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Information Science

Distributed Agency in AI-Enhanced Cybersecurity Education A Posthuman Instructional Design Framework

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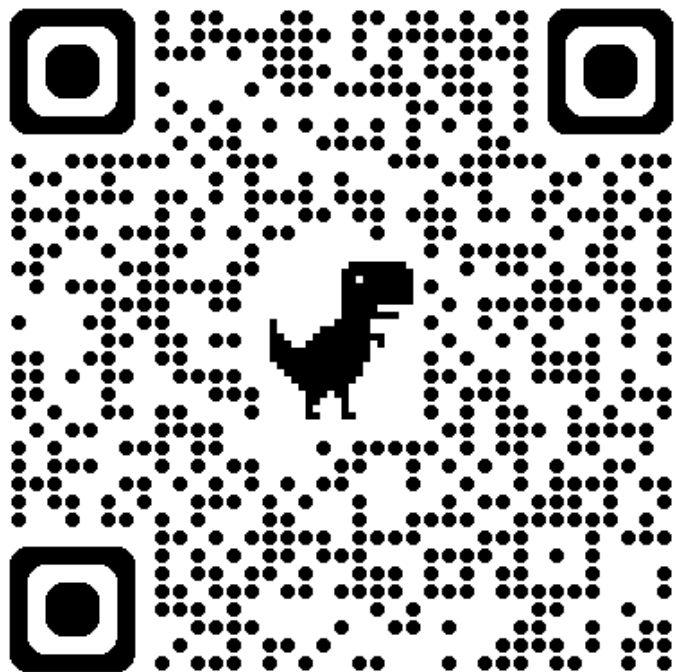
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Follow along!

ryanstraight.com/research/cisse-20

What Does “Posthuman” Mean Here?

NOT “replacing humans” or “post-humans”

INSTEAD: Recognizing that effective action emerges from networks

→ Human + AI + tools working **together**

Key shift: From “humans **using** tools” → humans **and** tools as partners

✗ Eliminating human teachers | ✗ Replacing traditional education | ✗ “AI knows best”

✓ **Additive** to existing pedagogical approaches



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THE PROBLEM



AI-Enhanced
Practice

≠

Human-Centered
Education

Why Not Traditional Frameworks?

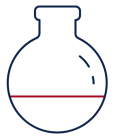
Traditional instructional design assumes:



Individual learners with static content



Instructor as primary agent



Individual reflection and experimentation



Human-only teams using AI as **tools**



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THE FRAMEWORK

1. Design for the **Assemblage**
2. Cultivate **Relationality**
3. Embrace **Emergence**
4. Assess **Distributed Performance**

P1: Design for the Assemblage

NOT

Individual Competencies

INSTEAD

Network Capabilities

Technology as embodied integration, not as tool

P2: Cultivate Relationality

NOT

Individual Responsibility

INSTEAD

Ethical Orientation

Response-ability: Quality of relationships between all actants

P3: Embrace Emergence

NOT

Predetermined Being

INSTEAD

Messy Becoming

Indeterminacy as pedagogical feature: Learning emerges from complex assemblages

P4: Assess Distributed Performance

NOT

Individual Performance

INSTEAD

Assemblage Evaluation

Assemblage performance: Evaluate distributed human-AI capabilities



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IMPLEMENTATION



Practical Implementation

1. **Reframe scenarios:** Make AI systems visible participants
2. **Design for collaboration:** Assignments requiring human-AI coordination
3. **Assess the assemblage:** Evaluate team performance
4. **Embrace productive messiness:** Use ambiguity as a *feature*

Implementation Evidence

“It’s easy to pick a side, but doing this gave us a better way to approach ethical case studies”

Thank You

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Questions & Discussion



