Title The Pedagogy-First Compass Ecosystem: A Framework for Ethical and Adaptive Innovation in Teaching, Learning, and Educator Development

A pedagogy-first model integrating ethics, course design, and faculty learning to guide responsible innovation in teaching and professional development.

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Abstract

The **Pedagogy-First Compass Ecosystem** provides a practical framework for designing, implementing, and evaluating innovation in teaching, learning, and faculty development. It is grounded in instructional design theory and ethical practice, placing pedagogy ahead of technology to promote sustainable and equitable change.

The Ecosystem includes three parts:

1. The **Course Compass**, a seven-phase process for strategic alignment, design, delivery, and evaluation.
2. The **Compass for Learning** (3 levels), guides educator development from awareness to integration and mentorship.
3. The **Ethics Framework**, a cross-cutting lens promotes transparency, accessibility, fairness, and human oversight in each design stage.

4. The **GenAI Use & Ethics Framework (5 Levels)** - a classroom-level model that applies these ethical and pedagogical principles to daily instruction, reflection, and assessment.

*Originally introduced as the *AI Course Compass* (Green, 2025), this framework now extends beyond generative AI to include professional-development design, data-informed teaching, and inclusive course redesign across K-12 and higher education contexts. This preprint outlines conceptual foundations, ethical anchors, and research directions for applying the Ecosystem across educational contexts.

Full Description (Project Overview)

The **Pedagogy-First Compass Ecosystem**, developed by *Marcus Green (Kennesaw State University)*, expands the author's published *AI Course Compass* (OLC Insights, 2025) into a broader pedagogy-driven framework for innovation in higher education.

It connects course design, faculty professional learning, and ethical reflection through three interrelated elements:

- **Course Compass (7 Phases):** A structured process aligning outcomes, ethics, and design across strategy, delivery, and evaluation.
- **Compass for Learning (3 Levels):** A faculty-readiness model guiding growth from awareness to innovation and mentorship.
- **Ethics Framework:** A cross-cutting lens promoting transparency, accessibility, fairness, and human oversight in every design stage.

This version refines and extends the seven phases published in the *AI Course Compass*, and three new features: **Guardrails** (Phase 2), **Accessibility & Quality Assurance** (Phase 4), and **Delivery & Coaching** (Phase 5), which move ethical reflection and quality review earlier in the process. The Ecosystem provides a flexible structure for instructional designers, teaching centers, and academic leaders to plan innovation grounded in pedagogy and equity. This preprint establishes authorship continuity and theoretical legitimacy while setting the foundation for future empirical studies and doctoral research.

Sub frameworks and Applied Models

The **Pedagogy-First Compass Ecosystem** also integrates the **GenAI Use & Ethics Framework**, which serves as the classroom-level application of the Ecosystem's ethical and pedagogical foundations.

Developed originally as a companion to the *AI Course Compass* (Green, 2025), the **GenAI Use & Ethics Framework** provides a five-level progression for integrating generative AI responsibly in teaching and learning.

Each level represents a deliberate step in ethical classroom innovation, moving from foundational skill demonstration to co-creative inquiry.

1. **Independent Demonstration**
2. **AI-Enhanced Research & Planning**
3. **AI-Assisted Refinement**

4. **Collaborative AI**
5. **AI as Creative Partner**

Where the **Course Compass** defines institutional and design-level processes, and the **Compass for Learning** supports educator readiness and professional growth, the **GenAI Use & Ethics Framework** translates those same principles into daily instructional practice.

It applies the five ethical dimensions of the **Ethics Framework—transparency, accountability, equity, privacy, and human oversight**—within real teaching contexts through prompt logs, reflection journals, ethics memos, and accessibility safeguards.

This ensures that every classroom activity, whether human- or AI-assisted, remains pedagogy-first, ethically transparent, and inclusive by design.

Functioning as the **applied practice model** of the Ecosystem, the **GenAI Use & Ethics Framework** bridges design-level intent with classroom execution.

It provides instructors with a scaffold for embedding ethical reflection directly into learning activities, while offering institutions a replicable structure for aligning technology adoption with academic integrity and human-centered learning outcomes.

Across modalities K-12, higher education, and hybrid environments, the Framework applies the Ecosystem's guiding principle: **Pedagogy before technology, ethics across all contexts.**

Applied Use Case: Faculty Professional Development and Course Design

A district learning team or university's Center for Teaching and Learning (CTL) can apply the **Pedagogy-First Compass Ecosystem** to strengthen professional development and course design. Using the **Course Compass**, facilitators move through all seven phases— from *Strategic Alignment* (Phase 0) to *Evaluation & Innovation* (Phase 6). Faculty progress through the **Compass for Learning** levels:

- **Level 1 – Awareness:** exploring inclusive pedagogy, AI literacy, and data-informed practices.
- **Level 2 – Application:** co-designing course activities using pedagogy-first templates.
- **Level 3 – Integration:** mentoring colleagues and leading institutional showcases.

The **Ethics Framework** supports each phase, promoting openness in tool use, accessibility in materials, and fairness in assessment. The result is a professional learning cycle that connects ethics, design quality, and faculty growth.

Research Agenda

Future studies will apply design-based and mixed-methods approaches to explore how the Ecosystem supports:

- Faculty progression through the Compass for Learning levels.
- The impact of embedded ethics checkpoints on course quality and equity.
- Long-term institutional change toward pedagogy-first innovation.

Acknowledgment

This framework extends the author's prior publication:

Green, M. (2025). *AI Course Compass: A Seven-Phase Framework for Ethical, Equitable, and Adaptive Course Design. Online Learning Consortium Insights*.

Author's AI Assistance Disclosure

Portions of this manuscript, including editorial structuring, formatting, and clarity refinement, were developed with the assistance of OpenAI's ChatGPT (GPT-5) under the direction and authorship of Marcus Green.

All conceptual models, frameworks, and original ideas—including the *Pedagogy-First Compass Ecosystem, Course Compass, Compass for Learning*, and *Ethics Framework*— are the sole intellectual property of the author.

Validation and Authorship Statement

The **Pedagogy-First Compass Ecosystem** builds directly on the *AI Course Compass* (Green, 2025) and verifies conceptual continuity while expanding its scope to faculty development, data-informed teaching, and inclusive course redesign. It introduces early ethical guardrails, explicit accessibility, and quality measures, and ongoing coaches.

This preprint establishes **intellectual ownership, scholarly credibility, and framework validity** for future peer-reviewed research.

License

Keywords

pedagogy-first design · instructional design frameworks · faculty development · professional learning · ethical technology integration · course design · learning analytics · inclusive teaching · higher education innovation

Related Works

- Green, M. (2025). *AI Course Compass: A Seven-Phase Framework for Ethical, Equitable, and Adaptive Course Design. Online Learning Consortium Insights*.

- Green, M. (2025, forthcoming). *GenAI Use & Ethics Framework. Online Learning Consortium Insights*.

- Green, M., & Miller, I. (2025, November 17-20). AI Course Compass: Designing with AI, Ethically and Equitably. [Conference presentation]. OLC Accelerate 2025, Orlando, FL.

Footer Statement

This preprint forms part of an ongoing research agenda exploring pedagogy-first innovation and ethical technology adoption in higher education. Future publications will report empirical validation of the Ecosystem in faculty-development and course-design contexts.