedagogical needs and agenda. Similarly, Global Citizenship Education's (GCE) program of action-oriented and transformative learning captures the spirit and purpose of **Surfacing**, as do both the critical components of ecopedagogy and the holistic and personal attributes embedded in Indigenous pedagogy.

Despite its mention above as an i5 Signature Move least obviously related to an agenda of sustainability education, the i5 Signature Move of *Meaningful* **Dignifying**—i.e., *Honoring and supporting the identities and perspectives of minoritized and marginalized groups in your context*—constitutes a signature case study in how adaptable the i5 Framework is to the wider educational agenda of Earth sustainability and building solid social foundations, of which management education must play a larger role in achieving. First, it's clear that the intent of **Dignifying** is anthropocentric. From this human standpoint, it focuses effectively and appropriately on the importance of including, honoring, and supporting the many marginalized human voices suffering (or having suffered) from racism, bias, inequality, and discrimination. To this should be added the importance of making teaching and learning relevant and responsive to the languages, literacies, and cultural practices of students across categories of difference (Paris, 2012). And as we have seen elsewhere, the ethic of **Dignifying** holds a prominant

place within the pedagogical approaches of constructivism, feminism, and even experiential education via the good practice of “Acknowledgment” (National Society for Experiential Education, n.d.). Secondly, the Signature Move of **Dignifying**—as applied to humans engaged in learning about sustainability—certainly also appears in both Global Citizenship Education (GCE) as part of collaborative and participative learning, and in Indigenous pedagogy as part of the agenda of critical Indigenization concerning the role of indigenous research principles, practice, and methodologies (L. T. Smith, 1999).

That being said, let’s now consider how the principle of *Meaningful* **Dignifying** might be applied to a much wider ecocentric context that includes important ecological concepts such as planetary boundaries, biosphere integrity, animal rights, extinction, and speciesism, among others. To imagine a place for the i5 Playbook in such otherwise unexpected and “radical” terminological company, let’s consider the role of intercultural learning—an important component of business and management education via student exchanges, international education, and Erasmus and Erasmus+ mobility programs, especially in Europe (Schäfer & Walgenbach, 2024).

As is well known, and to set the scene, intercultural communication theory has an inspired intellectual pedigree stretching back to E.T. Hall in the 1950s (E.T. Hall, 1973). The practical conceptual outcome of some 60 years of research—i.e., intercultural competence—is widely considered the gold standard of student learning acquired through global education, intercultural training, mobility education, and study abroad. Students learn to detect and overcome ethnocentrism, cultural bias, status differentiation, power and privilege, all while being encouraged to adopt habits of the mind empathetic to marginalized groups, Indigenous populations, and those discriminated against simply because they are different.

It’s at this juncture that we thus see an opportunity to critically deconstruct the notion of intercultural competence by subjecting it to the values and assumptions of ecopedagogy, Indigenous pedagogy, Global Citizenship Education (GCE) and even Education for Sustainable Development (via SDG 14 and 15 on *Life below water* and *Life on land*, respectively). By taking an ecopedagogical approach to the celebration of *human* diversity, respect, empathy, and perspective-taking—and extend it to *non-human* diversity—we extend our circles of caring and concern to the natural world.

In so doing, we learn that we are part *of* Nature, *in* Nature, and dependent *on* Nature. As such, if instructors assign, for example, greater importance to animal rights and welfare as part of the 2030 Global Agenda (Schapper & Bliss, 2023) and approach such rights via either traditional or critical pedagogies (Ortiz, 2011), they signal to students a commitment to ethical behaviors (**Role Modeling**), expose them to the hypocrisy and cruelty embedded in speciesism (**Braving**), incite them to meta-reflect upon their inner spiritual and physical selves (**Contemplating**), and help them become aware of—and reconnect to—the larger and truly genuine "Earth family" to which they actually belong (**Bridging**). Because it's so flexible, adaptable, and expandable, the i5 Framework provides classroom solutions for virtually any learning outcome management educators might choose to achieve.

Indeed, the i5 Signature Move on **Dignifying** provides a pedagogical solution to many such moral predicaments precisely because it is grounded in cultural pluralism, critical self-awareness, and ethical reasoning. And when buttressed with i5 support—**Contemplating** (*Guiding students in reflection about their inner, spiritual, and physical selves through contemplative practices and meta-reflection*), **Rippling** (*Enabling students to grasp the profound impact of individual and collective actions in an interconnected world*), **Braving** (*Guiding students to bravely engage in controversial topics, complex experiences, and difficult conversations*), **Bridging** (*Connecting students to different cultures, disciplines and perspectives in ways that broaden and clarify their understandings*), and **Exploring** (*Designing open-ended, sometimes ill-structured, learning experiences where students are encouraged to mess about, experiment with ideas, and take calculated risks*)—it becomes clear that the i5 Playbook can be leveraged as a pedagogical tool to achieve even the most "radical" of learning outcomes drawn from ecopedagogy's own "deep green playbook" (e.g., Kahn, 2010; Misiaszek, 2024).

Finally, while it is unnecessary to highlight every potential point of alignment between i5 Signature Moves and achieving the teaching and learning agenda of education for sustainability—an exercise in this format that is both theoretical and interpretive—there is cause to include one additional element in this discussion—our relationship with Nature—that lies at the heart of the ecocentric worldview, and which constitutes a truly essential part of sustainability literacy (Bourdeau, 2004).

The importance of connecting *to* nature, being *in* nature, and being *of* nature is clearly present in the pedagogical approaches presented here. Such connections constitute the *raison d'être* of Outdoor Education, appear as an element of Education for Sustainable Development and Global Citizenship Education (GCE), but take a more dominant place in critical ecopedagogy and Indigenous pedagogy. This latter approach has a particularly elegant rendering of the meaning of place-based learning as "natural learning that is built through in situ observations, hands-on exploration of symbolic, meaningful, beautiful, and natural places in community with others" (Smith & Babich, 2024). Indigenous pedagogy's understanding of experiential education is equally engaging, even curiously sensual: "authentic learning objectives are achieved via physical, emotional, and sensorial connections to the living environment and social community" (Smith & Babich, 2024).

Can the i5 Playbook provide pedagogical responses to instructors committed to evoking in students transformative learning experiences through teaching both *in nature* and *about (human) nature* in ways that are spiritual, beautiful, natural, emotional, and sensorial? It's a lot to ask! Infusing fun, surprise, wonder, and celebration—the meaning of i5 *Joyful* **Delighting**—takes us forward several steps.

So too does providing space for students to notice and navigate a range of emotions within themselves and others—the meaning of *Joyful* **Sensing**. Guiding students in reflection about their inner, spiritual, and physical selves through contemplative practices and meta-reflection—the meaning of *Joyful* **Contemplating**—advances us further. So too does incorporating activities that focus students' attention, energizes them, or asks them to perform an action that invites them to physically move in their space or surroundings—the meaning of *Actively engaging* **Animating**. Designing open-ended, sometimes ill- structured, learning experiences where students are encouraged to mess about, experiment with ideas, and take calculated risks—the meaning of *Iterative* **Exploring**—advances us still further. And even *Iterative* **Compassing**—meant for decentering testing and summative grading to focus more on the student learning journey—takes us the final steps towards helping students imagine, through a discovery of their own nature *in* Nature, alone and with others both human and non-human, and perhaps in awe and reverence and gratitude for the beauty of a planet that provides so much abundance and protection—in short, a way to see the world differently.

Closing Remarks and Discussion

We know through our efforts to understand the connections between pedagogical approaches and the development of desired sustainability competences (Lozano et al., 2017) that the pedagogy we use most in higher education—lecturing either alone or in teams—doesn't work very well. Moreover, whatever impactful pedagogies we have used in the past that we think are better (and the several examples provided here really are quite good), there's no way to escape the fact that using them all over the past 75 years did not empower or enlighten us to see and avert the approaching Earth crisis and ongoing social crisis we continue to face.

Nevertheless, management education has every reason to embrace the i5 Framework for the sound advice it provides on *how to help students learn well*. For what i5 leaves implicit—*how to help students learn* what *well and indeed* why *we teach at all* (i.e., the importance and urgency of forging in students an ecocentric mindset and the corresponding leadership competencies to address seriously the social and environmental crisis via responsible management education)—the i5 Playbook, five Characteristics, and 20 Signature Moves can be as impactful as instructors choose to make them.

For this reason, it is also instructive to situate the i5 Framework and ten pedagogical approaches discussed in this study within the intellectual landscape of environmental ethics, i.e., the moral relationship we *Homo sapiens* establish with the natural world and thus the level of care and stewardship we extend over our planetary home and fellow Earth lifeforms. To do this, we take as a given the insightful chart designed by Stibbe (2019) who plots twelve environmental constructs, ideologies, approaches, or movements across an X-axis of conservativism vs. transformative change, and a Y-axis of anthropocentrism vs. ecocentrism. In addition, Stibbe indicates the extent to which these various "movements" express a future-oriented worldview that tends towards the optimistic, neutral, or pessimistic vis-à-vis the outcome of humanity's interaction with the planet. (See Figure 3 and corresponding glossary in the Appendix.)

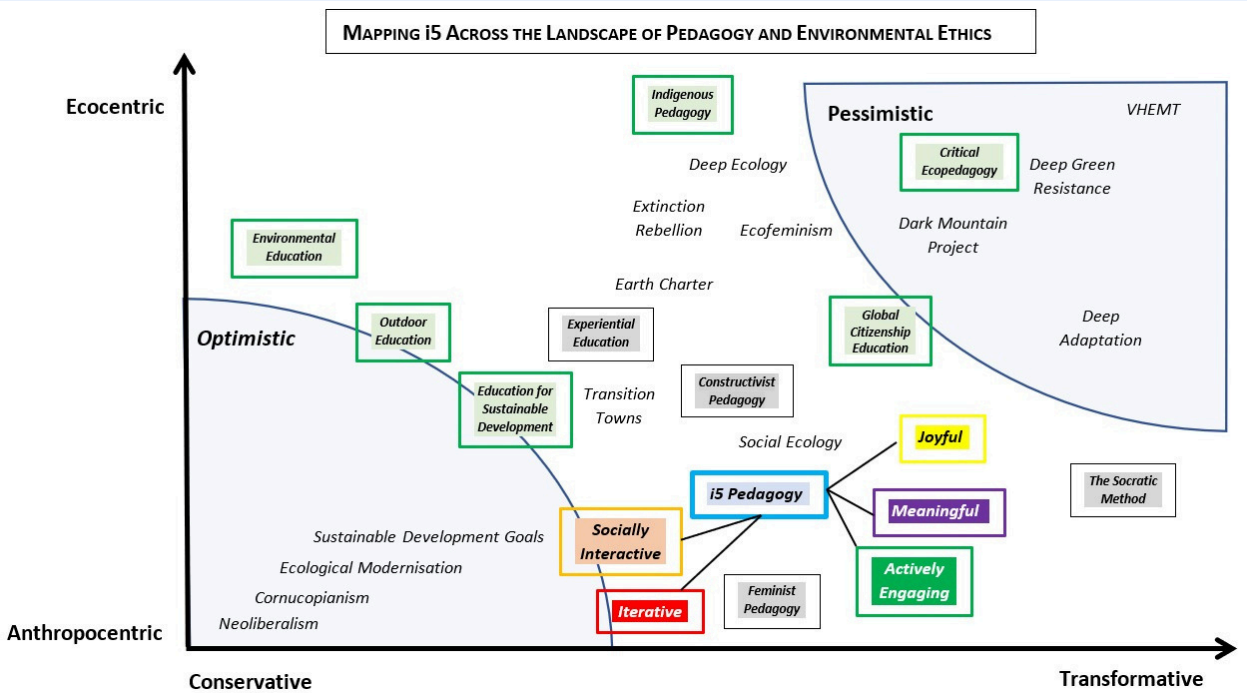


Figure 3. Adapted from Arran Stibbe (2019), 'Education for Sustainability and the Stories We Live By.' In: *Prioritizing Sustainability Education: A Comprehensive Approach*. Routledge. ISBN 9780367076436. Stibbe provides what he calls "an illustrative mapping of approaches to stimulate discussion." He also says, "The choice of the scales and the placing of the approaches are all subject to debate and change." The name and position of all original concepts by Stibbe are unchanged from the original. Only the i5 shaded boxes have been added in 2024 by Blair. Their placement is equally subject to debate and change.

Of course, a mapping exercise such as this is designed only to stimulate discussion and generate insights into otherwise unsuspected relationships among discrete pedagogical approaches for achieving high-impact learning outcomes in management education. And as has been mentioned, because the i5 Framework is, overall, ecologically agnostic on the root cause and consequence of the unfolding Earth crisis, a map such as this implicitly generates ideas for how one might go about making i5 Characteristics and Signature Moves more explicitly sensitive to teaching and learning more responsibly in the Anthropocene classroom.

Indeed, by contextualizing the i5 Framework in this way, and by exploring ways to adapt it to both existing pedagogical traditions and to the emerging ecocentric concerns of today's students, we provide instructors with additional ways to think about the i5 Framework, to link it to their existing classroom practice, and to increase its pertinence and effectiveness and therefore practical use. Indeed, and as has been stated several times, what emerges from this study is just how flexible and adaptable the i5 Framework is.

In this spirit, what insights about the i5 Framework can be proposed from this mapping exercise? First, and as indicated on Y-axis of Figure 3, the i5 Framework—rooted as it is in multiple theories of human development (Wilson, 2023)—can only but be considered anthropocentric in its basic conceptual design. Of course, this is equally true for virtually any traditional non-ecological pedagogy such as the Feminist and Socratic approaches described above. However, the i5 Signature Moves of **Personalizing**, **Surfacing**, **Dignifying** (*Make Learning Meaningful*); **Delighting**, **Sensing**, **Contemplating**, **Rippling** (*Foster Joy and Well-being*); and **Authenticating**, (*Facilitating Active Engagement*)—can meaningfully be enlisted to foster an ecocentric mindset and achieve an Earth-friendly agenda should instructors elect to do so.

For example, by **Surfacing** to students the pro-human biases and values embedded in our economic systems and corresponding commercial outcomes; by **Dignifying** before students the rights and perspectives of marginalized non-human entities commercialized for human benefit; by **Delighting** students in the wonders of the natural world or helping them sense their existential community with animal and plant kingdoms; by guiding them in **Contemplating**, reflection, and meta-reflection upon their inner Earth affinities and interdependencies; by highlighting the **Rippling** effect of thoughtless consumer behavior upon delicate fabrics of life; or by **Authenticating** the personal danger to their current and future realities of ignoring the signs and cries of a world we collectively edge toward the brink—management instructors take control of the i5 Framework and begin to steer it towards explicitly ecocentric mindsets and Earth-friendly learning outcomes. In this way, teaching and learning becomes more *engaging*, *meaningful*, and *joyful* precisely because such pedagogy is natural, intimate, passionate, spiritual, sacred, and kind—in a word, sustainable.

As a second insight, the placement of the i5 Framework roughly midway along the X-axis might suggest that it is better positioned (and perhaps better conceived) for effecting transformative societal change than for developing ecocentric mindsets. It is certainly true that the process of developing the i5 Framework has been premised upon distilling from the history of teaching and learning the very best of pedagogical practice where “best” refers to types of teaching most likely to result in responsible Earth-friendly outcomes diametrically opposed to the business-as-usual management education so heavily implicated *historically* in generating the Earth crisis in the first place. The potential of the i5 Framework for effecting transformative learning in management education is therefore high.

But as we have seen, (Sterling, 2011), truly transformative learning is rare, hard for students to process, challenging for instructors to design, and disruptive "to predominant norms in teaching and learning policies and practices." It has been at least two full decades since educators already started asking "whether higher education is ready for transformative learning, [...] whether students are mentally and emotionally prepared for this type of learning (Sterling, 2011), and "whether the academic institution has the ability to foster and nurture these types of experiences" (Moore, 2005). So, as indicated both in Figure 3 and given the evolving tenor of this essay, achieving the full promise of the i5 Framework depends upon the commitment and success of academic leadership—president, provost, dean, and *faculty*—in choosing to use it *intentionally* to articulate and realize ecocentric learning and developmental outcomes that are transformative, *and which will be disruptive*. The i5 Framework is fit for ecological purpose but to succeed, it needs educators who seriously embrace that ecological cause, and who actually welcome the challenges and emotions inherent in transformative learning. This is not a given.

Finally, and looking at the last dichotomy of Figure 3, would such a transformative *and* ecocentric i5 pedagogy tend toward the pessimistic or toward the optimistic? As stated elsewhere in this paper, the three most conservative "green" pedagogies—Education for Sustainable Development, Outdoor Education, and Environmental Education, each driven to one extent or another by the values of neoliberalism, Cornucopianism, ecological modernization, and the 17 SDGs—have all failed to alert our species to the unfolding planetary-wide ecological and social crisis, much less avert it. The optimism of this early educational agenda was obviously misguided, premised as it was on a naïve belief that teaching and learning about the natural world within limited areas of the Academy would be sufficient to counter the effects of a global economic system conceived for unlimited material growth, and this on a planet fast expanding demographically. What was perhaps missing was an emphasis on just how much *meaning*, *joy*, *well-being*, *social interaction*, *active engagement*, and *fun* could be had in a world of *iterative*, *ill-structured*, "*messing about*" with friends and community and fellow Earth lifeforms—what we might call, socratically, a life of implications examined, embraced, and wholly worth living.

Paraphrasing Mahatma Gandhi to conclude this essay, if pessimism means there's only enough for everyone's need but not enough for everyone's greed (Cheung & Bauer, 2021), then the project of i5 pedagogy—if embraced by ecocentric and kind-hearted Earth citizen-teachers interested in building a sustainable future—provides, with *some* optimism, the best and most realistic hope that humanity gives itself a principled and responsible management education. That would be transformative.

Next Steps

As a follow-up to this exploration of pedagogical frameworks and their many intersections with i5 Characteristics and Signature Moves, it is useful to pause and reflect upon one's own teaching journey. This reflective process provides an opportunity to identify, assess, and calibrate pedagogical alignment both with the several frameworks discussed above and with the innovative i5 Framework now available. There are many implications and things to consider when adopting or adapting new teaching methods to past practice, habit, and outlook. As is evident in the review of the pedagogical theories above, critical, and ongoing reflection is a necessary step towards fostering a deeper understanding of what is at stake in the pursuit of designing and delivering teaching and learning activities that result in transformative learning outcomes, for both student and instructor. To facilitate this reflective process, we invite you to consider the following questions:

- **Alignment with current practices**: What practices discussed in this paper resonate most closely with your current teaching approach? How can you enhance these practices to deepen student engagement and learning?
- **Novelty and exploration**: Which practices presented here feel most unfamiliar or innovative to you? What aspects of these practices intrigue you, and how might they enrich your teaching?
- **Impact on learning**: Reflecting on the nature of transformational learning, what specific impact do you aspire to have upon your students? Does your current practice foster this impact?
- **Curiosity and future growth**: Which practices described herewith pique your interest most, and which will you explore further? What steps can you take to investigate these practices more deeply, whether through professional development, collaboration with peers, or practical application in your classroom?

Take time to reflect upon these questions and the tentative answers you formulate. Allow your thoughts to unfold, expand, and guide you toward designing and delivering richer and more impactful educational experiences for you—but particularly for your students.

Appendix

Summary charts of alignment per i5 Signature Move

This chart centralizes the many relationships highlighted between the ten pedagogies discussed above and the i5 Framework. This chart, however, reverses the presentation by assigning to each of the twenty i5 Signature Moves the entirety of the related theories and corresponding principles and practices herein addressed. In so doing, this presentation indicates where i5 Signature Moves exhibit similar pedagogical concerns vis-à-vis pre-existing teaching and learning methodologies.

Make Learning Meaningful		
Signature Moves	**Related Theory**	**Principles and Practices Promoted**
Dignifying	Critical Ecopedagogy	Critical
	Critical Ecopedagogy	Eco-centric
	Global Citizenship Education (GCE)	Collaborative and participative learning
	Indigenous Pedagogy	Personal and holistic
	Indigenous Pedagogy	Critical Indigenization
	Socratic Method	Spark Curiosity & Wonder
	Feminist Pedagogy	Addressing power & empowerment
	Feminist Pedagogy	Building community
	Feminist Pedagogy	Privileging individual voice as a way of knowing
Personalizing	Global Citizenship Education (GCE)	Self-directed problem-based learning
	Indigenous Pedagogy	Personal and holistic
	Outdoor & Environmental Education	Pursuing simplicity
	Socratic Method	Cross-examination (*Elenchus*)
	Socratic Method	Self-Discovery
	Constructivist Pedagogy	Knowledge and learning are personal
	Constructivist Pedagogy	Learning requires context and relevancy
	Experential Education	Orientation and Training
	Feminist Pedagogy	Embracing diversity & the role of students' personal experience
	Feminist Pedagogy	Privileging individual voice as a way of knowing
Role Modeling	Outdoor & Environmental Education	Building servant leadership
	Socratic Method	Learn Cooperatively
	Socratic Method	Ethical and Moral Reasoning

	Constructivist Pedagogy	Learning requires challenge and support
	Feminist Pedagogy	Altering teacher-learner relationships
	Experiential Education	Intention
	Critical Ecopedagogy	De-distancing
	Indigenous Pedagogy	Intergenerational kinship
Surfacing	Indigenous Pedagogy	Personal and holistic
	Outdoor & Environmental Education	Fostering a contemplative spirit
	Outdoor & Environmental Education	Pursuing simplicity
	Socratic Method	Self-Discovery
	Socratic Method	Ethical and Moral Reasoning
	Socratic Method	Embrace Challenge and Difficulty
	Constructivist Pedagogy	Knowledge is constructed upon prior learning
	Feminist Pedagogy	Addressing power and empowerment
	Feminist Pedagogy	Privileging individual voice as a way of knowing
	Feminist Pedagogy	Challenging traditional pedagogies, practice, knowledge, and values
	Critical Ecopedagogy	Critical
	Education for Sustainable Development (ESD)	Critical reflection
	Global Citizenship Education (GCE)	Action-oriented and transformative learning

Facilitate Active Engagement		
Signature Moves	**Related Theory**	**Principles and Practices Promoted**
Animating	Education for Sustainable Development (ESD)	Active participatory learning
	Global Citizenship Education (GCE)	Integrated formal and informal learning
	Indigenous Pedagogy	Experiential
	Indigenous Pedagogy	Intergenerational kinship
	Constructivist Pedagogy	Learning is an active cognitive process
Authenticating	Critical Ecopedagogy	Transformational
	Education for Sustainable Development (ESD)	Critical reflection
	Global Citizenship Education (GCE)	Action-oriented and transformative learning
	Indigenous Pedagogy	Experiential
	Socratic Method	Dialectical Inquiry
	Socratic Method	Self-Discovery
	Socratic Method	Ethical & Moral Reasoning
	Socratic Method	Embrace Challenge and Difficulty
	Constructivist Pedagogy	Learning is an active cognitive process
	Feminist Pedagogy	Addressing power & empowerment
	Experiential Education	Authenticity
Linking	Critical Ecopedagogy	Transformational
	Education for Sustainable Development (ESD)	Active participatory learning
	Education for Sustainable Development (ESD)	Collaborative learning
	Global Citizenship Education (GCE)	Collaborative and participative learning
	Indigenous Pedagogy	Experiential
	Indigenous Pedagogy	Intergenerational kinship
	Socratic Method	Dialectical Inquiry
	Socratic Method	Learn Cooperatively
	Socratic Method	Spark Curiosity and Wonder
	Constructivist Pedagogy	Knowledge is holistic and integrated
	Feminist Pedagogy	Building community

Design for Iteration		
Signature Moves	**Related Theory**	**Principles and Practices Promoted**
Compassing	Education for Sustainable Development (ESD)	Creative “futures thinking”
	Global Citizenship Education (GCE)	Integrated formal and informal learning
	Indigenous Pedagogy	Critical Indigenization
	Socratic Method	Self-Discovery
	Experiential Education	Assessment and Evaluation
	Feminist Pedagogy	Altering teacher-learner relationships
	Feminist Pedagogy	Challenging traditional pedagogies, practice, knowledge, and values
Exploring	Critical Ecopedagogy	Holistic
	Global Citizenship Education (GCE)	Integrated formal and informal learning
	Socratic Method	Cross-examination (Elenchus)
	Socratic Method	Learn Cooperatively
	Socratic Method	Self-Discovery
	Socratic Method	Embrace Challenge and Difficulty
	Indigenous Pedagogy	Intergenerational kinship
	Experiential Education	Preparedness and Planning
	Feminist Pedagogy	Privileging individual voice as a way of knowing
Prototyping	Education for Sustainable Development (ESD)	Systemic thinking
	Education for Sustainable Development (ESD)	Creative “futures thinking”
	Global Citizenship Education (GCE)	Inter- and trans-disciplinary learning
	Indigenous Pedagogy	Critical Indigenization
	Socratic Method	Dialectical Inquiry
Revisiting	Education for Sustainable Development (ESD)	Creative “futures thinking”
	Global Citizenship Education (GCE)	Self-directed problem-based learning
	Indigenous Pedagogy	Critical Indigenization
	Socratic Method	Dialectical Inquiry
	Socratic Method	Cross-examination (*Elenchus*)
	Constructivist Pedagogy	Learning is an active cognitive process. Monitoring and Continuous Improvement
	Experiential Education	

Foster Joy & Well-being		
Signature Moves	**Related Theory**	**Principles and Practices Promoted**
Contemplating	Indigenous Pedagogy	Place-based learning
	Critical Ecopedagogy	Eco-centric
	Global Citizenship Education (GCE)	Self-directed problem-based learning
	Outdoor & Environmental Education	Developing a sense of place
	Outdoor & Environmental Education	Pursuing simplicity
	Socratic Method	Cross-examination (Elenchus)
	Socratic Method	Spark Curiosity and Wonder
	Socratic Method	Self-Discovery
	Socratic Method	Ethical & Moral Reasoning
	Socratic Method	Embrace Challenge and Difficulty
	Constructivist Pedagogy	Learning happens by doing
	Experiential Education	Reflection
	Outdoor & Environmental Education	Fostering a contemplative spirit
	Feminist Pedagogy	Embracing diversity and the role of students' personal experience
Delighting	Critical Ecopedagogy	Eco-centric
	Global Citizenship Education (GCE)	Integrated formal and informal learning
	Indigenous Pedagogy	Intergenerational kinship
	Outdoor & Environmental Education	Developing a sense of place
	Socratic Method	Spark Curiosity and Wonder
	Socratic Method	Self-Discovery
	Constructivist Pedagogy	Learning is an active cognitive process.
	Experiential Education	Acknowledgment
Rippling	Critical Ecopedagogy	Eco-centric
	Education for Sustainable Development (ESD)	Critical reflection
	Global Citizenship Education (GCE)	Action-oriented and transformative learning
	Socratic Method	Embrace Challenge and Difficulty
	Feminist Pedagogy	Building community
	Feminist Pedagogy	Challenging traditional pedagogies, practice, knowledge, and values
Sensing	Critical Ecopedagogy	Eco-centric
	Indigenous Pedagogy	Personal and holistic
	Indigenous Pedagogy	Place-based learning
	Socratic Method	Spark Curiosity and Wonder
	Socratic Method	Self-Discovery
	Socratic Method	Ethical and Moral Reasoning
	Socratic Method	Embrace Challenge and Difficulty
	Constructivist Pedagogy	Knowledge and learning are personal.
	Feminist Pedagogy	Embracing diversity & the role of students' personal experience

Develop Supportive Social Interaction		
Signature Moves	**Related Theory**	**Principles and Practices Promoted**
Braving	Indigenous Pedagogy	Critical Indigenization
	Critical Ecopedagogy	De-Distancing
	Education for Sustainable Development (ESD)	Critical reflection
	Education for Sustainable Development (ESD)	Creative “futures thinking”
	Global Citizenship Education (GCE)	Action-oriented and transformative learning
	Outdoor & Environmental Education	Cultivating an adventuresome spirit
	Socratic Method	Dialectical Inquiry
	Socratic Method	Learn Cooperatively
	Socratic Method	Ethical and Moral Reasoning
	Socratic Method	Embrace Challenge and Difficulty
	Constructivist Pedagogy	Learning requires challenge and support
Bridging	Education for Sustainable Development (ESD)	Systemic thinking
	Global Citizenship Education (GCE)	Inter- and trans-disciplinary learning
	Indigenous Pedagogy	Intergenerational kinship
	Socratic Method	Learn Cooperatively
	Socratic Method	Ethical & Moral Reasoning
	Socratic Method	Embrace Challenge and Difficulty
	Constructivist Pedagogy	Knowledge is holistic and integrated
	Feminist Pedagogy	Embracing diversity & the role of students’ personal experience
	Feminist Pedagogy	Building community
	Critical Ecopedagogy	De-distancing
Communifying	Education for Sustainable Development (ESD)	Active participatory learning
	Education for Sustainable Development (ESD)	Collaborative learning
	Global Citizenship Education (GCE)	Collaborative and participative learning
	Indigenous Pedagogy	Intergenerational kinship
	Socratic Method	Learn Cooperatively
	Socratic Method	Spark Curiosity and Wonder
	Constructivist Pedagogy	Learning is social and cooperative
	Feminist Pedagogy	Altering teacher-learner relationships
	Feminist Pedagogy	Building community
Teaming	Education for Sustainable Development (ESD)	Active participatory learning
	Global Citizenship Education (GCE)	Collaborative and participative learning
	Socratic Method	Spark Curiosity & Wonder
	Socratic Method	Embrace Challenge & Difficulty
	Constructivist Pedagogy	Learning is social and cooperative.
	Feminist Pedagogy	Privileging individual voice as a way of knowing

Glossary for Figure 3

Anthropocentrism — In its original connotation in environmental ethics, *Anthropocentrism* is the belief that value is human-centered and that all other beings are means to human ends (Kopnina et al., 2018).

Cornucopianism — A belief system affirming that Earth provides humanity with abundance and infinite resources and that human technological ingenuity is capable of resolving any environmental or social issue (Jonsson, 2014).

Conservative — As applied to societal change, the notion of *conservative* refers to processes that are historically inherited, preserve traditional authority, institutions, customs, and values, and which are incremental, prudent, and tested by time (Burke, 1790; Kirk, 1953; Nash, 2023).

Dark Mountain Project — An international cultural movement that responds to the current declining state of the world and biosphere through creative, artistic, and imaginative cultural means (Hine & Kingsnorth, 2010; Dark Mountain, n.d.).

Deep Adaptation — A concept, program, and social movement for developing "collapse-readiness" (i.e., creating a system for fair distribution of life essentials such as food, water, energy, and health care) and "collapse-transcendence" (fostering psycho-social-spiritual-cultural shifts to accept and live through collapse with some composure and stability) (Bendell, 2018).

Deep Ecology — An environmental belief system affirming the inherent value of all lifeforms, ecosystems, and living environments regardless of their instrumental utility to human needs (Sessions, 1987; Naess, 2005; Ambrosius, 2005; Rothenberg, 2012).

Deep Green Resistance — A radical, US-based environmental movement that believes industrial civilization constitutes an existential threat to natural environments; calls for its dismantlement; and seeks to return to pre-agricultural levels of technology (Jensen et al., 2011; LeVasseur, 2017).

Earth Charter — An international people's declaration of environmental values and ethical principles for building a just, sustainable, and peaceful global society in the 21st century (Weakland & Corcoran, 2009).

Ecocentrism — A belief system premised upon valuing nature for its own sake apart from any utilitarian value to human need and aspiration. (Thompson & Barton, 1994; Taylor et al., 2020).

Ecofeminism — A belief system affirming that the domination of women and the degradation of the environment are the consequences of patriarchy and capitalism (Buckingham, 2015; Gough et al., 2024).

Ecological Modernization —A belief system affirming that humans can sustain economic growth and manage ecological impact through political, economic, and social rationalization (Hajer, 1995; Hanf, 2003).

Environmental Ethics — *Environmental ethics* is the discipline in philosophy that studies the moral relationship of human beings to—and the value and moral status of —the environment and its non-human contents (Brennan & Lo, 2021).

Extinction Rebellion — *Extinction Rebellion* is a decentralized, international, and politically non-partisan movement using non-violent direct action and civil disobedience to persuade governments to act justly on the climate and ecological emergency (Extinction Rebellion, n.d.; Hayes et al., 2024).

Neoliberalism — A belief system affirming that optimal public decisions and resource allocations are best achieved through the workings of private and unregulated markets (Navarro, 2007; Vallier, 2021).

Social Ecology — The study of how humans interact with natural environments and how such interaction influences social structures and power hierarchies which creates or exacerbates environmental and social problems (Bookchin, 2005; Brown et al., 2013).

Transformative — As applied to societal change, the notion of *transformative* refers to a fundamental, intentional, system-wide reorganization across political, technological, economic, and social factors, including paradigms and models, social norms and practices, goals and values, and policies and laws. Transformative change achieves outcomes at scale and embodies the concept of institutionally sustained results, i.e., consistency of achievement over time that excludes short-term, transitory impact (IPBES, 2022).

Transition Towns — A social movement dedicated to helping towns and communities transition to self-reliance, sustainability, and resilience in the face of peak oil and climate change (Hopkins, 2008; Connors & McDonald, 2010).

VHEMT — The *Voluntary Human Extinction Movement* is a radical environmental project calling for people to abstain from reproduction in order to cause the gradual voluntary extinction of humankind and thus save planet Earth from the degradations of *Homo sapiens* (TVHEM, n.d., Johnson, 2020).

References

Abenoza, S. (2024, July 9). 'Socratic dialogue' as a management tool. *Forbes*. https://www.forbes.com/sites/esade/2024/07/09/socratic-dialogue-as-a-management-tool/

About - Dark Mountain. (2024, September 23). Dark Mountain. https://dark-mountain.net/about/

Allen, A. (2022). An Introduction to Constructivism: Its Theoretical Roots and Impact on Contemporary Education. *Journal of Learning Design and Leadership*, 1(1).

Álvarez-García, O., & Sureda-Negre, J. (2023). Greenwashing and education: An evidence-based approach. *The Journal of Environmental Education*, 54(4), 265–277. https://doi.org/10.1080/00958964.2023.2238190

Ambrosius, W. (2005). Deep Ecology: A debate on the role of humans in the environment. *Ambrosius UW-L Journal of Undergraduate Research VIII*. https://www.uwlax.edu/globalassets/offices-services/urc/jur-online/pdf/2005/ambrosius.pdf

Bateson, G. (1972). *Steps to an ecology of mind: Collected Essays in Anthropology, Psychiatry, Evolution, and Epistemology*. Chandler publications for health sciences.

Benavot, A. (2017). Education for people, prosperity and planet: Can we meet the sustainability challenges? *European Journal of Education*, 52(4), 399–403. https://doi.org/10.1111/ejed.12248

Bendell, J. (2018). Deep Adaptation: A Map for Navigating Climate Tragedy. In *Institute for Leadership and Sustainability* (IFLAS) (2nd ed.). University of Cumbria. https://insight.cumbria.ac.uk/id/eprint/4166/

Berg, M. V., Paige, R. M., & Lou, K. H. (Eds.). (2012). *Student learning abroad: What Our Students Are Learning, What They're Not, and What We Can Do About It*. Taylor & Francis.

Boa, E. A., Wattanatorn, A., & Tagong, K. (2018). The development and validation of the Blended Socratic Method of Teaching (BSMT): An instructional model to enhance critical thinking skills of undergraduate business students. *Kasetsart*

Journal of Social Sciences, 39(1), 81– 89. https://doi.org/10.1016/j.kjss.2018.01.001

Boland, H., & Heintzman, P. (2010). The perceived impact of a university outdoor education program on students' environmental behaviors. In 2009 *Northeastern Recreation Research Symposium* (Vol. 66, pp. 31–35). https://www.nrs.fs.fed.us/pubs/gtr/gtr-nrs-p-66papers/05-boland-p-66.pdf

Bookchin, M. (2005). *The ecology of freedom: The Emergence and Dissolution of Hierarchy*.

Bourdeau, P. (2004). The man–nature relationship and environmental ethics. *Journal of Environmental Radioactivity*, 72(1–2), 9–15. https://doi.org/10.1016/s0265-931x(03)00180-2

Brennan, A., & Lo, N. Y. S. (2021, December 3). *Environmental Ethics*. Stanford Encyclopedia of Philosophy. Retrieved December 3, 2024, from https://plato.stanford.edu/entries/ethics-environmental/

Brown, T., Jeanes, R., & Cutter-Mackenzie, A. (2013). Social ecology as education. In B. Wattchow, R. Jeanes, L. Alfrey, T. Brown, A. Cutter-Mackenzie, & J. O'Connor (Eds.), *The Socioecological Educator* (pp. 23–45). https://doi.org/10.1007/978-94-007-7167-3_2

Brownell, S. E., & Tanner, K. D. (2017). Barriers to Faculty Pedagogical Change: Lack of Training, Time, Incentives, and. . .Tensions with Professional Identity? *CBE—Life Sciences Education*, 11(4). https://doi.org/10.1187/cbe.12-09-0163

Buckingham, S. (2015). Ecofeminism. In *International Encyclopedia of the Social & Behavioral Sciences (Second Edition)* (pp. 845–850). https://doi.org/10.1016/b978-0-08-097086-8.91020-1

Burke, E. (1790). *Reflections on the revolution in France*.

Carson, R. (2020). *Silent Spring*. Penguin Books Limited. (Original, 1962)

Cheung, D., & Bauer, J. N. (2021). Greed, Self-Interest and Business Ethics -A Comparative Discussion of Gandhi and Novak. *Journal of Religion and Business Ethics*, 4(2).

Cobb, E. M. (1959). The ecology of imagination in childhood. *Daedalus*, 88(3), 537–548. http://ci.nii.ac.jp/ncid/BA22806452

Coker, J. S., Heiser, E., Taylor, L., & Book, C. (2016). Impacts of experiential learning depth and breadth on student outcomes. *Journal of Experiential Education*, 40(1), 5–23. https://doi.org/10.1177/1053825916678265

Connors, P., & McDonald, P. (2010). Transitioning communities: community, participation and the Transition Town movement. *Community Development Journal*, 46(4), 558–572. https://doi.org/10.1093/cdj/bsq014

Conor, P. (2023, February 23). *The Socratic method: fostering critical thinking*. Colorado State University Institute for Learning and Teaching. Retrieved November 29, 2024, from https://tilt.colostate.edu/the-socratic-method/

Curcio, H. (2023). What is a socratic education? In *Springer eBooks* (pp. 1–15). https://doi.org/10.1007/978-3-030-81037-5_16-1

Curnier, D. (2019). Politiques éducatives, développement, durable et Anthropocène: visions, limites, et opportunités. In N. Wallenhorst, *Eduquer en Anthropocène*. Editions Le Bord de l'eau.

Darder, A. (2010). Preface. In R. Kahn, *Critical Pedagogy, Ecoliteracy, & Planetary Crisis: The Ecopedagogy Movement* (p. xvii).

Dark Mountain. (n.d.). *About the Dark Mountain Project*. Retrieved December 3, 2024, from https://dark-mountain.net/about/

Din, M. N. U., Faizi, W. U. N., & Khan, A. M. (2018). Impact of formative assessment and feedback on higher education. *Global Social Sciences Review*, *III*(IV), 498–514. https://doi.org/10.31703/gssr.2018(iii-iv).34

Dreher, J. A. (2013). Strategies for Institutional Changes. In G. Hesser, J. Duley, M. King, & R. Ross, *Strengthening experiential education: A new era*. CreateSpace Independent Publishing Platform.

Earlham College. (n.d.). *Outdoor Education*. Retrieved September 30, 2024, from https://earlham.edu/academics/majors-minors-programs/outdoor-education-applied-minor/outdoor-education/

Elder, L., & Paul, R. (1998). The role of socratic questioning in thinking, teaching, and learning. *The Clearing House a Journal of Educational Strategies Issues and Ideas*, 71(5), 297–301. https://doi.org/10.1080/00098659809602729

Elder, L., & Paul, R. (2010). The role of socratic questioning in thinking, teaching, and learning. *The Clearing House a Journal of Educational Strategies Issues and Ideas*, *71*(5), 297–301. https://doi.org/10.1080/00098659809602729

Evans, N., & Ferreira, J. (2019). What does the research evidence base tell us about the use and impact of sustainability pedagogies in initial teacher education? *Environmental Education Research*, *26*(1), 27–42. https://doi.org/10.1080/13504622.2019.1703908

Extinction Rebellion. (n.d.). *What is XR (Extinction Rebellion)*. Retrieved December 3, 2024, from https://rebellion.global/about-us/

Figueiró, P. S., & Raufflet, E. (2015). Sustainability in higher education: a systematic review with focus on management education. *Journal of Cleaner Production*, *106*, 22–33. https://doi.org/10.1016/j.jclepro.2015.04.118

Ford, P. (1986). Outdoor education: definition and philosophy. *Resources in Education*, *21*(8). http://files.eric.ed.gov/fulltext/ED267941.pdf

Freire, P. (1972). *Pedagogy of the oppressed*. (Original work published 1968)

Friesen, K. L., & Stephens, C. M. (2016). Circles of Learning: Applying socratic pedagogy to learn modern leadership. *Journal of Leadership Education*, *15*(1), 76–85. https://doi.org/10.12806/v15/i1/t1

Garnham, W., & Oprandi, P. (2024). Outdoor learning in higher education. In *Routledge eBooks*. https://doi.org/10.4324/9781003436928

George, L. (2015). Socrates on Teaching: Looking back to move education forward. *Procedia - Social and Behavioral Sciences*, *174*, 3970–3974. https://doi.org/10.1016/j.sbspro.2015.01.1142

Global Footprint Network. (2024). *Earth Overshoot Day*. Retrieved September 30, 2024, from https://www.footprintnetwork.org/our-work/earth-overshoot-day/

Gosling, J., & Grodecki, A. (2020). Competences for Responsible management (and leadership) education and practice. In *SAGE Publications Ltd eBooks* (pp. 245–264). https://doi.org/10.4135/9781526477187.n16

Gough, A., Ho, Y. C. J., Lloro, T., Russell, C., Walters, S., & Whitehouse, H. (2024). Ecofeminisms and education: repositioning gender and environment in

education. *Gender and Education*, 36(4), 299– 311. https://doi.org/10.1080/09540253.2024.2329289

Gregory, R. P. (2021). When is greenwashing an easy fix? *Journal of Sustainable Finance & Investment*, 13(2), 919–942. https://doi.org/10.1080/20430795.2021.1907091

GSI Teaching & Resource Center, UC Berkley. (2016). *Learning: theory and research*. https://gsi.berkeley.edu/media/Learning.pdf

Hajer, M. A. (1997). The politics of environmental discourse. In *Oxford University Press eBooks*. https://doi.org/10.1093/019829333x.001.0001

Hall, E. T. (1973). *The silent language*. Anchor.

Hanf, K. (2003). Implementing international environmental policies. In *Environmental policy in an international context* (pp. 197–221). https://doi.org/10.1016/s1874-7043(03)80027-6

Hayes, G., Cammiss, S., Doherty, B., & Saunders, C. (2024). Extinction Rebellion's disobedient environmental citizenism. *Environmental Politics*, 1–20. https://doi.org/10.1080/09644016.2024.2406183

Hine, D., & Kingsnorth, P. (Eds.). (2010). *Dark Mountain - Issue 1*. Hoffmann, F. L., & Stake, J. E. (1998). Feminist Pedagogy in Theory and Practice: An Empirical investigation. *NWSA Journal*, 10(1), 79–97. https://doi.org/10.2979/nws.1998.10.1.79

Honey, M., & Kanter, D. E. (2013). *Design, make, play: Growing the Next Generation of STEM Innovators*. Routledge.

Hopkins, R. (2008). *The Transition Handbook: From Oil Dependency to Local Resilience*. https://openlibrary.org/books/OL17017108M/The_Transition_Handbook

Illich, I. (1971). *Deschooling society*. IPBES. (2022). *Thematic assessment of the sustainable use of wild species of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. https://doi.org/10.5281/zenodo.8199039

James, V. (2022, June 17). The circle of life: a human obsession with cycles. *Cambridge Alumni Magazine*. https://magazine.alumni.cam.ac.uk/the-circle-of-life-a-human- obsession-with-cycles/

Jensen, D., McBay, A., & Keith, L. (2011). *Deep green resistance: Strategy to Save the Planet*. Seven Stories Press.

Johnson, J. (2020). The End of the World, The future of the Earth: bioplurality and the politics of human extinction. *Journal for the History of Rhetoric*, *23*(1), 30–53. https://doi.org/10.1080/26878003.2020.1694378

Jonsson, F. A. (2014). The Origins of Cornucopianism: A Preliminary Genealogy. *Critical Historical Studies*, *1*(1), 151–168. https://doi.org/10.1086/675081

Kahn, R. (2010). *Critical Pedagogy, Ecoliteracy, & Planetary Crisis: The Ecopedagogy Movement*.

Kegan, R. (1982). The Evolving self: problem and process in human development. In *The Canadian Journal of Sociology* (Issue 3, p. 357). Harvard University Press. https://doi.org/10.2307/j.ctvjz81q8

Kegan, R. (1994). *In over our heads: The Mental Demands of Modern Life*. Harvard University Press.

Kirk, R. (1953). The Conservative Mind: from Burke to Santayana. In *The Journal of Philosophy* (Issue 18, pp. 493–499).

Kirschner, P. A., Sweller, J., & Clark, R. E. (2016). Why minimal guidance during instruction does not work: An analysis of the failure of constructivist, discovery, Problem-Based, experiential, and Inquiry-Based teaching. *Educational Psychologist*, *41*(2), 75–86. https://doi.org/10.1207/s15326985ep4102_1

Kohlstedt, S. G. (2010). Teaching children science. *Bibliovault OAI Repository, the University of Chicago Press*. https://doi.org/10.7208/chicago/9780226449920.001.0001

Kong, Y. (2021). The role of experiential learning on students' motivation and classroom engagement. *Frontiers in Psychology*, *12*. https://doi.org/10.3389/fpsyg.2021.771272

Kopnina, H., Washington, H., Taylor, B., & Piccolo, J. J. (2018). Anthropocentrism: More than Just a Misunderstood Problem. *Journal of Agricultural and Environmental Ethics*, *31*(1), 109–127. https://doi.org/10.1007/s10806-018-9711-1

Krahenbuhl, K. S. (2016). Student-centered Education and Constructivism: Challenges, concerns, and clarity for teachers. *The Clearing House a Journal of Educational Strategies Issues and Ideas*, *89*(3), 97–105. https://doi.org/10.1080/00098655.2016.1191311

Kullmann, W. (1991). Aristotle as a Natural Scientist. *Acta Classica*, 34, 137–150. https://www.jstor.org/stable/24591937

Kwon, K., Lee, J., Wang, C., & Diwanji, V. S. (2023). From green advertising to greenwashing: content analysis of global corporations' green advertising on social media. *International Journal of Advertising*, *43*(1), 97–124. https://doi.org/10.1080/02650487.2023.2208489

Laasch, O., Suddaby, R., Freeman, R. E., & Jamali, D. (2020). Mapping the emerging field of responsible management: domains, spheres, themes, and future research. In *Research Handbook of Responsible Management* (pp. 2–39). Edward Elgar Publishing. https://doi.org/10.4337/9781788971966.00006

Ladson-Billings, G. (1995). Toward a theory of culturally relevant pedagogy. *American Educational Research Journal*, *32*(3), 465–491. https://doi.org/10.3102/00028312032003465

Lehman, C. R. (2019). Reflecting on now more than ever: Feminism in accounting. *Critical Perspectives on Accounting*, *65*, 102080. https://doi.org/10.1016/j.cpa.2019.04.001

LeVasseur, T. (2017). Decisive ecological warfare. *Journal for the Study of Religion Nature and Culture*, *11*(1), 109–130. https://doi.org/10.1558/jsrnc.29799

London, M., Sessa, V. I., & Shelley, L. A. (2022). Developing Self-Awareness: Learning processes for self- and interpersonal growth. *Annual Review of Organizational Psychology and Organizational Behavior*, *10*(1), 261–288. https://doi.org/10.1146/annurev-orgpsych-120920-044531

Lotz-Sisitka, H., Wals, A. E., Kronlid, D., & McGarry, D. (2015). Transformative, transgressive social learning: rethinking higher education pedagogy in times of systemic global dysfunction. *Current Opinion in Environmental Sustainability*, *16*, 73–80. https://doi.org/10.1016/j.cosust.2015.07.018

Lourenço, F. (2013). To challenge the world view or to flow with it? Teaching sustainable development in business schools. *Business Ethics a European Review*, 22(3), 292–307. https://doi.org/10.1111/beer.12021

Lozano, R., Merrill, M., Sammalisto, K., Ceulemans, K., & Lozano, F. (2017). Connecting Competences and Pedagogical Approaches for Sustainable Development in Higher Education: A Literature Review and Framework proposal. *Sustainability*, 9(10), 1889. https://doi.org/10.3390/su9101889

Lu, Y. (2019). Exploring Jean-Jacques Rousseau's Nature Education Thought from Emile. *Proceedings of the 2019 International Conference on Management, Education Technology and Economics* (ICMETE 2019). https://doi.org/10.2991/icmete-19.2019.100

Lugg, A. (2007). Developing sustainability-literate citizens through outdoor learning: possibilities for outdoor education in Higher Education. *Journal of Adventure Education & Outdoor Learning*, 7(2), 97–112. https://doi.org/10.1080/14729670701609456

Maclaran, P., Stevens, L., & Kravets, O. (2022). *The Routledge companion to marketing and feminism*.

Main, P. (2021, July 20). *Strategies for assessment for learning*. Structural Learning. Retrieved September 30, 2024, from https://www.structural-learning.com/post/strategies-for-assessment-for-learning

Manolis, C., Burns, D. J., Assudani, R., & Chinta, R. (2013). Assessing experiential learning styles: A methodological reconstruction and validation of the Kolb Learning Style Inventory. *Learning and Individual Differences*, 23, 44–52. https://doi.org/10.1016/j.lindif.2012.10.009

Marks, E., Hickman, C., Pihkala, P., Clayton, S., Lewandowski, E. R., Mayall, E. E., Wray, B., Mellor, C., & Van Susteren, L. (2021). Young people's voices on climate anxiety, government betrayal and moral injury: a global phenomenon. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3918955

McLeod, S. (2024, February 2). *Kolb's Learning Styles & Experiential Learning Cycle*. Simply Psychology. Retrieved September 30, 2024, from https://www.simplypsychology.org/learning-kolb.html

Meyers, S. A. (2009). Do Your Students Care Whether You Care About Them? *College Teaching*, 57(4), 205–210. https://doi.org/10.1080/87567550903218620

Mezirow, J. (1990). *Fostering Critical Reflection in Adulthood: A guide to Transformative and Emancipatory learning*. Jossey-Bass. http://ci.nii.ac.jp/ncid/BA10805827

Misiaszek, G. W. (n.d.). *About Ecopedagogy*. Greg William Misiaszek, Ph.D. Retrieved September 30, 2024, from https://ecopedagogy.com/aboutecopedagogy/

Moore, J. (2005). Is higher education ready for transformative learning? *Journal of Transformative Education*, 3(1), 76–91. https://doi.org/10.1177/1541344604270862

Morrell, K. (2004). Socratic Dialogue as a tool for teaching business ethics. *Journal of Business Ethics*, 53(4), 383–392. https://doi.org/10.1023/b:busi.0000043500.63029.40

Muff, K. (2013). Developing globally responsible leaders in business schools. *Journal of Management Development*, 32(5), 487–507. https://doi.org/10.1108/02621711311328273

Muff, K., Delacoste, C., & Dyllick, T. (2022). Responsible Leadership Competencies in leaders around the world: Assessing stakeholder engagement, ethics and values, systems thinking and innovation competencies in leaders around the world. *Corporate Social Responsibility and Environmental Management*, 29(1), 273–292. https://doi.org/10.1002/csr.2216

Naess, A. (2005). The Deep Ecology Movement: Some philosophical aspects. In A. Drengson & H. Glasser (Eds.), *Selected Works of Arne Naess* (pp. 33–55).

Nash, G. H. (2023, November 12). Russell Kirk and the conservative mind. The Russell Kirk Center. https://kirkcenter.org/essays/russell-kirk-and-the-conservative-mind//

National Society for Experiential Education. (n.d.). *Eight principles of good practice for all experiential learning activities*. Society for Experiential Education.

Retrieved September 27, 2024, from https://www.societyforee.org/8-principles

Navarro, V. (2007). Neoliberalism as a class ideology; or, the political causes of the growth of inequalities. *International Journal of Health Services*, 37(1), 47–62. https://doi.org/10.2190/ap65-x154-4513-r520

Ollinaho, O. I. (2022). What is 'business as usual'? Towards a theory of cumulative sociomaterial change. *Globalizations*, 20(4), 611–627. https://doi.org/10.1080/14747731.2022.2142013

Oregon State University. (n.d.). *What is TEK? | Traditional Ecological Knowledge Lab*. Retrieved September 27, 2024, from https://tek.forestry.oregonstate.edu/what-tek

Ortiz, A. (2011). Humane Liberation: Incorporating Animal Rights into Critical Pedagogy. *The Vermont Connection*, 32(1), 8. http://scholarworks.uvm.edu/cgi/viewcontent.cgi?article=1117&context=tvc

Overholser, J. C. (1994). Elements of the Socratic method: III. Universal definitions. *Psychotherapy*, 31(2), 286–293. https://doi.org/10.1037/h0090222

Painter-Morland, M., Sabet, E., Molthan-Hill, P., Goworek, H., & De Leeuw, S. (2015). Beyond the Curriculum: Integrating Sustainability into Business Schools. *Journal of Business Ethics*, 139(4), 737–754. https://doi.org/10.1007/s10551-015-2896-6

Parguel, B., Benoit-Moreau, F., & Russell, C. A. (2015). Can evoking nature in advertising mislead consumers? The power of 'executional greenwashing'. *International Journal of Advertising*, 34(1), 107–134. https://doi.org/10.1080/02650487.2014.996116

Paris, D. (2012). Culturally sustaining pedagogy. *Educational Researcher*, 41(3), 93–97. https://doi.org/10.3102/0013189x12441244

Parker, L. (2022). Outdoor learning, a pathway to transformational learning? or another educational gimmick? *International Journal for Cross-Disciplinary Subjects in Education*, 13(1), 4600–4611. https://doi.org/10.20533/ijcdse.2042.6364.2022.0565

Parker, M. (2018, April 27). Why we should bulldoze the business school. *The Guardian*. https://www.theguardian.com/news/2018/apr/27/bulldoze-the-business-school

Pendoley, R. (2019, June 6). Celebrate learning over achievement. *Age of Awareness*. https://medium.com/age-of-awareness/celebrations-of-learning-762dc4c1313d

Perez, R., Shim, W., King, P. M., & Magolda, M. B. B. (2005). A developmental model of intercultural maturity. *Journal of College Student Development*, 46(6), 571–592. https://doi.org/10.1353/csd.2005.0060

Peterson, E. (2009). Socratic Problem-Solving in the business world. In *American Journal of Business Education* (Vol. 2, Issue 5, p. 101). https://files.eric.ed.gov/fulltext/EJ1052768.pdf

Piaget, J. (1970). *Science of Education and the psychology of the child*. Orion Press.

Posey, A. (2022). A case for unlearning in higher education. *New Directions for Teaching and Learning*, 2022(172), 23–31. https://doi.org/10.1002/tl.20520

Principles for Responsible Management Education. (n.d.). *History of PRME*. Retrieved September 30, 2024, from https://www.unprme.org/history-of-prme/

Principles for Responsible Management Education. (2023). *PRME i5 Playbook*.

Reich, R. (2003). The Socratic Method: What it is and How to Use it in the Classroom. *Speaking of Teaching*. https://web.archive.org/web/20220511021023/https:/tomprof.stanford.edu/posting/810 Retrieved on November 29, 2024.

Reis, R. (2003). The Socratic Method: What Is It and How to Use It in the Classroom. *Speaking of Teaching*: Stanford University Newsletter, (Vol. 13, No.1).

Riani, A. (2023, May 30). 4 Socratic principles relevant to startup founders. *Forbes*. https://www.forbes.com/sites/abdoriani/2023/05/24/4-socratic-principles-relevant-to-startup-founders/

Rieckmann, M. (2012). Future-oriented higher education: Which key competencies should be fostered through university teaching and learning? *Futures*, 44(2), 127–135. https://doi.org/10.1016/j.futures.2011.09.005

Roberts, K. M. (2021). Integrating Feminist Theory, Pedagogy, and Praxis into Teacher Education. *SAGE Open*, *11*(3), 215824402110231. https://doi.org/10.1177/21582440211023120

Rothenberg, D. (2012). Deep Ecology. In *Encyclopedia of Applied Ethics* (pp. 738–744). https://doi.org/10.1016/b978-0-12-373932-2.00352-5

Schäfer, G., & Walgenbach, K. (2024). Is international student mobility still a distinctive strategy? A study of upper milieu students in Germany. *Journal of Further and Higher Education*, 1–14. https://doi.org/10.1080/0309877x.2024.2348755

Schapper, A., & Bliss, C. (2023). Transforming our world? Strengthening animal rights and animal welfare at the United Nations. *International Relations*, *37*(3), 514–537. https://doi.org/10.1177/00471178231193299

Schmidt-Wilk, J. (2010). Signature Pedagogy: A Framework for Thinking about Management Education. *Organizational Behavior Teaching Review*, *34*(4), 491–495. https://doi.org/10.1177/1052562910376508

Schmuck, D., Matthes, J., & Naderer, B. (2018). Misleading Consumers with Green Advertising? An Affect–Reason–Involvement Account of Greenwashing Effects in Environmental Advertising. *Journal of Advertising*, *47*(2), 127–145. https://doi.org/10.1080/00913367.2018.1452652

Sessions, G. (1987). The Deep Ecology Movement: A review. *Environmental Review*, *11*(2), 105–125. https://doi.org/10.2307/3984023

Shackelford, J. (1992). Feminist Pedagogy: a means for bringing critical thinking and creativity to the Economics classroom. *American Economic Review*, *82*(2), 570–576. http://www.jstor.org/stable/2117463

Sherkat, D. S., & Blocker, T. J. (1993). Environmental activism in the protest generation. *Youth & Society*, *25*(1), 140–161. https://doi.org/10.1177/0044118x93025001009

Shulman, L. S. (2005). Signature pedagogies in the professions. *Daedalus*, *134*(3), 52–59. https://doi.org/10.1162/0011526054622015

Shumer, R. (2013). Evaluating and Assessing Experiential Learning. In G. Hesser, J. Duley, M. King, & R. Ross, *Strengthening experiential education: A new era.* CreateSpace Independent Publishing Platform.

Sikandar, A. (2016). John Dewey and his philosophy of Education. *Journal of Education and Educational Development*, 2(2), 191. https://doi.org/10.22555/joeed.v2i2.446

Sipos, Y., Battisti, B., & Grimm, K. (2008). Achieving transformative sustainability learning: engaging head, hands and heart. *International Journal of Sustainability in Higher Education*, 9(1), 68–86. https://doi.org/10.1108/14676370810842193

Skinner, B. F. (1938). *The behavior of organisms*.

Smith, C., & Babich, C. (2022). *Theories of individual and collective learning*. eCampus Ontario. https://ecampusontario.pressbooks.pub/ticl/

Smith, L. T. (1999). *Decolonizing methodologies: Research and Indigenous Peoples*.

Stake, J. E., & Hoffmann, F. L. (2000). Putting Feminist Pedagogy to the Test: The Experience of Women's Studies from Student and Teacher Perspectives. *Psychology of Women Quarterly*, 24(1), 30–38. https://doi.org/10.1111/j.1471-6402.2000.tb01019.x

Sterling, S. (2003). *Whole Systems Thinking as a Basis for Paradigm Change in Education: explorations in the context of sustainability*. University of Bath.

Sterling, S. (2011). Transformative Learning and Sustainability: Sketching the conceptual ground. *Learning and Teaching in Higher Education*, 5. https://www.researchgate.net/publication/266184629_Transformative_Learning_and_Sustainability_Sketching_the_Conceptual_Ground

Sterling, S. (2013). The Future Fit Framework: An Introductory Guide to Teaching and Learning for Sustainability in HE (Guide). *Journal of Education for Sustainable Development*, 7(1), 134–135. https://doi.org/10.1177/0973408213495614b

Stern, B. B. (1992). Feminist Literary Theory and Advertising Research: A new "Reading" of the text and the consumer. *Journal of Current Issues & Research in Advertising*, 14(1), 9–21. https://doi.org/10.1080/10641734.1992.10504976

Stibbe, A. (2019). Education for Sustainability and the Search for New Stories to Live by. In *Routledge eBooks* (pp. 232–245). https://doi.org/10.4324/9780429021800-17

Stierncreutz, M., & Tienari, J. (2023). Anticipating resistance: Teaching gender and management to business school students. *Gender Work and Organization*, *31*(1), 227–244. https://doi.org/10.1111/gwao.13066

Tarnas, R. (1991). *The passion of the Western mind: understanding the ideas that have shaped our world view*. Ballantine Books.

Taylor, B., Chapron, G., Kopnina, H., Orlikowska, E., Gray, J., & Piccolo, J. J. (2020). The need for ecocentrism in biodiversity conservation. *Conservation Biology*, 34(5), 1089–1096. https://doi.org/10.1111/cobi.13541

The Socratic Method: What it is and How to Use it in the Classroom | Tomorrow's Professor Postings. (n.d.). https://web.archive.org/web/20220511021023/https://tomprof.stanford.edu/posting/810

Thompson, S. C. G., & Barton, M. A. (1994). Ecocentric and anthropocentric attitudes toward the environment. *Journal of Environmental Psychology*, 14(2), 149–157. https://doi.org/10.1016/s0272-4944(05)80168-9

Trepanier, L. (2017). The Socratic Method Today: Student-Centered and Transformative Teaching in Political Science. In *The Socratic Method Today*. Routledge. https://doi.org/10.4324/9781351245821

TVHEM. (n.d.). *The Voluntary Human Extinction Movement*. The Voluntary Human Extinction Movement. Retrieved December 3, 2024, from https://www.vhemt.org/

UN Global Compact. (n.d.). *Our mission*. Retrieved September 30, 2024, from https://unglobalcompact.org/what-is-gc/mission

UNCPembroke. (2021, October 27). *Why diversity and inclusion are good for business*. Retrieved September 20, 2024, from https://online.uncp.edu/articles/mba/diversity-and-inclusion-good-for-business.aspx

UNESCO. (2015). Global citizenship education: topics and learning objectives. In *UNESCO*. https://doi.org/10.54675/drhc3544

UNESCO. (2017). Education for Sustainable Development Goals: learning objectives. In *UNESCO eBooks*. https://doi.org/10.54675/cgba9153

United Nations. (n.d.). *Goal 4: Targets and indicators*. United Nations Department of Economic and Social Affairs. Retrieved September 27, 2024, from https://sdgs.un.org/goals/goal4#targets_and_indicators

University of Plymouth. (n.d.). *What is Education for Sustainable Development*? Retrieved September 27, 2024, from https://www.plymouth.ac.uk/students-and-family/sustainability/sustainability-education/esd

University of Wisconsin-Stevens Point. (2023). *Outdoor Education – Research Summary*. https://www.uwsp.edu/wp-content/uploads/2023/11/leaf-school-grounds-research.pdf

Vallier, K. (2021, June 9). *Neoliberalism*. Stanford Encyclopedia of Philosophy. Retrieved December 3, 2024, from https://plato.stanford.edu/entries/neoliberalism/

Vanderbilt Center for Teaching. (2015, March). A *Guide to Feminist Pedagogy*. Retrieved September 27, 2024, from https://my.vanderbilt.edu/femped/

Von Glasersfeld, E. (1995). *Radical constructivism: A Way of Knowing and Learning*. Routledge.

Vygotsky, L. S. (1978). Mind in Society: Development of Higher Psychological Processes on JSTOR. In *www.jstor.org*. Harvard University Press. https://www.jstor.org/stable/j.ctvjf9vz4

Wals, A. E. J., & Benavot, A. (2017). Education for people, prosperity and planet: Can we meet the sustainability challenges? *European Journal of Education*, 52(4), 399–403. https://doi.org/10.1111/ejed.12248

Wang, T., Ramdeo, J., & McLaughlin, C. (2021). Experiencing and experimenting: An exploration of teacher agency in an international collaborative teacher professional development programme using experiential learning. *Teaching and Teacher Education*, 104, 103389. https://doi.org/10.1016/j.tate.2021.103389

Weakland, J. P., & Corcoran, P. B. (2009). The Earth Charter in Higher Education for Sustainability. *Journal of Education for Sustainable Development*, 3(2), 151–158. https://doi.org/10.1177/097340820900300210

Welch, P. (2007). Feminist pedagogy revisited. *LATISS Learning and Teaching in the Social Sciences*, 3(3), 171–199. https://doi.org/10.1386/ltss.3.3.171_1

Wiek, A., Withycombe, L., & Redman, C. L. (2011). Key competencies in sustainability: a reference framework for academic program development. *Sustainability Science*, 6(2), 203–218. https://doi.org/10.1007/s11625-011-0132-6

Williams, M. K. (2017). John Dewey in the 21st century. *Journal of Inquiry and Action in Education*, 9(1), 91–102. https://files.eric.ed.gov/fulltext/EJ1158258.pdf

Wilson, D., 2023. Impactful Education for Responsible Management - Research foundations of the i5 Project. PRME.

Wolff, L. (2013). Nature and sustainability: an educational study with Rousseau and Foucault. *Environmental Education Research*, 20(3), 430–431. https://doi.org/10.1080/13504622.2013.833587

Zelechoski, A. D., Romaine, C. L. R., & Wolbransky, M. (2017). Teaching Psychology and Law: An Empirical Evaluation of Experiential Learning. *Teaching of Psychology*, 44(3), 222–231. https://doi.org/10.1177/0098628317711316