Pilot Study Protocol: Understanding, Coherence, and Wellbeing in the Earth 2.0 Framework

Principal Investigator: Alan Peedle

1. Purpose & Hypothesis

To test whether increases in integrated understanding (knowledge coherence) predict increases in physiological coherence and subjective wellbeing.

2. Design Overview

8-week randomised pilot with pre-/post-measures and a 12-week follow-up. Two arms: (1) Earth 2.0 Learning + Coherence Practice, and (2) Active Control. Mixed-method approach with quantitative and qualitative data collection.

3. Participant Overview

N = 20–30 (10–15 per arm), adults aged 18–70. Inclusion: stable physical and mental health. Exclusion: conditions interfering with autonomic measurement. Participants provide informed consent. Minimal risk study.

4. Variables and Measures

Domain	Measure	Metric / Units	Frequency
Understanding	Systems Understanding Quiz, MLQ	score	Baseline / Week 8
Coherence	HRV (RMSSD, LF/HF), Respiration, Speech prosody	numerical	Baseline / Week 4 / Week
Wellbeing	PANAS, SWLS, PSS	score	Weekly
Covariates	Age, caffeine, meds, exercise	record	Baseline

5. Procedures Checklist

Baseline (Week 0): instrument setup, surveys. Weeks 1–8: weekly learning sessions and daily 10-min coherence practice. Week 4: mid-point HRV and PANAS. Week 8: full post-measure. Week 12: follow-up.

6. Equipment / Materials

HRV sensor (Polar H10), smartphone microphone, online surveys (Qualtrics/REDCap), spreadsheet template for logs.

7. Analysis Plan

Mixed-effects models for Group × Time effects. Mediation path: Understanding $\Delta \rightarrow$ Coherence $\Delta \rightarrow$ Wellbeing Δ. Effect sizes and confidence intervals reported. Visualise individual and group trajectories.

8. Expected Outcomes & Significance

Directional hypothesis: increases in understanding will correlate with physiological coherence and higher wellbeing scores. This pilot tests the Earth 2.0 assertion that knowledge integration enhances systemic coherence.

9. Ethics & Data Management

Minimal risk, anonymised data, voluntary participation. Control participants offered coherence training after study completion. Data stored securely for five years.

10. Investigator Checklist

■ Recruitment complete
■ Consent forms signed
■ Baseline data collected
■ Weekly logs submitted
■ Final analysis complete