Reuben Dlamini, PhD
Associate Professor and Head: Science & Technology
rxrTLC: Human-Centred AI in Education
Wits School of Education

SHARED VISION

Inclusive, equitable, and future-ready education for all learners

EDUCATORS

Pedagogical expertise, classroom insight, and learner advocacy

- Understand learners' needs and contexts
- Design meaningful, inclusive learning experiences
- Facilitate inquiry, creativity and critical thinking
- Assess learning and provide feedback
- Champion equity, inclusion and well-being

POLICYMAKERS

Strategic leadership, resources, and enabling systems

- Establish ethical, safe and inclusive policies
- Align curriculum, standards and assessment
- Invest in infrastructure and sustainable solutions
- Support educator professional learning and AI literacy
- Ensure equity, accessibility and accountability



GUIDING PRINCIPLES

- **Human-centred** — People and relationships at the core
- **Equity & Inclusion** — Access and opportunity for all
- **Ethics & Trust** — Privacy, safety, and fairness
- **Collaboration** — Shared ownership and co-creation
- **Sustainability** — Long-term impact and stewardship

ITERATIVE CO-DESIGN CYCLE

1. EXPLORE & EMPATHIZE
2. DEFINE CHALLENGES
3. IDEATE TOGETHER
4. PROTOTYPE & EXPERIMENT
5. EVALUATE & REFINE

AI SYSTEMS

Intelligent tools and data insights that augment human potential

- Data analysis & insights
- Adaptive personalization
- Content generation & simulation
- Scaffolding & feedback
- Pattern recognition & early alerts
- Transparency & explainability

OUTCOMES

- Engaged, empowered learners
- Improved learning outcomes and equity
- Innovative, responsive education systems
- Future-ready communities and societies

Continuous Dialogue · Mutual Respect · Evidence-Informed Decisions

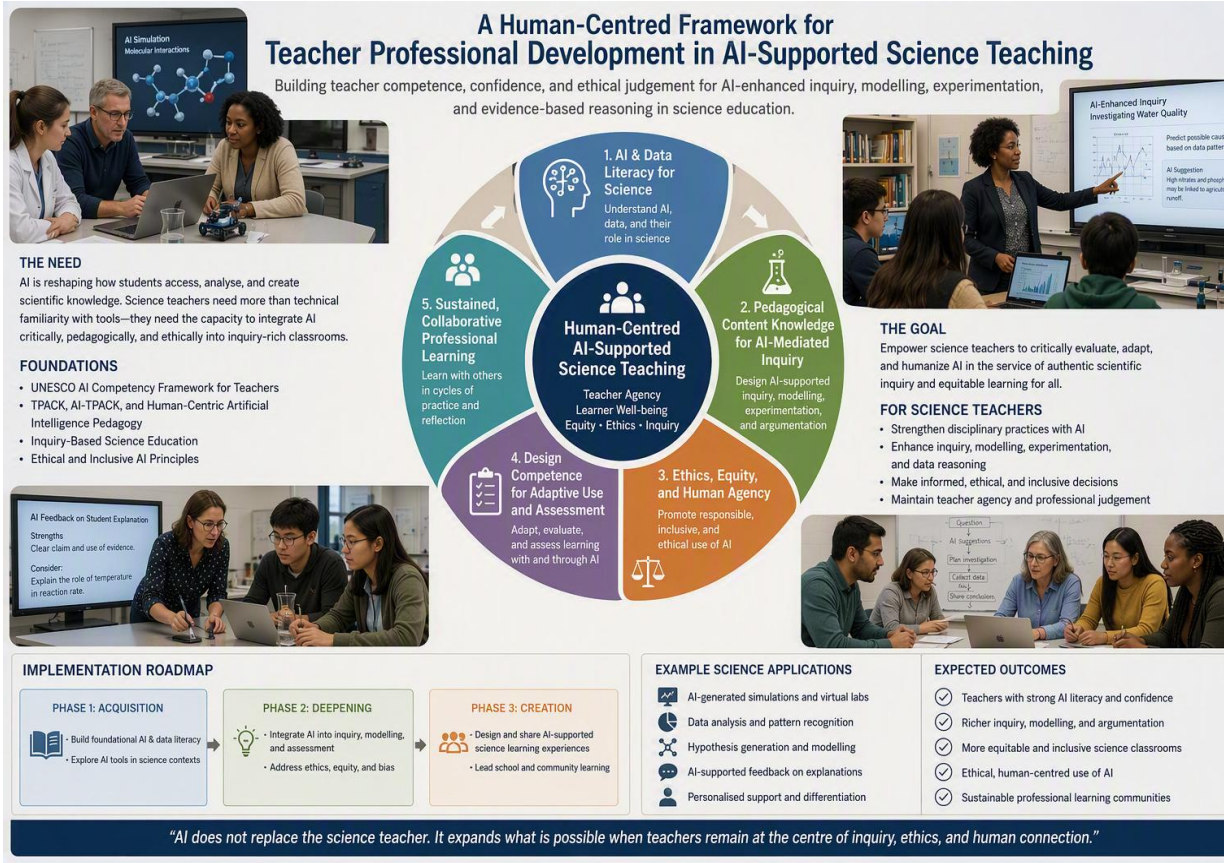
Questions Guiding the Research

- To what extent would decolonial and contextual AI systems resolve the imperialist legacy of linear and decontextualised digital education solutions?
- How are the imbalanced imperialist-dominant narratives reproduced in the AI discourses in sub-Saharan Africa?

Uncoming Paper: Foundation Phase Teachers' Engagement with Coding and Robotics in Rural South African Schools: A Qualitative Multi-Case Study

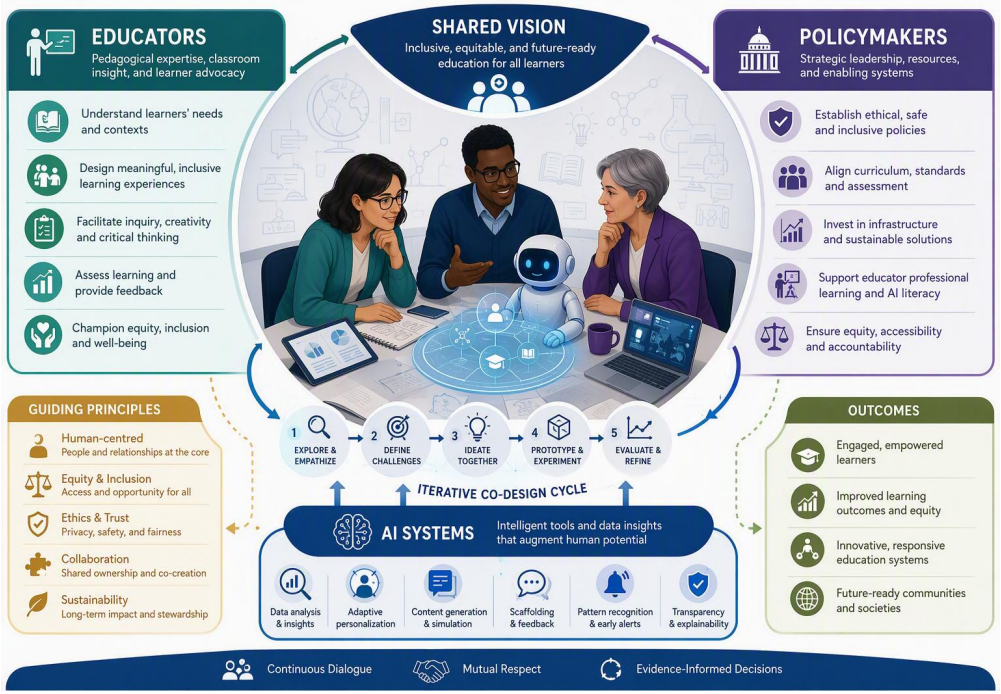
Why Human-Centred AI?

- AI must augment human capability, not replace educators
- Focus on equity, inclusion, ethics and learning outcomes
- Align innovation with public value and national priorities



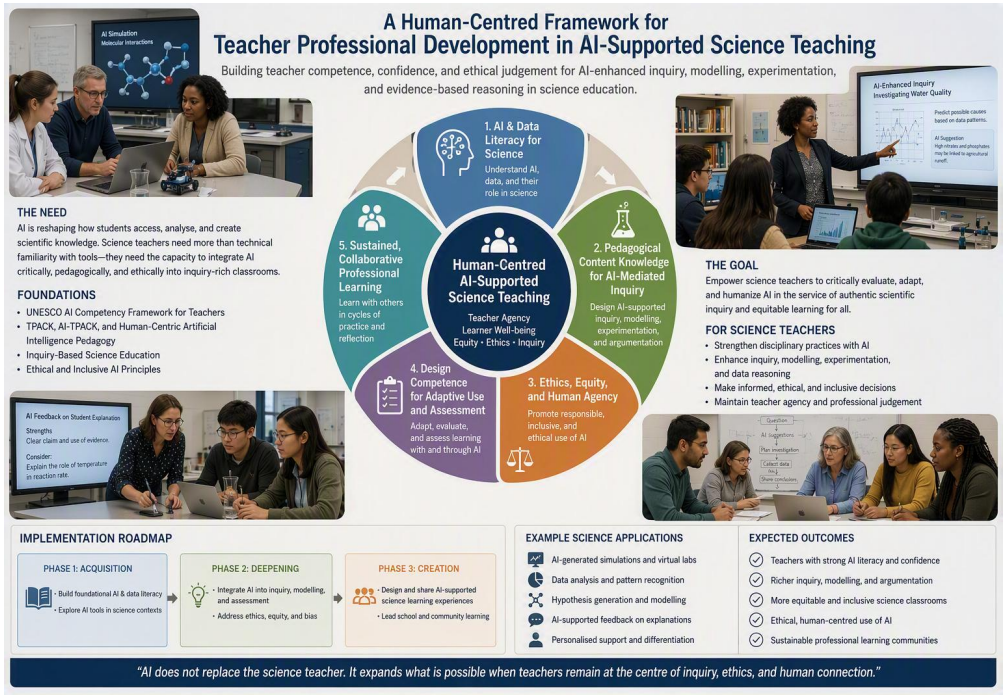
Policy Context for Government

- AI adoption accelerating globally
- Digital divides risk widening inequalities
- Need contextualised African and local approaches



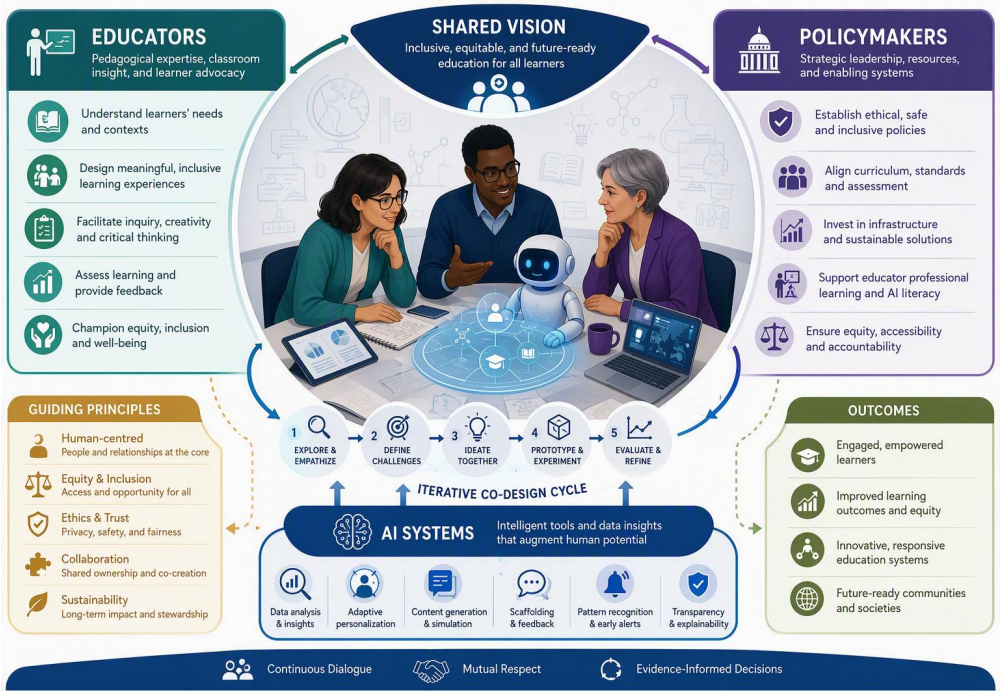
The r2TLC Vision

- Human-AI collaboration
- Learners and educators as co-designers
- Inclusive, future-ready STEAM ecosystems



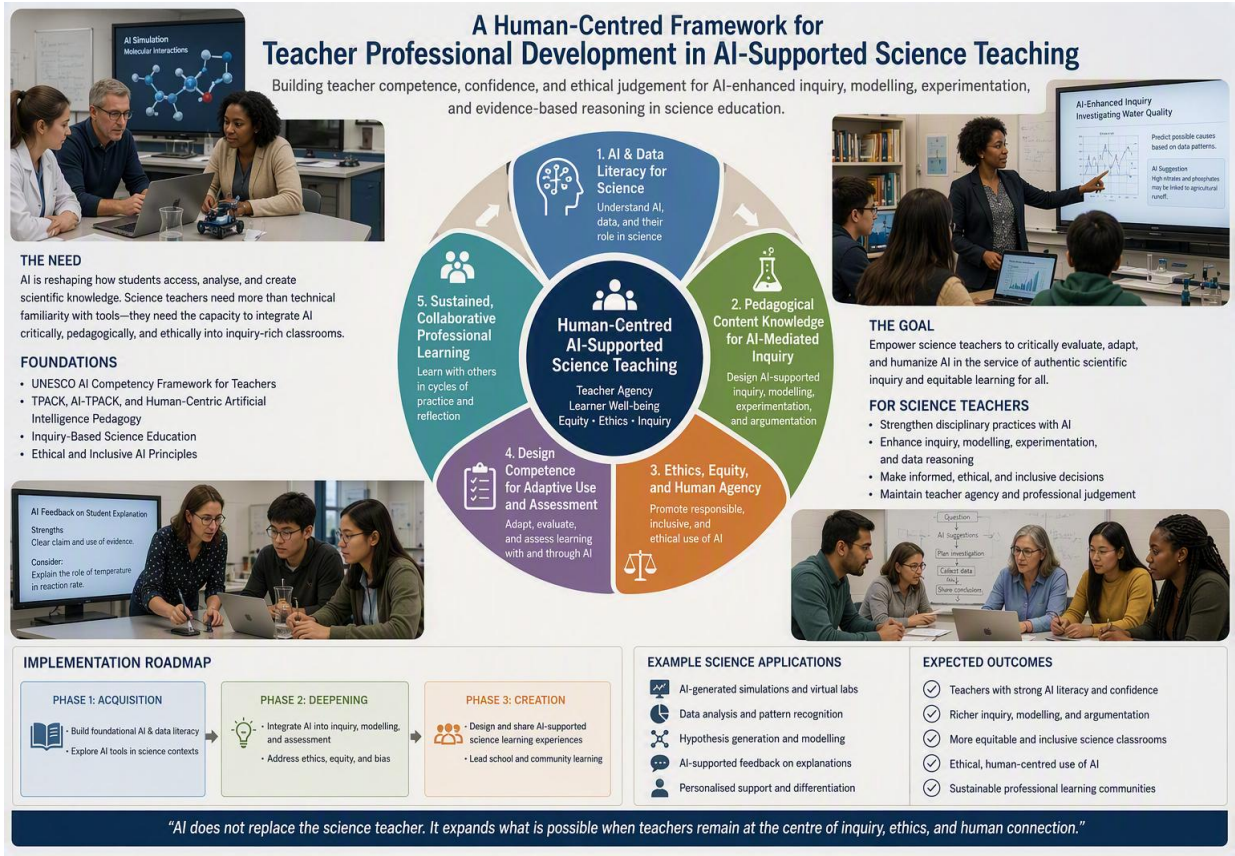
Five Pillars of r2TLC

- AI & Data Literacy
- AI-Mediated Pedagogy
- Ethics, Equity and Human Agency
- Assessment & Design Competence
- Collaborative Professional Learning



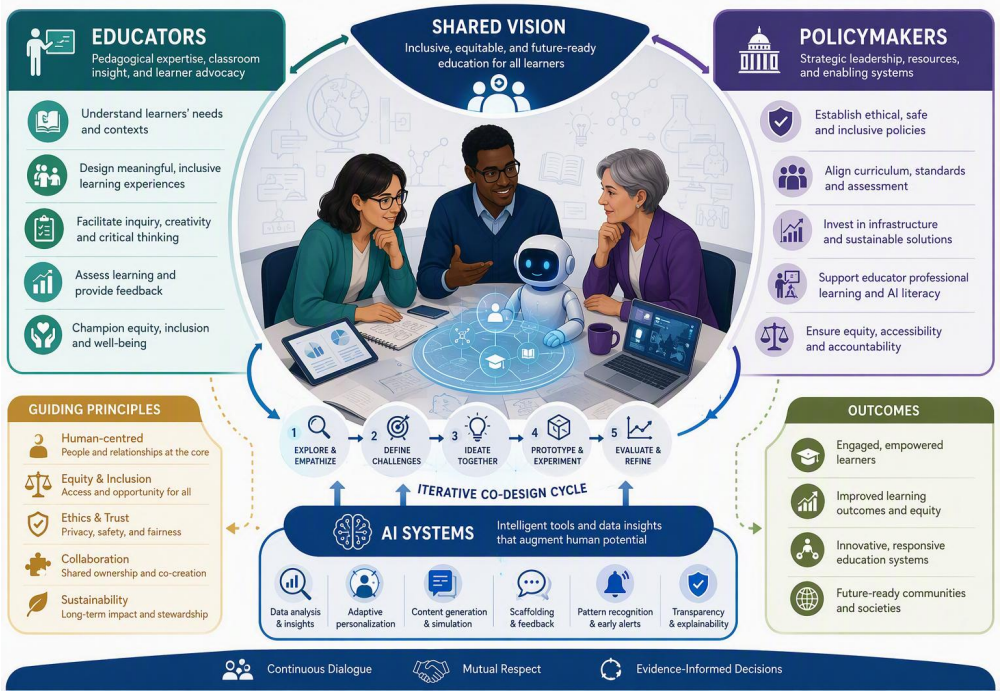
Teacher Professional Development

- Acquisition
- Deepening
- Creation
- Continuous support communities



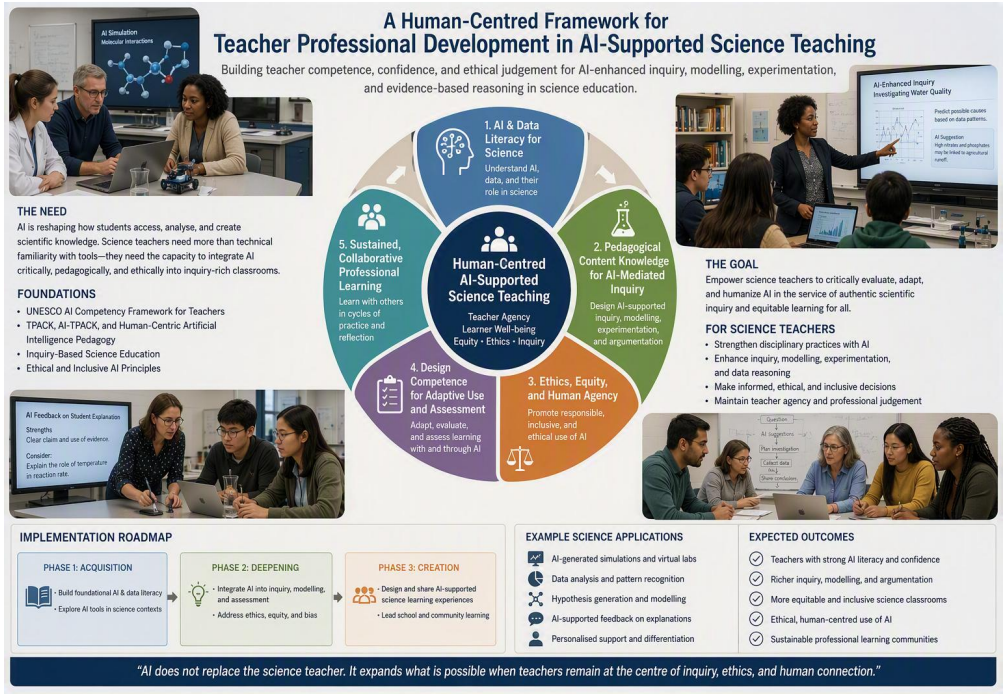
Human-Human-AI Co-Design Model

- Explore needs
- Define challenges
- Co-design with AI
- Prototype and evaluate
- Refine for local contexts



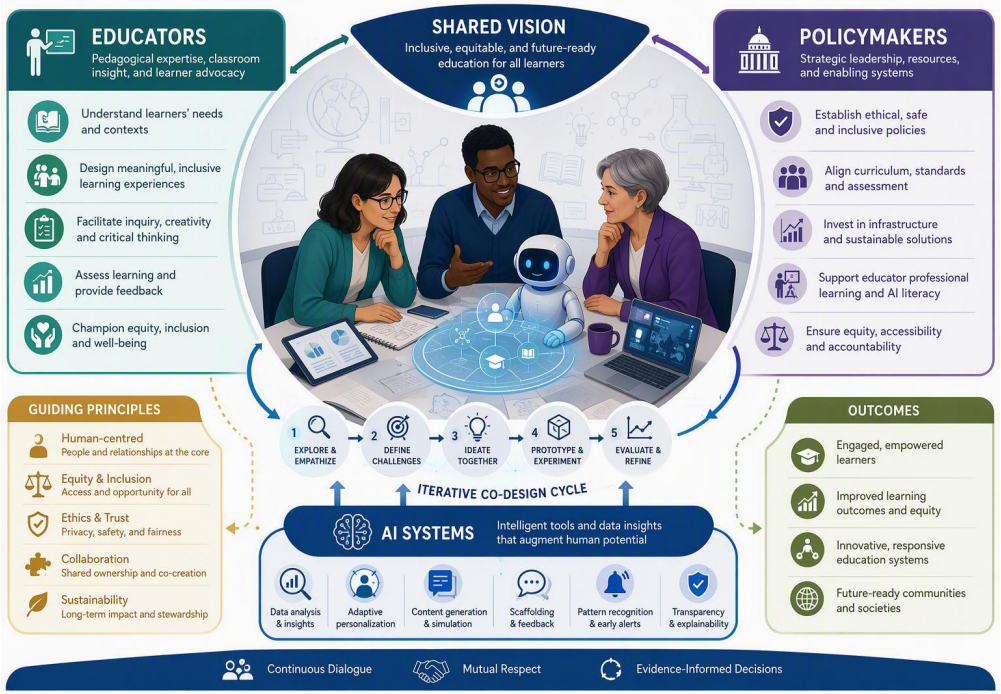
Opportunities for Government

- Personalised learning
- Teacher support
- Learning analytics
- Curriculum innovation
- Efficiency gains



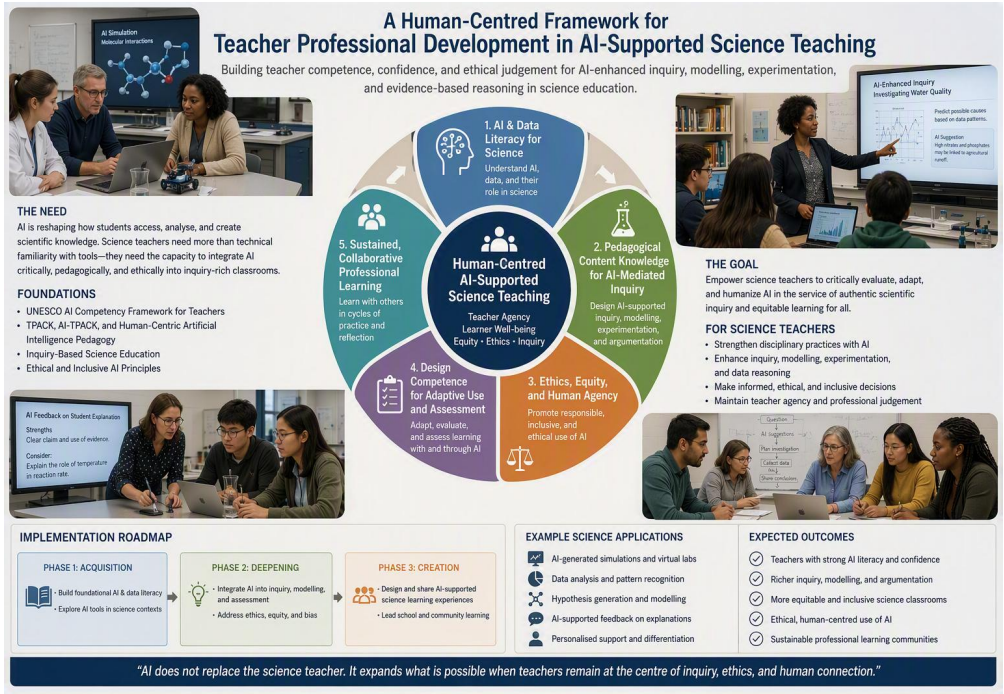
Risks Requiring Governance

- Bias and exclusion
- Privacy and security
- Overreliance on AI
- Infrastructure inequities
- Environmental concerns



Policy Recommendations

- National AI literacy strategy
- Teacher capacity investment
- Ethical AI guidelines
- Local datasets and languages
- Monitoring and evaluation



Conclusion

- Human-centred AI strengthens education systems
- Teachers remain central
- Equity and inclusion are non-negotiable

