

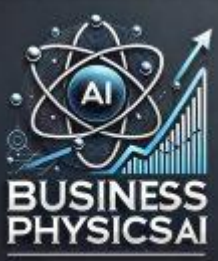
REACT Framework & Human-AI Complementarity Skills: Beyond Vibing, Capturing Human-AI Complementarity Value

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REACT 7 Questions reflection journal is intended to be used to explicitly document human–AI complementarity and ways of working strengthening computer science students' adaptive expertise, increase value capture, knowledge sharing, and collaboration compared with freeform reflection

7 Questions Beyond Vibing: Human-AI Reflection Journal

Sect.	Focus (7Q)	What to capture (keep it brief)	How to show it (example of “doing it well”)	Human ↔ AI roles to note	Key skills
A	Purpose & Justification — should this use AI	Goal, success criteria, smallest non-AI baseline, risks to watch: correctness, privacy, security, cost, policy, social impact.	“Used AI only for options. I keep final choices. Baseline solution is X. Risks: privacy + hallucination. Mitigation: no PII, verify facts, refusal rule when unsure.”	Human: define intent, guardrails, go/no-go. AI: propose options, surface trade-offs.	1, 5, 8
B	Inputs & Assumptions — what goes in	Sources of truth, data/code inputs, licenses, preprocessing, redactions, access, prompts/config, constraints.	“Source register completed; prompts versioned; sensitive fields redacted; access via least privilege; assumptions listed.”	Human: curate, approve, redact. AI: transform, summarize, generate variants.	2, 3, 8
C	Output Evaluation — don’t accept, inspect	Tests: ☐ unit ☐ integration ☐ property ☐ fuzz ☐ regression ☐ perf ☐ security ☐ fairness ☐ usability ☐ reproducibility. Ground truth, review method. What you kept/changed/removed. Metrics.	“Added adversarial tests; blocked answers without citations; measured p95 latency; removed unsourced claims; before/after diff attached.”	Human: design acceptance tests, approve release. AI: propose cases, fuzz inputs, flag anomalies.	4, 8, 9
D	Decision-Making — criteria and trade-offs	Architecture choice, SLOs, cost, observability. Trade-offs: correctness, performance, cost, simplicity, maintainability, safety, portability, dev time. Handoffs/overrides.	“Chose design X for maintainability; capped cost at Y; override rule: human review if confidence < threshold.”	Human: set constraints, sign ADRs. AI: list options, estimate impacts, suggest refactors.	5, 8, 9
E	Ownership — authorship and accountability	What you authored (code, docs, tests), what you sign off on, rollback plan, AI-use disclosure and audit trail.	“I own acceptance tests and runbook. AI-use log includes prompt versions and dataset list. Rollback steps rehearsed.”	Human: final editor, accountable owner. AI: drafting/linting assist.	5, 8
F	Human Value-Add — beyond automation	Prioritization, explanation, interface clarity, edge cases, stakeholder communication, accessibility.	“Lead with action, explain why it matters, cite source, offer next step; added keyboard-only path and plain-language copy.”	Human: sensemaking, narrative, audience fit. AI: draft phrasing, examples.	6, 7
G	Bias, Risk & Learning — fix and improve	One risk surfaced, correction applied, complementarity adjustment for next time, 3 concrete next steps.	“Region bias found; added counter-examples and fairness tests; next: request multiple viewpoints, verify 2 facts with non-AI sources, log ‘I don’t know’ cases.”	Human: identify harm, set guardrails, decide ship/rollback. AI: surface anomalies, generate audit summaries.	8, 9, 10

Skills legend: 1 Ethical judgment • 2 Curate data • 3 Prompt & polish • 4 Critical assessment • 5 Human agency • 6 Sensemaking • 7 Communication • 8 Governance • 9 Iteration • 10 Lifelong learning

Introduction to REACT Framework

The REACT Framework guides responsible collaboration between humans and AI by emphasizing clear purpose, verification, accountability, ethical boundaries, and balanced tradeoffs. Understanding these five themes ensures AI is used effectively and ethically in business decisions.

Reason to Use AI	Evidence & Verification	Accountability	Constraints	Tradeoffs
Define the specific purpose and expected benefits before involving AI in any task. Ensures AI is applied only when it adds clear value, avoiding unnecessary reliance. Promotes thoughtful decision-making about when AI is appropriate.	Plan in advance how AI outputs will be checked and validated. Establish criteria for accepting AI-generated information to maintain accuracy. Reduces risks of errors or misinformation impacting decisions.	Clarify who owns the decisions, work outputs, and consequences involving AI. Ensures responsible human oversight and ownership throughout the process. Supports transparency and trust in human-AI collaboration.	Identify ethical, integrity, privacy, and compliance boundaries for AI use. Guides adherence to legal and organizational standards. Prevents misuse or harm by setting clear operational limits for AI.	Balance speed, quality, and human judgment when integrating AI with work. Weigh benefits of automation against potential impacts on decision quality. Supports informed choices about how much AI to involve in each task.

Ten Human–AI Complementarity Skills Overview

These skills cover ethical decision-making, data curation, content refinement, quality inspection, automation management, emotional intelligence, storytelling, focus maintenance, governance, and continuous learning—forming a comprehensive foundation for AI-enabled business roles.

Ethics & Data Management

1. We Can, But Should We? — Ethics, legality & reputational check pre-launch to avoid risks.
2. Curate the Data — Collect, clean, de-bias & document data ensuring accuracy and compliance.
3. Prompt & Polish — Draft AI outputs and refine for accuracy, tone, and brand voice.
4. Don't Accept — Inspect — Audit and stress-test AI results to prevent costly errors.

Automation & Communication

5. Bot Handles Basics — Automate routine tasks with human oversight and final approval.
6. Feel the Data — Read sentiment cues and choose empathetic responses to improve engagement.
7. Data to Story — Translate data into clear, actionable narratives for decision-makers.

Focus, Governance & Learning

8. Cut the Noise — Manage alert overload to maintain focus and reduce distractions.
9. Govern & Correct — Detect AI errors, patch issues, and ensure compliance with regulations.
10. Learn on the Fly — Continuously upskill rapidly to stay current with evolving AI tools.

Skill 1 to 4: Ethics, Data & Inspection

The first four skills emphasize critical ethical judgment, data curation, prompt refinement, and rigorous inspection of AI outputs. These foundational skills ensure AI tools are used responsibly, data is trustworthy, and results are accurate, supporting business roles that bridge AI and human decision-making.

1. We Can, But Should We?

Acts as an ethical, legal, and reputational checkpoint before launching AI initiatives.

Helps decide if sharing or deploying AI-generated content is appropriate, shielding companies from harm.

Ensures compliance with privacy laws and public trust by evaluating risks pre-launch.



Skill 1
We Can, But Should We?

2. Curate the Data

Involves collecting, cleaning, de-biasing, and documenting data sources for AI use.

Ensures that AI models are trained on accurate and bias-checked data, crucial for compliance with Canadian privacy laws.

Teaches graduates to supervise data quality and consent validation.



3. Prompt & Polish

Drafts AI prompts and refines AI-generated outputs for accuracy, tone, and brand consistency.

Saves time by using AI to create first drafts, while humans add context and nuance.

Supports clear, brand-safe communication in fast-paced business environments.



**PROMPT
& POLISH**

4. Don't Accept – Inspect

Requires auditing and stress-testing AI outputs to catch errors, bias, or misleading results.

Prevents costly mistakes by verifying AI-generated data before relying on it for business decisions.

Empowers professionals to question assumptions and validate AI outputs rigorously.



Skill 5 to 7: Automation & Communication

Skill 5: Bot Handles Basics, You Call the Shots

Automate routine and repetitive tasks such as bill reminders and data entry while maintaining human oversight and final approval.

Uses tools like Power Automate and UiPath bots to build automation workflows with ROI tracking.

Allows business professionals to off-load basic chores but remain accountable for decisions, enabling productivity without risk.

Essential for managing ongoing automation/RPA processes where humans set thresholds and approve exceptions.

Keeps the human in control while delegating routine workflows to AI-powered bots.



Skill 6: Feel the Data

Read sentiment and mood from dashboards or communication channels to detect emotional cues.

Helps raise customer satisfaction by spotting early signs of frustration or churn signals.

Empowers professionals to choose empathetic responses and the appropriate communication channel.

AI flags sentiment spikes and language cues, but human empathy and judgment drive engagement.

Critical for roles requiring emotional intelligence combined with AI-driven data insights.



Skill 7: Data to Story

Transforms raw data and dashboards into clear, actionable narratives for decision-makers.

Combines numbers and visuals into persuasive stories that win executive support.

Leverages AI to auto-chart, summarize KPIs, and supply visuals and talking points.

Human skills focus on weaving insights into a coherent message tailored to the audience.

Vital for business professionals who translate analytics into impactful communication for stakeholders.



Skill 8 to 10: Focus, Governance & Learning

Skill 8: Cut the Noise, Keep the Signal

Controls notification overload to maintain focus at work and prevent burnout.

Filters alerts, ranks notifications, and recommends mute or digest settings to optimize cognitive load.

Helps employees avoid constant interruptions, increasing productivity and quality of work.

Maintains focus under alert overload, a common challenge in AI-powered workflows.

Encourages setting boundaries for attention in fast-paced digital environments.



Skill 9: Govern & Correct

Detects and patches AI errors quickly to limit damage and maintain compliance.

Leads root-cause analysis and decides on policy changes to prevent recurrence.

Briefs auditors and regulators ensuring adherence to privacy laws like Law 25 and federal AI regulations.

Balances human oversight with AI-generated insights to uphold ethical and legal standards.

Documents fixes and updates governance frameworks to continuously improve AI system reliability.



Skill 10: Learn on the Fly

Enables rapid acquisition of new skills as AI tools and business needs evolve.

Supports continuous micro-credentialing and peer mentorship to keep workforce adaptable.

Helps employees stay valuable despite rapid changes in AI technologies and workflows.

Encourages setting personal learning goals and applying new knowledge immediately.

Reduces retraining costs for employers by fostering a culture of ongoing learning and agility.



Research Methodology

This study employs a comprehensive mixed-methods approach combining scenario simulations, policy lexical analysis, and skill mapping to rigorously evaluate AI use policies and human–AI interaction patterns. These methods collectively validate the REACT framework’s ability to support ethical agency and professional complementarity in higher education AI integration.

Simulations of Human–AI Task Resilience

Activities

- Conducted 200 simulations split evenly between AI-resilient tasks (e.g., Nourishing, Healing, Building, Teaching, Protecting) and non-resilient tasks to measure human versus AI role distribution.
- Analyzed task complexity and categorized roles to quantify human agency percentages in each scenario.
- Identified consistent patterns showing higher human involvement in resilient tasks, supporting the framework’s premise.
- Used simulations to model real-world job functions and AI collaboration dynamics relevant to workforce readiness.

Deliverables

- Dataset of 200 task simulations
- Quantitative analysis of human–AI role splits
- Validation of AI resilience categories

Policy Lexical Analysis of University Guidelines

Activities

- Collected AI use policies from University of Calgary, University of Waterloo, York University and other Colleges and CEGEPs for textual analysis.
- Applied lexical field indicators to classify policy language into compliance, reflection, and professional complementarity categories.
- Assessed how language aligns with cognitive engagement levels and policy maturity.
- Identified gaps and opportunities for policy evolution beyond compliance toward professional identity formation.

Deliverables

- Classification tables of policy lexical fields
- Comparative analysis report
- Recommendations for policy improvement

Skill Mapping and Integration with Global Research

Activities

- Mapped the REACT framework’s 7 reflection questions to 10 Human–AI Complementarity Skills and Bloom’s Taxonomy.
- Integrated findings with workforce skill gap research from the World Economic Forum, Stanford HAI, and MIT Sloan studies.
- Used bibliometric and qualitative data to align academic scaffolding with evolving professional expectations.
- Developed a comprehensive skill framework supporting ethical AI use, autonomy, and continuous learning.

Deliverables

- Skill mapping tables linking reflection questions to skills
- Integration report with global workforce research
- Framework for curriculum development and assessment alignment

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This slide lists the key institutional policies, workforce reports, standards, and foundational research cited throughout the presentation, formatted in APA 7th edition style for academic rigor and credibility.