The Care for PM Framework for Project Management Education

Traditional project management education, with its technical focus, is inadequately preparing professionals for the era of regenerative development. This paper introduces the Capabilities Approach to Regenerative Education for Project Management (CARE for PM), a new theoretical framework designed to bridge this gap. The Capabilities Approach (CA), developed to assess human well-being beyond purely economic metrics, offers a powerful lens for re-envisioning educational outcomes by focusing on expanding individuals' freedoms to achieve valued ways of being and doing. Through a synthesis of educational philosophy, a critical analysis of existing knowledge assessment models and green certifications, and an examination of cultural dimensions, we construct the CARE for PM framework. Our findings suggest a capabilities-oriented curriculum cultivates not only technical proficiency but also the critical competencies of systems thinking, ethical reasoning, and collaborative leadership—all essential for regenerative practice. We conclude with actionable recommendations for curriculum design, institutional implementation, and assessment, outlining a research agenda to advance a more transformative and just approach to management education.

Introduction

The escalating crises of climate change, resource depletion, and social inequality demand a profound shift in how we conceive of and execute projects. In response, the field of project management has begun evolving from a traditional take-make-waste paradigm, through the perspective of harm reduction—often labeled "green" or "sustainable" project management—and toward regenerative development, which seeks to actively restore and enhance the vitality of social and ecological systems (Mang & Reed, 2020). While this evolution of the practice is promising, project management education has not kept pace. A significant gap persists between the complex, systemic challenges of regeneration and the conventional, technically focused curricula that dominate business and engineering schools.

Current educational models often remain anchored in a paradigm of knowledge transmission, prioritizing standardized tools and methodologies over the development of critical capabilities. This approach produces graduates skilled in managing predictable processes but ill-equipped to navigate the ambiguity, complexity, and ethical dilemmas inherent in regenerative work. Even when sustainability is integrated, it is typically treated as an add-on, confined within a "weak sustainability" model that fails to challenge the core assumptions of the field (Silvius & Schipper, 2014). One of the authors has suggested that current sustainable project management mirrors that of agile project management of the past two decades, where the concept has become a "buzz word" in the executive suite but not translated or given agency in the arena of project execution.

This distinction between sustainability and regeneration is not merely semantic; it represents a paradigmatic shift that has profound implications for management education theory. While sustainability-oriented education has successfully integrated concepts of harm reduction and eco-efficiency into curricula, it often remains tethered to a mechanistic worldview where nature is a resource to be managed, and problems are to be solved. This approach often falls into a "weak sustainability" model that fails to challenge the core assumptions of the field (Silvius & Schipper, 2014). This prepares managers to optimize known systems but fails to equip them for the fundamental uncertainty and complexity inherent in regenerative work, the practice of co-evolving with and actively restoring the vitality of living systems (Mang & Reed, 2020).

Therefore, applying the Capabilities Approach to regenerative project management offers a unique theoretical contribution by revealing the limitations of existing competency-based educational models. Regenerative practice, by its very nature, is emergent and unpredictable; it demands practitioners who can act wisely in novel situations, not just apply learned formulas. This context forces us to re-evaluate the purpose of management education itself. It suggests that for navigating the complex, interconnected challenges of our time, the goal is not merely to build competencies (the demonstrated ability to perform a defined task), but to cultivate capabilities—an individual's real freedoms to achieve valued ways of being and doing (Sen, 1999). This paper thus uses the context of regenerative project management to argue that the CA is more than a framework for assessing well-being; it is a necessary pedagogical theory for advanced management education in an era of complexity, shifting the theoretical focal point from knowledge transmission to the cultivation of human agency and practical wisdom.

This paper builds on prior applications of the CA in sustainability education (Walker & Unterhalter, 2022) but offers a novel extension into the specific domain of regenerative project management. We constructed the CARE for PM framework by first reviewing the limitations of current educational models. We then explore the philosophical foundations of the CA, synthesizing the perspectives of Sen and Nussbaum. To ground our framework, we critically analyze traditional knowledge assessment models and contemporary green project management certifications, revealing a clear need for a more holistic, capabilities-based approach. Recognizing the global nature of project management, we also examine the cultural dimensions that shape how capabilities are valued and developed. Ultimately, we present the CARE for PM framework, detailing its core capabilities, pedagogical principles, and a multi-level implementation strategy. The paper concludes by discussing practical case studies, challenges, and future research directions, offering a clear path forward for educational institutions committed to preparing the next generation of transformative project leaders.

The paper is structured as follows: Section 2 examines the need for transformation in higher education and project management programs specifically. Section 3 provides an overview of the Capabilities Approach, including its historical context and key principles, followed by Section 4 which contrasts the perspectives of its leading theorists. Section 5 examines traditional knowledge assessment frameworks and their limitations. Section 6 presents CARE, a framework for

regenerative project management education based on the Capabilities Approach. Section 7 presents the framework through mini-case studies. Section 8 concludes with implementation challenges, opportunities for future research, and implications for educational practice and policy.

The Need for Transformation in Higher Education

The call for a regenerative paradigm in project management stems from the clear limitations of conventional educational models in preparing graduates for contemporary realities. These models are often misaligned with the interconnected, systemic nature of the challenges practitioners now face.

Shortcomings of Conventional Project Management Education.

Traditional higher education, especially within business and engineering programs, suffers several structural shortcomings that hinder the development of regenerative practitioners. A foundational issue is the prevalence of fragmented knowledge, where disciplinary silos produce experts who can analyze parts but struggle to synthesize a whole-systems view (Sterling, 2001).

Project management education has historically depended on a mechanistic and linear approach, a fact based on technical rationality and standardized process models (Turner, 2007). Methodologies like PRINCE2 and PMBOK are commonly taught as universal frameworks for project execution, highlighting fixed sequences of planning, control, and delivery. This directive structure assumes a level of predictability that is frequently absent in real world contexts, specifically in projects dealing with social or ecological complexity. As Thomas and Mengel (2008) argue, this kind of education may prepare students for leading certainty, but it leaves them unprepared to deal with uncertainty, emergent changes, or adaptive decision making.

In addition, PM curricula sometime promote what Cicmil et al. (2006) describe as a "command and control mindset", where success is approached by technical outputs rather than contextual relevance or stakeholder impact. This framing promotes students to view environmental and social factors as external risks rather than integral elements of project systems. The result is a generation of project managers trained to optimize processes but weakening the systemic and critical thinking needed for regenerative leadership. Without meaningful engagement with culture, ethics, or systems complexity, traditional PM education proceeds to reproduce narrow, system-oriented professionals instead of cultivating transformative change agents. This fragmentation is a critical liability when addressing complex challenges like climate change.

This narrow focus naturally leads to an overemphasis on technical-rational skills at the expense of developing crucial capabilities in systems thinking, ethical reasoning, and collaborative leadership (Waddock & Lozano, 2013), leaving graduates unprepared for adaptive and value-laden work. As a result, students may be well-equipped to manage linear processes but are unprepared for the complexity and unpredictability of adaptive systems.

The disciplinary fragmentation is compounded by a contextual isolation that treats project management as a ubiquitous, one-size-fits-all methodology. Conventional curricula often present a monolithic set of tools and processes, failing to differentiate their application across diverse industrial sectors, organizational cultures, or project types. This approach overlooks the critical scholarship distinguishing between "hard" projects, which have clear objectives and low uncertainty, and "soft" projects, which are characterized by complexity and emergent goals (Crawford & Pollack, 2004). As a result, graduates are often unprepared to adapt their methods to the specific, nuanced realities of a given project, a critical failing for those who must lead complex regenerative initiatives that are deeply embedded in unique social and ecological contexts.

A short-term orientation further undermines educational effectiveness. Traditional business education typically prioritizes short-term performance metrics over long-term system health (Giacalone & Thompson, 2006), reinforcing unsustainable business practices and limiting students' capability to envision regenerative alternatives. There can also be a gap between abstract theory and practice. Many educational programs maintain artificial separations between theoretical knowledge and practical application (Kolb & Kolb, 2005), limiting students' capability to translate understanding into effective action.

Finally, the assumed neutrality of conventional business education masks an implicit value bias. Despite claims of objectivity, conventional business education often implicitly reinforces values that prioritize profit maximization over social and ecological well-being. As Ghoshal (2005) points out, this approach weakens students' capacity for critical ethical reasoning and engagement.

If sustainability is addressed, it is often through the lens of a "weak sustainability" paradigm focused on eco-efficiency rather than fundamental system redesign (Silvius & Schipper, 2014). This approach fails to foster the capabilities needed for genuinely regenerative practice. This surface-level treatment is mirrored in many professional credentials, where a focus on certification without transformation prioritizes declarative knowledge over the developed capabilities required to implement principles effectively in dynamic situations (Silvius et al., 2017).

From Sustainability to Regeneration: The Case for a New Educational Approach

The limitations of current models highlight the need for a fundamental shift. While sustainability aims to meet present needs without compromising the future, regeneration seeks to actively enhance the health and vitality of the social and ecological systems we are part of (Mang & Reed, 2012). This is not merely a semantic difference; it represents a paradigm shift from a mindset of harm reduction to one of potential maximization.

This shift requires educational approaches that develop capabilities for positive system intervention, not just harm reduction. Complex challenges require expanded capabilities. Addressing climate change, biodiversity loss, social inequality, and other complex challenges requires capabilities that transcend traditional disciplinary boundaries and conventional problem-solving approaches (Wiek et al., 2011).

At the heart of regenerative practice lies the need for **transformative learning**. Creating regenerative systems requires professionals capable of transformative thinking and practice—those who can question underlying assumptions, envision alternative futures, and catalyze system-level change (Mezirow, 2000; Sterling, 2010). Transformative learning should include a process that challenges underlying assumptions and enables individuals to envision and enact systemic change (Mezirow, 2000). Education must move beyond transmitting what is known and instead focus on cultivating the capabilities required to navigate uncertainty and co-create regenerative futures.

The Capabilities Approach offers a promising framework for addressing these limitations and developing educational models that prepare project managers for regenerative practice. By focusing on expanding individuals' real freedoms to achieve valued ways of being and doing, this approach transcends the knowledge acquisition model of traditional education to encompass the multidimensional capabilities required for transformative action.

Overview of the Capabilities Approach

The Capabilities Approach (CA) is a normative framework for evaluating well-being, social arrangements, and quality of life. Originating as a critique of narrow economic metrics like GDP, it offers a more holistic understanding of human flourishing.

Developed by economist-philosopher Amartya Sen and further elaborated by philosopher Martha Nussbaum, the CA shifted the focus of development from material resources (like income) to capabilities: the real freedoms and opportunities people have to lead lives they have reason to value. Its intellectual roots share ground with the progressive-era social reforms of settlement houses, such as Jane Addams' Hull House, which focused on holistic capacity-building within marginalized communities long before the formalization of the CA (Stivers, 2000).

The approach's core principles are grounded in a focus on freedom and agency, prioritizing a person's ability to choose and act as an agent of their own development. Central to this is the distinction between capabilities, which represent the set of real opportunities available, and functionings, the actual achievements or states of being. An educational goal, therefore, is to expand capabilities, not just dictate functionings. The CA also foregrounds human diversity by acknowledging that different people require different resources to achieve similar capabilities due to varying "conversion factors." Finally, it respects a plurality of values, resisting a single, universal measure of "the good life" by recognizing that different individuals and cultures value different functionings. In essence, the CA provides a powerful language for reframing the purpose of education from what a student should possess to what a student is actually able to do and to be.

Figure 1 illustrates the key components of the Capabilities Approach and their interrelationships. At the center is human well-being, understood as the freedom to achieve valued ways of being and doing. This is influenced by resources (material, social, and environmental), which are converted into capabilities (real opportunities

and freedoms) through various conversion factors (personal, social, and environmental). The exercise of agency (freedom to choose and act) leads to the achievement of functioningss (actual states of being and doing), all within the context of social structures (institutions, policies, and cultural norms).

Figure 1. *Core Components of the Capabilities Approach (adapted from Robeyns, 2005)*

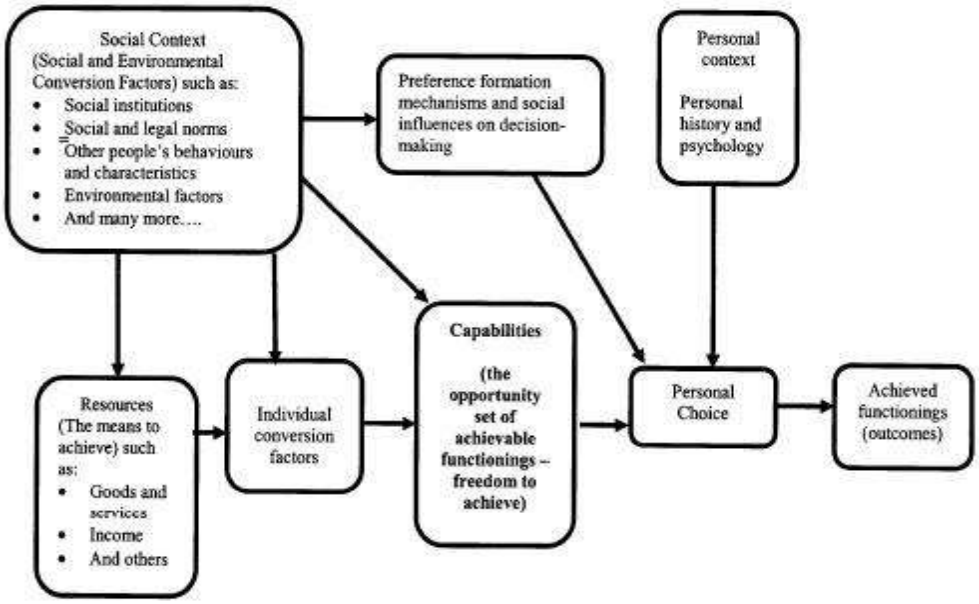


Figure 1 Visual representation of a person's capabilities and social and personal context (Robeyns, 2005:98)

Comparing Perspective: Sen and Nussbaum

While Sen and Nussbaum are the chief architects of the CA, their approaches have different emphases with direct implications for educational design. Sen advocates for a flexible, open-ended approach, while Nussbaum proposes a specific list of "Central Human Capabilities" as a basis for social justice.

Table 1. *Comparative Analysis of Sen's and Nussbaum's Perspectives on the Capability Approach*

Aspect	Amartya Sen	Martha Nussbaum	Implications for the CARE for PM Framework
Foundation	Economic development and freedom	Aristotelian ethics and social justice	Integrates practical application (Sen) with a strong ethical foundation (Nussbaum).
List of Capabilities	Deliberately unspecified; determined by public reasoning and democratic deliberation.	Specified list of 10 Central Human Capabilities essential for a life of dignity.	Balances flexibility for contextual adaptation (Sen) with a non-negotiable ethical core (Nussbaum).
Role of Institutions	Emphasizes fostering public participation and agency.	Advocates for constitutional guarantees and institutional responsibility to ensure thresholds.	Emphasizes both student agency and the institution's duty to provide opportunities to develop core capabilities.
Application Focus	Development economics, public policy, and comparative evaluation.	Constitutional law, gender justice, and human development.	Draws on Sen for systemic policy analysis and Nussbaum for the ethical and social dimensions of projects.

This comparison (Table 1) reveals that while Sen and Nussbaum share fundamental principles regarding human dignity and freedom, their approaches differ in ways that have significant implications for educational design. Sen's deliberate refusal to specify a fixed list of capabilities allows for context-specific adaptation but provides less concrete guidance for curriculum development. Nussbaum's specified list of central capabilities offers clearer direction for educational objectives but may be less adaptable to diverse cultural contexts.

For the purposes of regenerative project management education, a synthesis of both views is most powerful. Sen’s emphasis on democratic deliberation and context-specificity is crucial for project managers who must navigate diverse stakeholder values. Nussbaum’s specification of core capabilities provides a non-negotiable ethical foundation, ensuring that graduates possess the fundamental capacities for just and regenerative practice. The CARE for PM framework explicitly builds on this synthesis.

Rethinking Knowledge Assessment Frameworks

A primary obstacle to transformative education is an over-reliance on traditional knowledge assessment frameworks. Models like Bloom's Taxonomy, while useful for structuring cognitive learning objectives, are insufficient for evaluating the multidimensional capabilities required for regenerative practice. These frameworks tend to prioritize individual, decontextualized cognitive skills, falling short in assessing the collaborative, ethical, and adaptive competencies needed to navigate complex systems.

Table 2 compares these traditional models with a capabilities-based approach, highlighting their differing applications to regenerative project management education.

Table 2. *Comparison of Knowledge Assessment Frameworks and the Capabilities Approach*

Framework	Core Focus	Application in Regenerative PM	Limitations for Regenerative Practice
Bloom's Taxonomy	Hierarchical cognitive skills (Remembering to Creating).	Structures learning objectives for technical knowledge (e.g., *analyzing* a life cycle assessment).	Primarily individual and cognitive; weak on assessing ethical reasoning, collaboration, or contextual adaptation. Assumes linear progression.
SOLO Taxonomy	Levels of understanding, from pre-structural to extended abstract.	Assesses depth of understanding complex concepts like systems thinking.	Similar to Bloom's, it remains focused on cognitive outcomes and struggles to capture practical agency or real-world application.
Competency-Based Models	Observable skills, knowledge, and attitudes required for a specific task.	Defines required competencies for "sustainable project manager" roles (e.g., stakeholder communication).	Often becomes a checklist of atomized skills; can miss the integrative, holistic nature of capability and the freedom to achieve valued outcomes.
Capabilities Approach (CARE for PM)	Expanding real freedoms and opportunities to achieve valued	Assesses if students have the genuine freedom and ability to lead a regenerative project, integrating	Focuses on the whole person and their agency. It assesses not just what a student *can*

Framework	Core Focus	Application in Regenerative PM	Limitations for Regenerative Practice
	ways of being and doing.	technical, ethical, and collaborative dimensions in a real-world context.	*do* in a test, but what they are *free to achieve* in practice. It is inherently integrative and context sensitive.

While traditional frameworks like Bloom's Taxonomy provide valuable tools for structuring specific learning objectives, they often emphasize cognitive development at the expense of other dimensions critical for regenerative practice—namely, experiential application, integrative thinking, collaboration, and contextual responsiveness.

These models prioritize knowledge acquisition and its application within controlled or predictable environments. However, regenerative project management requires the capacity to operate within complex, dynamic systems where uncertainty is the norm. Bloom's linear hierarchy of learning, from remembering to creating, assumes a step-by-step progression, whereas the Capabilities Approach acknowledges that effective action often depends on the simultaneous integration of multiple types of capabilities. Furthermore, traditional assessments typically focus on individual performance and disregard the importance of collaborative competencies needed to address systemic challenges. They also favor standardized contexts, which do not reflect the diverse social, ecological, and cultural realities practitioners actually face. In contrast, regenerative practice calls for adaptability and sensitivity to local conditions, requiring educational approaches that foster not only what students know, but also how they act together, and in context.

The Capabilities Approach transcends these traditional frameworks by:

1. *Recognizing Plurality:* Acknowledging multiple dimensions of capability beyond cognitive development, including social, emotional, ethical, and practical dimensions.
2. *Emphasizing Agency:* Focusing not just on what learners know or can do, but on their freedom to apply their knowledge and skills in ways they value.
3. *Acknowledging Context:* Recognizing that capability development occurs within particular social, cultural, and environmental contexts that shape opportunities and constraints.
4. *Valuing Process and Outcome:* Considering both the process of education (how it expands freedom and agency) and its outcomes (what capabilities it enables).
5. *Integrating Theory and Practice:* Bridging theoretical understanding with practical application in real-world contexts.

Regenerative project management education requires professionals to navigate complex social and ecological systems, engage with diverse stakeholders, and make

decisions that consider multiple values and time horizons. A capabilities-based approach to assessment would evaluate not just what students know about regenerative principles, but their actual freedom to apply these principles effectively in diverse contexts—shifting focus from knowledge possession to transformative action.

The CARE for PM framework transcends traditional models by recognizing a plurality of outcomes beyond the purely cognitive, emphasizing the student's agency and freedom to act, and valuing the specific context in which capabilities are expressed. This shift is paramount. Regenerative practice is not about applying a known formula; it's about having the developed capability to act wisely in novel, complex, and uncertain situations.

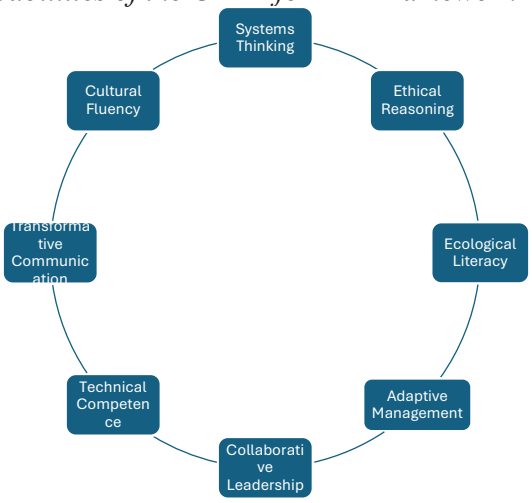
The CARE for PM Framework

Building on the preceding analysis, we now introduce the Capabilities Approach to Regenerative Education for Project Management (CARE for PM). This framework is designed to guide curriculum design, pedagogy, and assessment to cultivate the core capabilities essential for regenerative practice.

Derivation of the Core Capabilities

The eight core capabilities of the CARE for PM framework were not selected arbitrarily. They were derived from a purposeful synthesis of three distinct but complementary domains: 1) the foundational requirements of regenerative development practice; 2) the philosophical tenets of Martha Nussbaum's (2011) list of Central Human Capabilities, which provide an essential ethical foundation for a life of dignity; and 3) the key competencies identified within Education for Sustainability (EfS) scholarship (Wiek et al., 2011). Each capability is grounded in this synthesis, ensuring it is relevant to practice, ethically robust, and educationally sound.

Figure 2. *The Eight Core Capabilities of the CARE for PM Framework*



The intellectual foundation of the framework begins with Systems Thinking, the ability to see wholes and understand interconnections, which is central to regenerative practice. This capability reflects the EfS competency of systems literacy (Wiek et al., 2011) and aligns with Nussbaum's (2011) capability of Senses, Imagination, and Thought, which supports critical and holistic thinking. Complementing this is Ethical Reasoning, essential for navigating the moral dilemmas inherent in regenerative projects. This directly mirrors Nussbaum's (2011) concept of Practical Reason and the emphasis on ethical decision-making within EfS. To enact change, practitioners must develop relational capabilities. Collaborative Leadership facilitates the co-creative processes vital to regenerative development and is an expression of Nussbaum's (2011) Affiliation, which involves engaging in social interaction. Similarly, Cultural Fluency enables practitioners to respect diverse knowledge systems (Nussbaum, 2011). These are enabled by Transformative Communication, which is required to inspire collective action and shift mindsets.

Finally, the framework is grounded in practical capabilities. Ecological Literacy provides a non-negotiable understanding of living systems, embodying Nussbaum's (2011) capability of relating to Other Species. Adaptive Management provides the capacity to navigate uncertainty (Wiek et al., 2011), while Technical Competence ensures mastery of relevant tools. Together, these practical skills allow for the application of Control Over One's Environment, another key capability identified by Nussbaum (2011).

A Tiered Model of Capability Development

To move beyond a simple typology, we theorize the CARE for PM capabilities as a dynamic, tiered model of development. This model proposes that the capabilities are not co-equal but are organized into interdependent tiers that suggest a developmental logic and create feedback loops for transformative learning (Mezirow, 2000).

Tier 1: Foundational Capabilities (The Regenerative Mindset): These two capabilities represent the essential worldview that underpins all regenerative practice. They shape how a practitioner perceives and interprets the world.

- *Systems Thinking*: The ability to understand complex systems, identify leverage points, and anticipate system behavior over time.
- *Ethical Reasoning:* The capability to navigate complex ethical dilemmas, considering multiple values, stakeholders, and time horizons.

Tier 2: Enabling Capabilities (Relational and Sense-Making): These capabilities translate the foundational mindset into effective interaction and co-creation with others.

- *Collaborative Leadership:* The ability to facilitate collaborative processes that engage diverse stakeholders and integrate multiple perspectives.
- *Transformative Communication:* The capability to communicate in ways that shift perspectives, inspire action, and catalyze change.

- *Cultural Fluency:* The ability to work effectively across diverse cultural contexts and integrate indigenous and local knowledge.

Tier 3: Applied Capabilities (Enacting Regenerative Practice): These capabilities represent the enactment of the mindset and relational skills within the specific context of a project.

- *Adaptive Management:* The capability to navigate uncertainty, learn from feedback, and adjust approaches in response to emerging conditions.
- *Ecological Literacy:* The understanding of ecological principles that can inform regenerative design.
- *Technical Competence:* The mastery of relevant technical tools and methodologies for project planning, implementation, and evaluation.

Propositions and Feedback Loops

This tiered structure allows for the creation of testable propositions:

- *Proposition 1:* The development of Applied Capabilities (Tier 3) without a strong foundation in Tier 1 capabilities will result in technically proficient but non-regenerative project outcomes.
- *Proposition 2:* The effectiveness of Enabling Capabilities (Tier 2) is moderated by the depth of a practitioner's Foundational Capabilities (Tier 1).

Feedback Loop: Experiences and outcomes from the Applied Capabilities (Tier 3) circle back to deepen and challenge the Foundational Capabilities (Tier 1). For example, a failure in *Adaptive Management* forces a practitioner to re-examine their core *Systems Thinking* assumptions, creating an opportunity for the kind of transformative learning that challenges underlying assumptions (Mezirow, 2000).

The moderating role of foundational capabilities is central to this framework's causal logic. The enabling capabilities of Tier 2—*Collaborative Leadership*, *Transformative Communication*, and *Cultural Fluency*—are powerful social processes, but without the grounding of Tier 1, they lack direction and ethical coherence. For instance, *Collaborative Leadership* devoid of *Ethical Reasoning* risks devolving into charismatic manipulation, where stakeholder consensus is engineered to serve a predetermined, and potentially non-regenerative, agenda. Similarly, without a robust capacity for *Systems Thinking*, a leader may facilitate collaboration that optimizes one part of a system at the expense of the whole, inadvertently creating negative downstream consequences. Therefore, the foundational capabilities do not merely add to the enabling ones; they structure the field of action, ensuring that relational skills are deployed in service of systemic health and moral purpose, rather than narrow project goals.

The feedback loop from applied practice to foundational mindset is the primary engine of transformative learning within the CARE framework. When a practitioner's actions in Tier 3 produce unexpected or negative results—for instance, when a project managed with *Adaptive Management* still fails to improve ecosystem

health—it can act as a "disorienting dilemma" (Mezirow, 2000). This practical failure creates a cognitive and emotional dissonance that challenges the practitioner's underlying assumptions about how the world works. It forces a critical reflection not just on their actions, but on their core mental models, their *Systems Thinking*—and their moral framing—their *Ethical Reasoning*. This process, as described by Mezirow (2000), is what enables a "perspective transformation," leading to a more complex and integrated worldview. It is through these cycles of action, failure, reflection, and reframing that a manager's capabilities are not just honed but genuinely transformed.

Reorienting Core Project Management Concepts through a Capabilities Lens

The CARE for PM framework is not intended to discard the established tools and knowledge areas of project management, but to fundamentally reorient their purpose and application. By centering the eight core capabilities, we shift the focus from the management of constraints to the expansion of potential. This has direct implications for several core tenets of project management theory.

From Stakeholder Management to Collaborative Leadership: Traditional stakeholder management often involves analyzing and managing stakeholders to achieve project objectives. The capability of *Collaborative Leadership* reframes this process entirely. Instead of managing stakeholders *for* the project, the project becomes a vehicle for co-creating value *with* a web of partners, moving beyond command-and-control leadership to embrace co-creation. The boundary between the project team and external stakeholders dissolves, transforming a transactional process into a relational process of engagement.

From Risk Management to Systems Thinking and Adaptive Management: Conventional risk management focuses on identifying and mitigating threats to a project's scope, schedule, and budget, an approach best suited for "hard" projects with clear objectives and low uncertainty (Crawford & Pollack, 2004). The capabilities of *Systems Thinking* and *Adaptive Management* shift the focus to building overall systemic resilience to deal with the complexity and emergent goals of "soft" projects (Crawford & Pollack, 2004). The primary question changes from "What might go wrong?" to "How can we design a process that can learn, adapt, and even thrive in response to emergent and unpredictable conditions?".

*From Scope Definition to Ethical Reasoning***:** In traditional project management, scope is defined early and carefully controlled. The capabilities of *Ethical Reasoning* and *Ecological Literacy* challenge this rigidity. They demand a continuous inquiry into the project's purpose and impact, asking not just "Are we delivering the scope?" but "Is this the *right* scope in the first place?". A regenerative project manager must have the capability—and the freedom—to advocate for redefining a project's fundamental goals based on a deeper ethical or ecological understanding, recognizing the interests of non-human species and future generations.

Pedagogical Approaches

Developing these capabilities requires moving beyond the traditional lecture hall. The CARE for PM framework is enacted through pedagogies that are inherently experiential and place-based, integrate structured reflective practice to deepen learning, foster interdisciplinary collaboration to tackle problems holistically, and demand authentic community engagement that ensures relevance and reciprocity. Key approaches include:

1. *Experiential Learning:* Engaging students in real-world projects that require application of knowledge and skills in complex contexts. This approach develops capabilities through direct experience with regenerative challenges and opportunities.
2. *Place-Based Education:* Grounding learning in specific places, engaging with local communities and ecosystems. This approach develops capabilities for contextual understanding and adaptation to specific social and ecological conditions.
3. *Reflective Practice:* Developing the habit of critical reflection on experience, examining assumptions and continually refining approaches. This approach cultivates the meta-cognitive capabilities essential for ongoing learning and adaptation.
4. *Interdisciplinary Integration:* Breaking down disciplinary silos to address complex sustainability challenges holistically. This approach develops capabilities for integrative thinking across traditional boundaries.
5. *Community Engagement:* Collaborating with communities as partners in the educational process, ensuring relevance and reciprocity. This approach develops capabilities for stakeholder engagement and cultural fluency.
6. *Mentorship and Apprenticeship:* Learning from experienced practitioners through guided participation in authentic practice. This approach facilitates the transfer of tacit knowledge and development of practical wisdom.

Multi-Level Implementation Strategies

Implementing a capabilities-based approach to regenerative project management education requires institutional strategies that align curriculum, pedagogy, assessment, and organizational culture. Table 3 outlines key elements of this implementation framework:

Table 3. *Multi-Level Implementation Strategies for the CARE for PM Framework*

Level	Implementation Strategy	Key Challenge
Course Design	Integrate technical content with regenerative principles through project-based learning and reflective assignments.	Balancing content coverage with deep capability development.
Program Structure	Design sequential pathways for capability development, culminating in a real-world capstone project with community partners.	Ensuring coherence and integration across different courses.
Faculty Development	Provide training and communities of practice for faculty on capabilities-based teaching and assessment.	Overcoming inertia of traditional pedagogical training.
Institutional Policy	Create flexible credit structures, and update promotion criteria to recognize and reward innovative teaching and community partnerships.	Rigid administrative structures and policies.
Institutional Culture	Foster a campus-wide culture that values regenerative principles, using the "campus as a living laboratory."	Entrenched conventional practices and values.

Elaborating the CARE Framework through Practice

The theoretical framework and its constituent capabilities, while logically derived, risk remaining an abstraction without being grounded in practice. This section moves beyond simple illustration to use two distinct case studies—a university master's program and a professional certification—as a means of elaborating and refining the CARE for PM theory. Rather than presenting these cases as idealized "best practices," we analyze them to explore the dynamic interplay, tensions, and synergies between the core capabilities in real-world educational settings. This analysis allows us to add nuance to our model and demonstrate how the capabilities are cultivated and expressed in different institutional contexts.

Case Study 1: The University for International Cooperation (UCI) - The Symbiosis of Ecological Literacy and Cultural Fluency

The Master's Program in Regenerative Leadership at the University for International Cooperation (UCI) in Costa Rica exemplifies a comprehensive capabilities-based approach to regenerative education. Founded in 1994, UCI has pioneered sustainability education in Latin America, evolving its approach from environmental management to regenerative leadership as understanding of sustainability challenges has deepened.

Program Structure and Philosophy

Bioregional Context Integration: UCI intentionally leverages Costa Rica's globally recognized leadership in conservation and sustainability as a living laboratory for students. The program grounds regenerative principles in the country's pioneering work in ecosystem restoration, biodiversity protection, and renewable energy transition.

Integrated Learning Modules: Rather than traditional courses organized by discipline, the program structures learning around integrated modules addressing complex regenerative challenges specific to tropical ecosystems and developing economies. Modules combine ecological design, social innovation, and project management methodologies.

Place-Based Projects: Throughout the program, students engage with specific communities and ecosystems throughout Costa Rica and Central America, developing regenerative projects in collaboration with local stakeholders. These projects address real challenges from watershed restoration to community resilience building. Moreover, it also cultivates core capabilities like collaborative leadership, cultural fluency, systems thinking, and ecological literacy, as outlined in Figure 2.

Capability Portfolio: Instead of traditional grades, students develop a portfolio demonstrating their capabilities across the eight core dimensions identified in this paper. Students demonstrate growth in transformative communication, adaptive management, and ethical reasoning. The portfolio includes project documentation, stakeholder feedback, reflective analyses, and evidence of systems transformation.

Cross-Cultural Mentorship Network: Students work with a network of mentors from diverse backgrounds, including indigenous knowledge holders, practitioners, community leaders, and academics from throughout Latin America and globally. This approach deliberately integrates traditional ecological knowledge with contemporary scientific understanding.

Reflective Practice Through "Presencing": Regular structured reflection is integrated throughout the program using Theory U and presencing methodologies, supporting students in articulating their learning and identifying areas for growth while connecting personal transformation with systems change.

Assessment and Outcomes

UCI conducts rigorous assessment of capability development through multiple methods:

Pre/Post Capability Assessment: Students complete capability self-assessments at program entry and exit, demonstrating significant average growth across all capability dimensions, with particularly strong development in systems thinking (37% average improvement) and cultural fluency (42% average improvement).

Project Impact Evaluation: Graduate projects undergo comprehensive impact evaluation through stakeholder interviews, ecological assessments, and long-term monitoring. Projects initiated during the program have contributed to the restoration of over 5,000 hectares of degraded land and strengthened climate resilience in dozens of vulnerable communities.

Alumni Tracking: UCI maintains relationships with over 85% of program graduates, tracking their professional trajectories and impact. Alumni report that the capabilities developed through the program have enabled them to effectively lead regenerative initiatives in diverse professional contexts throughout Latin America and globally.

Stakeholder Feedback: Community partners consistently rate UCI student projects highly for cultural sensitivity (4.7/5.0) and adaptive management (4.5/5.0), indicating strong development of these critical capabilities.

This case elaborates our theory by challenging the notion that Ecological Literacy and Cultural Fluency are entirely separate capabilities. The UCI model demonstrates they are symbiotic. Students learn ecological principles not just from textbooks, but through engagement with indigenous knowledge holders and community leaders from throughout Latin America. The reported high ratings in cultural sensitivity (4.7/5.0) and strong growth in cultural fluency (42% average improvement) are not incidental to the program's ecological focus; they are a direct result of it. The UCI case thus refines our framework by suggesting that in regenerative practice; to truly understand an ecosystem (*Ecological Literacy*), one must understand the culture that co-evolved with it (*Cultural Fluency*), and vice versa.

The UCI program demonstrates how capabilities-based education can be deeply rooted in place while preparing practitioners for global challenges. By integrating Costa Rica's ecological and cultural context with system thinking and project management methodologies, the program develops practitioners capable of leading regenerative change in diverse contexts. Furthermore, UCI's curriculum and assessment model provide direct evidence of how regenerative education can support all eight CARES for PM capabilities in an integrated, place-based format.

The Master's Program at UCI provides a powerful example of how place-based education forges an inextricable link between *Ecological Literacy* and *Cultural Fluency*. The program intentionally grounds its curriculum in Costa Rica's bioregional context, leveraging its ecosystems and conservation history as a living laboratory. Students engage in projects from watershed restoration to community resilience, working directly with local and indigenous stakeholders.

Case Study 2: GPM's Sustainable Project Management Certification

GPM's (Green Project Management) Professional Certification in Sustainable Project Management illustrates how capabilities-based approaches can be integrated into professional certification frameworks. While initially framed around sustainability, GPM's certification has increasingly embraced regenerative principles, emphasizing positive system impacts rather than merely reducing harm.

Certification Structure and Evolution

Progressive Capability Development: The certification process spans multiple levels (Foundation, Practitioner, and Expert), with progressive development of capabilities from foundational understanding to advanced application of regenerative

principles. This staged approach allows practitioners to develop capabilities incrementally while immediately applying them in professional contexts.

P5 Integration Framework: Central to GPM's approach is the P5 Standard for Sustainability in Project Management, which has evolved from a traditional triple-bottom-line approach to integrate regenerative perspectives. The framework now emphasizes positive handprints (beneficial impacts) alongside footprint reduction, aligning with regenerative principles.

Action Learning Projects: Candidates implement regenerative projects in their professional contexts, receiving ongoing coaching and feedback. Projects must demonstrate measurable contributions to ecological restoration, social well-being, and economic resilience, moving beyond sustainability compliance to regenerative outcomes. This outcomes-based structure helps create ethical reasoning, ecological literacy, systems thinking, and technical competence depending on the project focus.

Digital Collaboration Communities: Participants engage in structured online learning communities spanning diverse global contexts, developing collaborative capabilities while sharing insights across sectors and regions. These communities function as communities of practice that continue beyond certification completion. In addition, it fosters cultural fluency, collaborative leadership, and transformative communication by motivating peer exchange across geographic and sectoral boundaries.

Multi-Modal Assessment: Capabilities are assessed through multiple methods, including project implementation documentation, stakeholder impact assessments, reflective writing, peer evaluation, and practical demonstrations. Assessment emphasizes evidence of capability application rather than knowledge recall.

Tool Integration with Capability Development: GPM intentionally integrates practical tools (such as the Sustainability Management Plan and Benefits Realization Framework) with capability development, ensuring practitioners develop both technical skills and adaptive capabilities simultaneously.

Impacts and Outcomes

GPM's certification program has demonstrated measurable impacts on practitioner capabilities and project outcomes:

Practitioner Capability Growth: Longitudinal studies of certified practitioners show significant growth in adaptive management capabilities (31% improvement) and systems thinking capabilities (27% improvement) within one year of certification, based on standardized assessments and workplace evaluations.

Organizational Transformation: Organizations with GPM-certified project managers report improved project sustainability outcomes, with particular gains in stakeholder engagement quality (average improvement of 42%) and long-term benefit realization (average improvement of 35%).

Project Impact Assessment: Projects led by GPM-certified managers demonstrate measurably greater regenerative outcomes compared to conventionally managed projects, including higher rates of ecosystem service enhancement (29% improvement) and stakeholder capability development (24% improvement).

Cross-Sector Application: The certification framework has demonstrated effectiveness across diverse sectors (construction, IT, healthcare, government) and cultural contexts, indicating the transferability of core regenerative capabilities while allowing for contextual adaptation.

GPM's certification demonstrates how professional development frameworks can evolve beyond sustainability compliance toward regenerative capability development. By integrating practical tools with transformative learning experiences, the certification prepares practitioners to implement regenerative approaches within conventional organizational contexts—an essential bridge between current practices and regenerative futures. GPM effectively supports practitioners in developing CARE for PM capabilities across both technical and human centered dimensions.

The GPM certification case elaborates our theory by revealing the productive tension between *Technical Competence* and *Adaptive Management* in a professional practice setting. Unlike a purely academic environment, the GPM model forces practitioners to simultaneously inhabit two seemingly contradictory modes: the standardized world of tools, methods, and formal standards like the P5 Standard, and the messy, emergent reality of their own regenerative projects. This structure prevents a simple "tools vs. mindset" dichotomy. The case demonstrates that true capability is developed not by abandoning technical competence, but by holding it in dynamic tension with adaptive management. The P5 standard provides a necessary scaffold (*Technical Competence*), but the requirement to implement it in a live project context demands constant learning and adjustment (*Adaptive Management*). GPM's multi-level certification process suggests that practitioners co-evolve these capabilities, learning to apply standardized tools with wisdom and adapt to uncertainty with rigor, thereby integrating both into a more sophisticated practice.

Best Practices for Capabilities-Based Education

Analysis of these and other cases reveals several best practices for capabilities-based approaches to regenerative project management education:

Integration of Theory and Practice: Successful programs integrate theoretical understanding with practical application, enabling students to develop capabilities through authentic engagement with real challenges. Both UCI and GPM demonstrate this integration through project-based learning approaches.

Multiple Modes of Learning: Programs that combine individual study, collaborative work, field experience, and reflective practice support development of diverse capabilities. UCI's bioregional immersion and GPM's digital collaboration communities illustrate different approaches to creating diverse learning environments.

Developmental Assessment: Assessment approaches track development over time, providing specific feedback on capability growth rather than merely grading final products. Both programs use portfolio-based assessment methods that document capability development of journeys.

Community Connection: Engagement with diverse communities and stakeholders throughout the educational process, grounding capability development in real

relationships and contexts. UCI's place-based projects and GPM's workplace implementation requirements demonstrate this principle.

Cross-Cultural Fluency: Intentional development of capabilities for working across cultural differences and integrating diverse knowledge systems. UCI's integration of indigenous knowledge and GPM's global practitioner network exemplify different approaches to developing cultural fluency.

*Institutional Alignment***:** Alignment of organizational structures, policies, and culture with capabilities-based approaches, creating coherent educational experiences. UCI's organizational philosophy and GPM's certification framework demonstrate internal coherence that supports capability development.

These best practices suggest that capabilities-based approaches require not just revised curricula but transformed educational cultures that value process as well as outcome, collaboration as well as individual achievement, and contextual wisdom as well as generalizable knowledge. Both UCI and GPM demonstrate how different institutional forms—a university program and a professional certification—can embody these principles while adapting them to their specific contexts and constraints.

In addition, these case studies illustrate how different educational models, university based (UCI) and professional (GPM), can effectively activate the eight core capabilities in the CARE for PM framework, directing learners for regenerative practice in diverse real-world contexts.

Challenges and Future Research

While the Capabilities Approach offers significant potential for transforming regenerative project management education, its successful adoption faces several formidable implementation challenges. Foremost among these is institutional resistance, as traditional educational institutions often oppose fundamental changes to educational models, particularly those that challenge disciplinary boundaries and entrenched assessment methods. This structural inertia is compounded by the inherent complexity of assessing capabilities, which requires multiple methods and authentic contexts that are challenging to develop in a valid and reliable way. Furthermore, such a pedagogical shift demands significant investment in both faculty development, to build capacity among educators trained in traditional approaches, and the resource-intensive engagement required for field experiences and project-based learning. Underlying these practical hurdles is a core philosophical tension: the challenge of balancing the standardization necessary for credentialing against the contextualization required for capabilities to be authentically developed and expressed in diverse settings.

Future Research Directions

Addressing these challenges requires further research and development in several key areas:

1. *Assessment Methodologies:* Research is needed to develop and validate assessment approaches that effectively capture capability development in authentic contexts while maintaining practicality for educational institutions.
2. *Capability Development Trajectories*: Longitudinal research examining how regenerative capabilities develop over time would inform more effective educational sequences and developmental milestones.
3. *Cross-Cultural Applications:* Further research on how capabilities are understood and expressed across diverse cultural contexts would enhance the cultural sensitivity of educational approaches.
4. *Institutional Transformation:* Case studies of institutional change processes provide valuable guidance for educational institutions seeking to implement capabilities-based approaches.
5. *Technology Integration:* Research on how emerging technologies (simulations, virtual reality, artificial intelligence) might support capability development could expand educational possibilities.
6. *Post-Graduation Impact:* Longitudinal studies tracking how capabilities developed through education translate into professional practice would provide important feedback for program refinement.

Toward a Regenerative Educational Paradigm

Ultimately, the Capabilities Approach invites us to reimagine not just specific educational programs but the broader paradigm of education itself. Rather than viewing education primarily as knowledge transmission, this approach reframes education as an expansive process that enhances human freedoms and possibilities for action.

For regenerative project management education, this paradigm shift holds particular significance. By developing capabilities that enable professionals to catalyze positive system change, education becomes not merely a means of individual advancement but a powerful lever for societal transformation toward regenerative futures.

Future research and practice in this field should continue to explore how educational institutions can themselves become regenerative systems, enhancing the capabilities of all participants while contributing to the health and vitality of the broader social and ecological systems in which they are embedded.

Conclusion

This paper has explored how the Capabilities Approach can inform a transformative framework for regenerative project management education. By shifting focus from knowledge acquisition to capability development, this approach addresses fundamental limitations in traditional educational models while aligning with the complex demands of regenerative practice.

The analysis has revealed significant gaps in current educational approaches, particularly in how project management professionals are prepared to address

complex sustainability challenges. Traditional knowledge-based frameworks and certification models, while valuable for establishing foundational understanding, often fail to develop the multidimensional capabilities required for regenerative practice.

The framework proposed in this paper identifies eight core capabilities for regenerative project management: systems thinking, ethical reasoning, collaborative leadership, adaptive management, ecological literacy, cultural fluency, transformative communication, and technical competence. These capabilities represent real freedoms to achieve valued functioningss in the context of regenerative work—freedoms that can enable practitioners to catalyze positive change in social and ecological systems.

Implementing this framework requires pedagogical approaches that engage students in authentic learning experiences, including experiential learning, place-based education, reflective practice, interdisciplinary integration, community engagement, and mentorship. These approaches must be supported by aligned institutional structures, assessment methods, and organizational cultures.

The implications of this research extend beyond regenerative project management education to challenge broader paradigms of professional education. As global challenges intensify, educational institutions must move beyond preparing students to succeed within existing systems to developing capabilities that enable them to transform those systems toward greater health, justice, and sustainability.

Future research should explore effective assessment methodologies, capability development trajectories, cross-cultural applications, institutional transformation processes, technology integration, and post-graduation impact. By continuing to develop and refine capabilities-based approaches, educational institutions can play a vital role in cultivating the regenerative practitioners needed to address our most pressing global challenges.

In the words of economist and Capabilities Approach founder Amartya Sen, "Development consists of the removal of various types of unfreedoms that leave people with little choice and little opportunity of exercising their reasoned agency." By developing capabilities for regenerative practice, education can expand the freedoms available to both present and future generations, creating new possibilities for human and ecological flourishing in a world of increasingly complex challenges.

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