

Empowering Aotearoa: An Inclusive Approach to AI Literacy in Tertiary Education

Final Report

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Website: <https://inclusiveAI.nz/>

Abstract

This report synthesises the design, implementation, and evaluation of InclusiveAI.nz, a website with resources intended to support inclusive approaches to assessment in Aotearoa New Zealand by building AI literacy for diverse ākonga and for educators. The work used mixed methods and participatory co-design. Building on the Scaffolded AI Literacy (SAIL) framework (MacCallum et al., 2024) and sector assessment guidance (e.g., Furze et al., 2024; Perkins et al., 2024), the project developed introductory learner modules aligned to common assessment activities and a prototype Assessment Checker for educators. Baseline survey data (n = 52) indicated strong learner interest and use of AI for planning and editing, with variable confidence and uneven inclusion indicators among Māori, Pacific, neurodivergent, and ESOL groups. Iterative design and focus groups led to simplified content architecture, clearer transparency, and stronger privacy and data sovereignty guidance in line with Aotearoa policy and ethics.

1. Introduction and Rationale

Generative AI has altered the conditions of assessment and learning, increasing opportunities for personalisation, while raising concerns about equity, ethics, and academic integrity. International syntheses highlight the need for practitioner-led approaches that move beyond bans toward constructive assessment redesign and critical literacy (Lodge et al., 2023; Zawacki-Richter et al., 2019). In Aotearoa New Zealand, this intersects with Te Tiriti o Waitangi, Māori data sovereignty, and obligations to provide accessible, inclusive learning environments (Pūtaiora Writing Group, 2010; Royal Society Te Apārangi, 2025; University of Auckland, 2023).

2. Aims and Research Questions

The research aims to address the gap in AI literacy among diverse learner populations in Aotearoa New Zealand by co-constructing and implementing a comprehensive AI literacy resource that can be practically applied through learning and assessment. Research questions: (1) How might a co-constructed AI literacy resource promote equitable access and use of AI tools amongst diverse learner populations in New Zealand? (2) How can the co-constructed AI literacy resource be integrated into a range of assessments to support building AI literacy, confidence, and competency?

3. Literature Review

AI, equity, and the Aotearoa New Zealand setting

Across higher education, artificial intelligence is often described as a set of tools with potential to personalise, differentiate, and scale learning, yet the evidence base continues to raise questions about pedagogy, ethics, and inclusion (Zawacki-Richter et al., 2019). Systematic reviews argue that while technical maturity has advanced, educator-led uses and pedagogical integration remain uneven and require frameworks that foreground human learning, equity, and governance (Zawacki-Richter et al., 2019).

In Aotearoa New Zealand, responsible-use expectations are increasingly codified through public-sector frameworks and national strategy. The Public Service AI Framework and New Zealand's AI Strategy emphasise transparency, safety, human oversight, and trust, with direct implications for tertiary AI literacy curricula, assessment practices, and student communications (Department of Internal Affairs, 2025; Ministry of Business, Innovation & Employment [MBIE], 2025). International guidance cautions against techno-solutionism and highlights the risk that AI can widen inequities if it is not embedded within inclusive design, robust governance, and local cultural contexts (Bulathwela et al., 2024; UNESCO, 2023). In Aotearoa, this includes alignment with Māori data sovereignty and Māori research ethics.

Building AI literacy: frameworks and equity

Recent work proposes structured approaches to AI literacy that can be applied across education levels. The Scaffolded AI Literacy (SAIL) framework, developed through a Delphi process with New Zealand and international experts, outlines a four-level progression from knowing and understanding through to using, evaluating, creating, and moving beyond AI literacy. It is intentionally not age-bound and offers a practical spine for curriculum mapping and resource sequencing (MacCallum et al., 2024). Sector bodies advise treating generative AI as both an opportunity and a risk. Rather than blanket bans, providers are urged to build literacy, clarify expectations, and align practices with quality standards and local policy (QAA, 2023). UNESCO similarly stresses human-centred, age-appropriate, and inclusion-oriented AI education, drawing attention to bias, privacy, and linguistic inequity, and calling for capacity-building for learners and teachers (UNESCO, 2023). These arguments converge on the view that any benefits of AI

will not accrue automatically to underserved groups without deliberate, inclusive design (Bulathwela et al., 2024).

Co-construction, te ao Māori, and inclusive design

Evidence from students-as-partners and co-creation literatures shows gains in engagement, relevance, and inclusion when learners help to co-design curricula, resources, and assessment. Typologies support staff to decide where, when, and how learners participate, from consultation through to shared decision-making (Bovill, 2019; Bovill et al., 2015). Participatory design research reports improved fit-for-purpose outcomes when end-users shape problem framing, prototyping, and iteration, while warning against superficial involvement and emphasising clear roles and iterative feedback loops. In Indigenous education, systematic reviews underline that genuine co-construction requires Indigenous communities to be involved in decisions that affect learners, well beyond tokenistic consultation (Shay et al., 2024).

In Aotearoa, these design choices are inseparable from Māori data governance and ethics. Te Mana Raraunga sets out Māori data sovereignty principles such as kaitiakitanga, authority, and collective benefit, which extend to AI training data, prompts, and outputs (Te Mana Raraunga, 2018; Te Mana Raraunga, n.d.). Royal Society Te Apārangi's 2025 guidance for generative AI in research underscores disclosure, provenance, privacy, and respect for tikanga, and these expectations can be adapted for learning and teaching contexts (Royal Society Te Apārangi, 2025). Te Ara Tika provides a tikanga-grounded framework for ethical decision-making in Māori research and offers a cultural, relational basis for choices in AI-mediated learning and assessment (Health Research Council of New Zealand, 2010).

Proactive accessibility standards can further embed equity. Universal Design for Learning (UDL) encourages multiple means of engagement, representation, and action or expression, which is directly relevant to introductory AI literacy activities and assessment. New Zealand Government Web Standards require conformance with WCAG 2.2 for public-sector sites from 17 March 2025, adding specific provisions for target size, focus visibility, consistent help, and accessible authentication that reduce cognitive load and friction in learning platforms. Aligning an online AI literacy resource with WCAG 2.2 at level AA will improve usability for disabled learners and mobile users (W3C & New Zealand Digital Government, 2023–2025). Universities in Aotearoa have also begun to publish staff guidance on inclusive digital pedagogy and the permitted use of generative AI, which can inform practical design patterns such as low-bandwidth options, printable materials, and consistent navigation (University of Auckland, 2025).

Assessment for confidence and competence

Sector guidance now points toward constructive, standards-aligned assessment approaches that clarify permitted AI use and direct students to local policy, rather than relying on detection or bans (QAA, 2023). In Australia, TEQSA released a two-stage package that combines assessment principles and propositions with implementation exemplars, foregrounding assurance of learning, transparency, and authenticity (TEQSA, 2023, 2025). Program-level models such as the University of Sydney's two-lane approach distinguish secure, invigilated assessments that

exclude AI for assurance of core outcomes from open assessments that explicitly teach and assess human-AI collaboration with disclosure and reflection. This pattern is increasingly referenced in Australasia, including New Zealand, as a way to balance integrity with professional authenticity (University of Sydney, 2023–2025).

Frameworks that calibrate permissible AI involvement help educators and students navigate expectations. The Artificial Intelligence Assessment Scale (AIAS) sets levels for AI use aligned with learning outcomes and integrity requirements, with Version 2 offering practical guidance and examples. These levels help specify when AI may be used for brainstorming, drafting, analysis, or not at all, and what students must evidence themselves (Perkins et al., 2024). Disclosure templates that prompt students to explain their use of AI are now common in university policies and align with public-sector expectations of transparency (for example, models developed at the University of Melbourne). When disclosure and reflection are paired with feedback literacy, students are better positioned to evaluate AI outputs, calibrate reliance, and iterate responsibly. Feedback literacy refers to the capacity to appreciate feedback, make judgments, manage affect, and take action (Carless & Boud, 2018), and provides a bridge from confidence building to competent practice with AI.

Governance and safety by design

At a system level, New Zealand’s public guidance emphasises human oversight, safety, security, transparency, and accountability. These principles can be localised within tertiary assessment and learning design through practices such as model provenance statements, privacy notices, opt-out pathways for sensitive data, and explicit guidance on permitted and prohibited uses (Department of Internal Affairs, 2025; MBIE, 2025). Royal Society Te Apārangi’s 2025 research guidelines reinforce integrity and disclosure expectations that can be adapted to student work, capstones, and supervised research (Royal Society Te Apārangi, 2025).

Synthesis

The literature converges on a coherent design and assessment stance for AI literacy in Aotearoa. Co-construction with learners can increase contextual relevance, reduce cultural misalignment, and surface accessibility needs early, especially when processes are grounded in Māori data sovereignty principles and Māori research ethics (Te Mana Raraunga, 2018; Health Research Council of New Zealand, 2010). Proactive accessibility through UDL and conformance with WCAG 2.2 enables systematic inclusion for disabled, neurodivergent, multilingual, and remote learners (W3C & New Zealand Digital Government, 2023–2025). Assessment designs that set graduated AI permissions, adopt program-level patterns such as two-lane models, and require disclosure and reflection build both confidence and competence. Paired with feedback literacy, these designs help students learn how to evaluate, verify, and ethically apply AI in discipline-relevant contexts (Carless & Boud, 2018; Perkins et al., 2024; QAA, 2023; TEQSA, 2023, 2025; University of Sydney, 2023–2025).

4. Methodology and Methods

A mixed-methods action research design was applied in this project with iterative cycles of planning, acting, observing, and reflecting. Participatory practices were guided by Te Ara Tika. Governance and co-design were provided by a steering group with representation from Māori, Pacific, neurodivergent, disabled, LGBTQ+, and ESOL communities, alongside educators. Data sources included a baseline learner survey (n = 52), focus groups and deep-dive interviews, structured feedback on the website and tools, and reflective memos. Qualitative data were thematically analysed.

5. Phase 1: Baseline Survey Findings

Learners reported frequent use of AI for planning (75 percent) and editing (65 percent), with a strong appetite to learn more (79 percent). Confidence and evaluation were each endorsed by approximately two-thirds of respondents. Inclusion indicators were mixed: 56 percent felt tools were designed for them; 46 percent felt AI could represent their cultural identity; 44 percent perceived their institution respected identity; 54 percent believed educators understood how AI could support them. Subgroup analyses: Māori reported high use for planning (91 percent) and editing (82 percent) and universal device access, yet lower perceived cultural alignment and evaluation confidence; Pacific respondents reported lower confidence and evaluation (44 percent and 31 percent) and lower device access (63 percent); neurodivergent learners reported high confidence and evaluation (85 percent) but lower perceptions of educator understanding (31 percent); ESOL respondents reported lower device access and confidence.

6. Phase 2: Preliminary Focus Group – Design Requirements and Implications

Following the baseline survey, a preliminary focus group clarified design requirements before public release. Participants, including educators and learners working with priority groups, asked for role-specific entry with a brief onboarding step that routes users to learner or educator materials. They preferred concise, low-load resources with short overviews, and access to downloadable, printable resources. The group emphasised accessibility and language support, including te reo Māori, plain and literal language, reduced table density, alt text, and options for multimodal access such as voice interaction. Finally, participants prioritised educator capability and safe use, calling for explicit prompt-literacy teaching that moves beyond first-pass summaries, assessment-aligned exemplars, and, where appropriate, institutionally constrained or closed-corpus deployments. These requirements directly informed the site architecture, resource presentation, and the specification of the Assessment Checker.

7. Phase 2: Development and Site Build

Consistent with the preliminary focus group the build prioritised learner specific entry with a brief onboarding step to describe approaches for AI use, low-load presentation of resources,

transparent contribution and curation, and accessibility as a primary constraint. Resources appear as concise dropdown cards with short abstracts; a submission workflow enables community contribution with light editorial review from the research team. Accessibility improvements include reduced table density, clearer numbering, downloadable print ready resources, plain and literal language, and staged bilingual development beginning with te reo Māori. Options for multimodal access are in process, including voice interaction, which increases usability. Within this architecture, three design strands structure InclusiveAI.nz. First, the SAIL framework provides the backbone for introductory learner modules across Plan, Evaluate, and Explain Your Use, mapped to assessment moments. Second, a prototype Assessment Checker enables educators to upload assessment tasks and select personas to receive evidence-informed recommendations derived from New Zealand tertiary guidance and the research literature. Third, discipline-neutral teaching resources and exemplars aligned to frameworks such as the AI Assessment Scale and the AI Design Analyser are developed under educator-facing pages, with guidance on building feedback literacy in courses (Carless & Boud, 2018; Perkins et al., 2024).

7.1 SAIL Framework and Translation

SAIL structures progression from foundational knowledge through applied use and critical evaluation. In response to the focus group's request for relevance and voice, SAIL guidance is contextualised for Aotearoa and linked to short persona-anchored exemplars, while site copy cautions against treating populations as uniform. Extensive updates to the SAIL framework have been made during the project to provide clearer and more explicitly signposted progression pathways for specific sets of competencies. Translation of the core components of the updated SAIL framework into te reo Māori has been prepared with attention to meaning equivalence, with audience testing with Māori stakeholders planned to ensure quality and avoid tokenism. In addition, the translation of the updated framework into Samoan has been contracted and is in progress.

7.2 Introductory Modules

The three introductory modules support common assessment-aligned activities and incorporate the onboarding emphasis identified by participants. The first module focuses on developing an understanding of AI and begins with a short orientation on AI concepts, including bias and the risks of using the tools. Module 2: Using LLMs for your studies, develops strategies to verify outputs, recognise hallucinations, and teaches prompt literacy that moves learners beyond first-pass summaries toward critical analysis and evidence checking. This supports learners to be transparent about disclosure and reflection on appropriateness relative to learning outcomes, drawing on feedback-literacy principles (Carless & Boud, 2018). Module 3 is designed to be a resource bank with a list of AI tools that will support learning, this will grow with user contributions. Each module provides a low-load summary with a path to detail, printable quick-reads and worksheet packs, and progressively added short videos and quizzes. Accessibility refinements include reduced table density, clearer numbering, alt text, and plain and literal language; documentation notes multimodal options, including voice interaction where appropriate.

7.3 Assessment Checker (Prototype, Version 2)

The Assessment Checker provides formative suggestions for fairer assessment design and reflects the focus group's preferences for brevity, transparency from a first person view. Recommendations are presented as brief, actionable statements with source links, including an indication where evidence is mixed; persona selection reflects lived-experience lenses. The Checker does not make high-stakes decisions and should not automate assessment outcomes, it is designed to analyse the initial assessment; human oversight is required (DIA, 2025; MBIE, 2025). The tool is designed to sit alongside educator capability building and, where appropriate, use within institutionally constrained or closed-corpus environments to support safe practice, consistent with the site's emphasis on prompt literacy and assessment alignment (Perkins et al., 2024). The AI design analyser is also provided as a supplementary resource that assists educators to assess the coverage of AI literacy in their course delivery.

8. Phase 3: Feedback on Website and Tools

Feedback on the live site praised the multi-modal resource approach and transparency statements and identified areas for improvement, including clearer terminology, even more reduced table density for readability, stronger guidance on privacy and Māori data sovereignty, and more explicit statements regarding group heterogeneity. For the SAIL page, reviewers requested clearer orientation and restructuring of the capabilities table. For the Assessment Checker, reviewers asked for stronger caveats on population heterogeneity, clearer source attribution, and an explicit transparency box specifying model/version and data handling.

8.1 Focus groups and steering deep dives

Qualitative discussions highlighted key tensions: avoid homogenising ethnic-based exclusion with experiential exclusions such as neurodiversity; ensure cultural elements are meaningful rather than tokenistic; mitigate information overload with better onboarding; and provide educator-centred supports recognising educators as diverse learners who need micro-PD and wellbeing supports to use AI safely and effectively.

9. Phase 4: Application and Ongoing Refinement

Feedback sessions yielded several actionable suggestions. Participants recommended prioritising onboarding through a brief entry diagnostic that routes users to tailored content. They advised releasing educator-facing micro-PD pages and exemplar packs aligned to the AI Assessment Scale. They emphasised continuing te reo Māori and Pacific language localisation supported by stakeholder testing. They also suggested extending Assessment Checker sources and personas while maintaining strict transparency and default no-storage settings. Finally, they encouraged partnering with providers to embed analytics and evaluate outcomes over time. These elements will continue to be developed.

10. Discussion

This discussion synthesises the findings against the two research questions and situates them within the literature on AI, equity, and assessment in Aotearoa New Zealand. Sector guidance calls for transparency, safety, and human oversight as preconditions for responsible educational use of AI, which has direct implications for literacy curricula, assessment design, and student communications (Department of Internal Affairs, 2025; Ministry of Business, Innovation and Employment, 2025; Royal Society Te Apārangi, 2025; UNESCO, 2023). Reviews also caution that technical capacity alone does not deliver equitable learning outcomes and that pedagogy and governance must be deliberately designed to avoid widening gaps (Bulathwela et al., 2024; Zawacki-Richter et al., 2019). In this project, co-construction, data sovereignty, and ethics frameworks provided that design stance and shaped choices about content, data care, and user pathways (Te Mana Raraunga, 2018; Health Research Council of New Zealand, 2010; Shay et al., 2024; Bovill, 2019; Bovill et al., 2015).

For RQ1, equitable access and use were promoted when the resource reduced cognitive load, made pathways explicit, and recognised heterogeneity within and across groups, which is consistent with AI literacy frameworks that emphasise staged capability development and context (MacCallum et al., 2024; UNESCO, 2023). Suggestions that role-specific entry with brief onboarding, concise resource cards with clear metadata, and tagging that allows one item to surface under multiple needs would improve navigability for learners who reported uneven confidence and evaluation skills. Accessibility choices align with Universal Design for Learning and with WCAG 2.2 requirements that now apply to public sector sites, which together reduce friction for disabled, neurodivergent, multilingual, and mobile users (W3C and New Zealand Digital Government, 2023–2025). Staged bilingual development beginning with te reo Māori and explicit data-care messaging align the resource with Aotearoa expectations for cultural safety and governance (Te Mana Raraunga, 2018; Royal Society Te Apārangi, 2025). The resulting environment is more findable and identity-aware while avoiding the homogenisation that the literature warns against in persona-based design (Shay et al., 2024).

For RQ2, integration into assessment was operationalised by mapping the learning progression to assessment actions and by calibrating permitted AI involvement using widely referenced frameworks. The introductory modules support pre-task scoping, verification and judgement, and transparent disclosure, which together build confidence and competence in line with feedback-literacy principles that help students make judgements and act on guidance (Carless and Boud, 2018). Educator materials calibrated to the Artificial Intelligence Assessment Scale provide a practical way to set levels of AI use aligned to outcomes and integrity requirements, with emerging evidence of feasibility in implementation studies (Perkins et al., 2024; Furze et al., 2024). Program-level patterns that distinguish secure, invigilated assessments from open assessments that explicitly teach and assess human–AI collaboration are increasingly cited in Australasia and are reflected in the exemplars and checklists provided here (Quality Assurance Agency, 2023; Tertiary Education Quality and Standards Agency, 2023, 2025; University of Sydney, 2023–2025). The Assessment Checker complements these practices by translating New Zealand guidance and research into concise, advisory recommendations with linked sources, presented under a transparency panel that declares model version and the absence of text storage, consistent with public-sector expectations for transparency and oversight (Department of Internal Affairs, 2025; Ministry of Business, Innovation and Employment, 2025).

A structural tension continues to persist between making one public resource comprehensive and avoiding cognitive overload and homogenisation. The literature suggests privileging deep, contextualised exemplars and clear expectations over exhaustive lists, and the present build follows that approach while maintaining room for community contribution under light curation (Bovill, 2019; Bovill et al., 2015; Zawacki-Richter et al., 2019). On the triangulated evidence available, the co-constructed design appears to promote equitable access and enable practical assessment integration. Stronger claims will depend on longitudinal analytics and comparative course implementations, but the alignment between the design choices and the reviewed frameworks provides a coherent rationale for the observed gains.

11. Limitations

The baseline sample is small and institutionally located; analytics collection commenced late; prototype affordances may lag model changes. Mitigations included triangulating qualitative insights, iterative content release for feedback, and a modular architecture for updates.

12. Project Outputs

- InclusiveAI.nz public website with learner and educator tracks
- Three introductory modules aligned to assessment tasks (Plan, Evaluate, Explain Your Use)
- SAIL framework contextualisation and te reo Māori translation
- Prototype Assessment Checker (Version 2)

References

- Bovill, C. (2019). Co-creation in learning and teaching: The case for a whole-class approach in higher education. *Higher Education*, 79(6), 1023–1037.
- Bovill, C., Cook-Sather, A., Felten, P., Millard, L., & Moore-Cherry, N. (2015). Addressing potential challenges in co-creating learning and teaching: Overcoming resistance, navigating institutional norms and ensuring inclusivity. *Higher Education*, 71(2), 195–208.
- Bulathwela, S., Pérez-Ortiz, M., Holloway, C., Cukurova, M., & Shawe-Taylor, J. (2024). Artificial intelligence alone will not democratise education: On educational inequality, techno-solutionism and inclusive tools. *Sustainability*, 16(2), 781.
- Carless, D., & Boud, D. (2018). The development of student feedback literacy: Enabling uptake of feedback. *Assessment & Evaluation in Higher Education*, 43(8), 1315–1325.
- Department of Internal Affairs. (2025a). *Public Service AI Framework*.
- Department of Internal Affairs. (2025b). *NZ Government Web Accessibility Standard 1.2*.
- Health Research Council of New Zealand. (2010). *Te Ara Tika: Guidelines for Māori research ethics*.
- MacCallum, K., Parsons, D., & Mohaghegh, M. (2024). The Scaffolded AI Literacy (SAIL) framework for education. *He Rourou*, 23.
- Ministry of Business, Innovation and Employment. (2025a). *New Zealand's strategy for artificial intelligence: Investing with confidence*.
- Ministry of Business, Innovation and Employment. (2025b). *Responsible AI guidance for businesses*.
- Perkins, M., Furze, L., Roe, J., & MacVaugh, J. (2024). The Artificial Intelligence Assessment Scale (AIAS): A framework for ethical integration of generative AI in educational assessment. *Journal of University Teaching & Learning Practice*, 21(6).
- Quality Assurance Agency for Higher Education. (2023a). *Maintaining quality and standards in the ChatGPT era*.
- Quality Assurance Agency for Higher Education. (2023b). *Generative AI: Advice and resources*.
- Royal Society Te Apārangi. (2025). *Guidelines for the best-practice use of generative AI in research in Aotearoa New Zealand*.
- Te Mana Raraunga. (2018). *Principles of Māori data sovereignty*.
- Te Mana Raraunga. (n.d.). *Te Mana Raraunga Charter*.

Tertiary Education Quality and Standards Agency. (2023). *Assessment reform for the age of artificial intelligence*.

Tertiary Education Quality and Standards Agency. (2025). *Enacting assessment reform in a time of artificial intelligence*.

UNESCO. (2023). *Guidance for generative AI in education and research*.

University of Auckland. (n.d.). *TeachWell Digital resources and inclusive teaching guidance on generative AI*.

University of Sydney. (n.d.). *Two-lane approach to assessment*. Teaching@Sydney.

World Wide Web Consortium (W3C). (2023). *Web Content Accessibility Guidelines (WCAG) 2.2*.

Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education: Where are the educators? *International Journal of Educational Technology in Higher Education*, 16, 39.