A11 | PRIMARY-STUDY PROTOCOL AND REPRODUCIBLE METHODS RESEARCH

Beyond the Published Portfolio: An Optional-Publication Trial of Learning Transfer, Provenance Mastery and Scholarly Portability

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Primary-study protocol and reproducible methods; separate human editorial record.

Keywords: publication as learning, student agency, DataCite, provenance mastery, mentor-cluster trial, scholarly portability

Read online / article companion / citation exports

Contribution

A matched-pair trial of optional supported publication against a resource-matched private authentic audience, with independent transfer and provenance outcomes; completed 300-record metadata audit and 20,000-replicate-per-scenario sensitivity analysis.

Prospective primary mentor-cluster trial; completed bounded DataCite REST metadata audit and artificial-data design analysis. No participant learning effects, authentication or full-text reuse eligibility are reported.

Abstract

Publication can give learning a consequential audience while also creating incentives to mistake visibility for understanding. This article operationalizes publication as learning infrastructure through a prospective, matched-pair mentor-cluster trial and two completed methodological analyses. The proposed trial recruits 96 mentor-course clusters, paired within educational settings, with 12 consenting learners per cluster. It compares an optional supported publication pathway with an equally resourced private authentic-audience pathway. Both conditions receive the same inquiry time, feedback opportunities, technical support and academic assessment; neither course credit nor study participation depends on public release. The primary estimand is the equal-cluster intention-to-treat effect of offering the supported pathway on change in blinded transfer performance. Provenance mastery is a gated secondary outcome; publication counts are process descriptions. A frozen DataCite REST audit examines 300 education-related DOI records, comprising bounded alphabetic samples of datasets, software and dissertations from publication years 2024-2025. Creator ORCID entries occur in 119 records, resource-version strings in 136 and version relations in 97; these fields do not authenticate identity or establish student authorship, quality, consent or learning. Nine artificial-data scenarios, each with 20,000 replicates, expose the sensitivity of candidate design power to clustering and retention. No participant effects are reported. The contribution is a falsifiable educational design and an inspectable provenance architecture that preserves a right not to publish, separates editorial decisions from assessment and evaluates learning beyond the portfolio's public appearance.

1. The problem: public outputs are not learning outcomes

A student's work may deserve an audience beyond a classroom. A community partner can challenge an unsupported recommendation, a repository can preserve a reproducible analysis and an editor can require a more careful account of limitations. Yet these possibilities do not establish that publishing causes learning. Strong students may publish more often; well-resourced families may supply additional editing; selective journals may accept work after the most difficult intellectual changes have already occurred. Counting publications can reward these advantages while obscuring the instructional process.

The corresponding conceptual article in this volume distinguishes assessment, submission, acceptance, publication and software contribution. The present article preserves that separation and asks a narrower empirical question: does offering a supported, optional scholarly pathway improve transferable reasoning beyond equally serious inquiry addressed to a private authentic audience? The comparison matters because a weak

control would confuse publication with additional adult attention, technical help or the simple experience of being taken seriously.

Movement Thinking supplies an orientation toward adaptable inquiry and accountable revision [1]. It does not supply evidence that public exposure is educationally necessary. This protocol treats a decision not to publish as a legitimate exercise of agency, rather than a failure of ambition. Its original contribution is a design in which learning, portability, editorial acceptance and public identification can vary independently, making a favorable result harder to manufacture through the platform's own activity counts.

2. Intellectual contribution and competing explanations

Wiley and Hilton distinguish practices enabled by open permissions from the broad range of activities described as open pedagogy [2]. Their conceptual clarification is useful here: a public URL, an openly licensed work and a task that requires learners to revise reusable material are different conditions. This study therefore does not call every uploaded assignment open scholarship. It specifies which activities the intervention adds, who retains decision authority and what evidence could contradict the proposed benefit.

Cho and MacArthur's investigation of revision with peer and expert reviewing provides a research precedent for treating feedback and revision as substantive instructional activities [3]. Its population, tasks and design do not establish an effect of this proposed publication pathway. We retain feedback in both arms precisely so that a difference cannot be attributed merely to one group receiving a reader. The new question concerns a supported route into an enduring scholarly record, including explicit rights, attribution, version and audience decisions.

Three rival explanations guide design choices. An attention explanation predicts comparable improvement when private work receives equally committed readers. A selection explanation predicts that publication correlates with performance because learners choose into it. A compliance explanation predicts better-looking records without better understanding. Equal support addresses the first, randomized offers address the second at the offer level, and independent transfer tasks address the third. None is eliminated by a DOI badge.

3. A provenance contract for learning work

The proposed provenance contract separates six objects: an assessed learning artifact; a student's contribution statement; a versioned submission; an editorial decision; a released publication; and a software companion that helps a reader inspect evidence. An artifact can be assessed without being submitted. A submission can be declined while the learner earns full course credit. An accepted output can remain under embargo or require removal of material that cannot be shared. A companion is a distinct software object, rather than an additional human author.

This architecture draws a limited technical analogy to the W3C provenance model, which distinguishes entities, activities and responsible agents [16]. The protocol does not claim that adopting a vocabulary makes the evidence true. Instead, it uses separate records to make contradictions inspectable. A revision event points to prior and subsequent artifacts; a contribution assertion names its responsible human; and permission to expose identifying information has its own record and withdrawal limits. Private consent documents never become public metadata.

The contract is intentionally exportable. A learner can retrieve a human-readable contribution statement and a machine-readable manifest without adopting a particular journal, learning management system or AI account. Export preserves dates, source identifiers, version relationships and rights assertions without translating a teacher's assessment into editorial acceptance. The trial tests whether learners understand these distinctions, not merely whether the platform can fill the fields for them.

4. Why DataCite is the methods database

DataCite provides a public metadata interface covering multiple research-output types. Its documented query syntax permits field restrictions, publication-year ranges, resource-type filters, pagination and DOI-name sorting [4]. This makes it suitable for an executed feasibility audit of the metadata structures that a course-linked publication system might need to exchange. It is not a database of measured student learning, a registry of authenticated student status or a complete census of educational publications.

DataCite's schema distinguishes mandatory identification fields from recommended and optional descriptive properties [6]. Optional does not mean educationally unimportant: a record may identify a resource adequately for discovery while omitting the information a learner needs to explain its version or reuse conditions. Conversely, richly populated metadata can describe an unsuitable or inaccessible resource. The audit examines supplied fields and relationships; it does not infer academic quality from their presence.

The metadata policy explicitly covers deposited metadata available through DataCite APIs under a CC0 waiver, while excluding the linked resources and retaining applicable individual rights [5]. Accordingly, the public research materials release a privacy-minimized metadata projection and aggregate results. They do not reproduce linked dissertations, datasets, code files, student portfolios or personal profiles. Metadata reuse and permission to republish a research output remain separate decisions.

5. Frozen sample and reproducible selection

The completed audit uses three queries sharing the expression subjects.subject:education AND publicationYear:[2024 TO 2025]. The resource-type-id parameter is respectively dataset, software and dissertation. Each request specifies page[size]=100, page[number]=1, sort=name, affiliation=true and publisher=true. Exact percent-encoded URLs, retrieval times, byte counts and SHA-256 digests are preserved in the frozen-query manifest. The analysis includes precisely the 100 returned records in each stratum, totaling 300 unique DOI records.

This is a bounded alphabetic stress test, selected for inspectability and heterogeneous resource structures. It is not random, representative, exhaustive or restricted to school students. Alphabetic DOI ordering can concentrate repository prefixes, and the education subject query can include broad or inconsistent subject assignments. These limitations prevent population prevalence estimates. The returned total-hit counts are recorded as API metadata but do not become denominators for the 300-record audit; no unseen pages are described as inspected.

Before summarization, the tool checks unique normalized DOI keys and the stated publication-year window. The public projection omits names, abstracts and actual ORCID values while retaining audit-bearing counts, field-presence indicators, relationship metadata and resource dates. Its own hash is published. Re-running the live query may produce different bytes because repositories update metadata. The frozen projection reproduces the reported aggregates; raw response hashes document the original source bytes retained with the research record.

6. Operational definitions and safeguards against category errors

A creator ORCID indicator requires a nameIdentifiers entry whose declared scheme is ORCID. A second indicator checks its ISO 7064 checksum and expected syntax. Neither operation observes an OAuth transaction or proves that the identifier belongs to the named creator. DataCite's creator structure supports identifier and affiliation information [7]; ORCID's authentication guidance concerns a separate account-holder authorization workflow [12]. The audit never labels a checksum-valid identifier authenticated, and never interprets creator count as a verified author count.

Resource version means a nonempty attributes.version value. Metadata version is the registry's revision-related attribute and is retained separately, not substituted for the resource version [9]. Version relations are the explicitly declared HasVersion, IsVersionOf, IsNewVersionOf and IsPreviousVersionOf relationships. Relation types and target identifiers are preserved because a generic link cannot tell whether something is a supplement, a revision, a citation or a component [8]. No graph edge is silently converted into evidence of intellectual contribution.

Rights-list presence and rights-URI presence are separate descriptive indicators. Neither is a verified reusable-full-text decision [10]. PublicationYear, an Issued date, the registry-created timestamp, registered timestamp and top-level published timestamp are also recorded separately [11]. In particular, a null published value is not proof that the underlying resource was never published. Registry registration is not an editorial acceptance date. A landing URL is not a demonstrated accessible full-text file, and a null contentUrl does not prove the file cannot be downloaded elsewhere.

7. Completed metadata audit: availability and heterogeneity

All 300 sampled DOI records have a landing-URL field and registry-created and registered timestamps. A declared Issued date appears in 284 records. The top-level published timestamp and contentUrl are absent in every sampled record. These findings identify an interface hazard: a platform that treats the wrong timestamp as publication or equates the API contentUrl with all possible access routes would misrepresent this sample. The audit did not follow the landing pages or verify the linked full text.

Creator ORCID entries occur in 119 records, comprising 239 entries; all 239 pass the implemented syntax and checksum check. The stratum counts are 19 datasets, 67 software records and 33 dissertations with at least one such entry. This is evidence about deposited metadata only. No account was authenticated, no identity match was adjudicated and no

inference was made about the creators' age, enrollment, contribution or consent to a new publication.

A resource-version string occurs in 136 records: 66 datasets, 68 software records and two dissertations. Explicit version relations occur in 97 records: zero datasets, 69 software records and 28 dissertations. The differing patterns demonstrate why a single version-completeness score would conceal different repository practices. Related identifiers appear in 138 records; 42 records point to another DOI within the bounded sample. None of the recorded DOI relations is a self-link under the implemented normalization.

Rights lists occur in 199 records and rights URIs in 173. Language is supplied in 191 and formats in 36. The results suggest that an educational export workflow needs explicit missing-value handling and a second-stage rights check, rather than assuming a discoverable DOI arrives with a complete reuse and portability package. They do not estimate global repository quality, diagnose a publisher's compliance or identify an ingestion-ready collection. The sample contains DOI records, including versions and components, rather than 300 proven distinct research projects.

8. Prospective study population and recruitment

The planning design recruits 96 mentor-course clusters in 48 matched pairs, with 12 baseline-cohort learners per cluster, totaling 1,152 learners if recruitment succeeds. These are design targets, not a recruited sample. Settings may include secondary and introductory postsecondary research courses, but pairs must share educational stage, course domain and institution or a prespecified closely comparable setting. The study does not mix minors and adults within an unmatched comparison or presume one syllabus serves every participant.

A cluster is a stable instructional group supervised by one mentor team. A mentor cannot teach both assigned conditions; shared staff create a larger interference unit requiring redesign before allocation. Eligible courses provide sustained inquiry, an accessible private-audience route and sufficient paid support in either arm. A documented roster fixes eligibility, invitations, consent and baseline assessment before allocation. Sampling cannot select only work already likely to be published or families willing to make their children publicly identifiable.

Independent ethics review, institutional agreements, an accessible consent process, funding and a timestamped registration must precede activation. For minors, the applicable permission and assent arrangements require institutional determination;

nothing in this article supplies approval. Research participation, routine instruction, optional public release and ORCID connection have separate choices. Students who decline the research retain the ordinary course and its assessment opportunities. Recruitment flow and exclusions are reported without identifying nonparticipants.

9. Pairing, allocation and the intervention contrast

Pairs are formed before assignment using course domain, educational stage, baseline cluster mean transfer score and scheduled support. An independent custodian freezes the roster and pairing rules, then assigns one cluster in each pair to the supported pathway using independently generated fair binary draws. The seed and allocation file remain access-controlled until allocation is irrevocable. The methods package specifies the procedure but contains no purported study roster or executed participant allocation.

Both arms receive a 20-week inquiry course, ten 60-minute mentor sessions, two rounds of substantive reader feedback, equivalent technical assistance and the same assessment schedule. Reader recruitment, expected response time and feedback prompts are matched. The comparator addresses a real, pre-agreed audience in a protected setting: for example, a community advisory group that receives a confidential recommendation and asks questions. Private does not mean perfunctory, and public does not mean more academically demanding by definition.

The intervention additionally offers a structured, optional pathway through contribution negotiation, a rights-and-source audit, versioned submission preparation, a release decision and referral to an independent editorial process. Comparable time in the comparator is used for private provenance explanation and audience-responsive revision. Submission is supported, never required. An editor may reject a technically competent submission. The causal contrast is therefore an offer embedded in instruction, rather than guaranteed publication, journal prestige or receipt of a DOI.

10. The primary outcome and assessment design

The primary outcome is change from baseline to week 20 on a newly specified 24-point transfer assessment, with six dimensions scored 0-4: framing an unfamiliar problem, selecting relevant evidence, recognizing uncertainty, addressing a competing account, revising under a changed constraint and justifying a decision for an affected audience. It does not award points for publication, polished design, DOI possession or use of a favored technical vocabulary. This is a proposed instrument requiring pilot development, not a validated scale.

Parallel tasks present fictional but consequential decisions outside a student's own project. A task may ask whether a community should adopt a proposed environmental-monitoring practice, supply conflicting evidence and then alter a budget or privacy constraint. Students explain the initial decision, revise it and identify what would change their mind. Task forms are counterbalanced within clusters. No real person's health, finances or personal story is needed to demonstrate reasoning, and permitted accommodations are specified before allocation.

Two masked human raters score every assessment independently. The primary value is their mean total; a third reviewer audits discrepancies without selectively replacing inconvenient scores. Pilot artifacts, excluded from the confirmatory cohort, support cognitive interviews, accessibility checks and rater calibration. Reports include agreement and disagreement by dimension, not just a favorable reliability summary. Large ceiling effects, unreliable form equivalence or scoring that reveals condition require revision before recruitment and renewed simulation, rather than retrospective optimization.

11. Provenance mastery, portability and other outcomes

The gated secondary outcome is a 16-point provenance-mastery assessment with four 0-4 dimensions: distinguish an original contribution from source material; explain the difference between resource and metadata rights; reconstruct a defensible version chain; and justify an identity or audience-disclosure choice. Learners respond to unfamiliar, privacy-preserving case records. Knowing where to click is insufficient: a correct answer must explain why a DOI is not evidence of review, or why an ORCID string alone does not authenticate its holder.

A separate technical portability audit exports and reimports a synthetic or permission-cleared artifact package. It checks eight items: stable artifact key, human contribution assertion, source-identifier preservation, resource version, typed version relation, rights assertion, access state and distinct assessment/editorial status. Each item is scored present-and-equivalent or not. This technical index is a process endpoint, not a substitute for learning. It can be evaluated without releasing the learner's assessed work or registering a DOI.

Secondary outcomes include the six-week delayed transfer task, learner control over audience decisions, mentor and learner time, accessibility failures and unwanted exposure. Publication, submission, rejection, embargo and withdrawal counts are descriptive trajectories reported by assigned arm. The study does not rank students by those counts. No analysis conditions the primary effect on eventual acceptance, and a student's decision to keep work private does not remove that student from follow-up.

12. Estimand, estimator and multiplicity

The primary causal target is the equal-cluster average effect of offering the pathway on the baseline cohort's mean transfer-score change at week 20. Each cluster receives equal weight, irrespective of enrollment or publication uptake, and each matched pair contributes equally. The design therefore answers a policy question about a typical recruited instructional group. A student-weighted contrast may be reported secondarily, with its different target stated. Neither random assignment nor a registry audit establishes national representativeness.

For complete outcomes, calculate each cluster's baseline-cohort mean change, subtract the comparator mean from the intervention mean within each pair, and average the 48 pair differences. The standard error is their sample standard deviation divided by the square root of the pair count; the prespecified approximate interval uses the t distribution with 47 degrees of freedom. Pair-matched design reasoning is informed by Imai, King and Nall [13]. The supplied diagnostic tool implements this calculation and a sign-flip test of the sharp null for complete pair differences.

One two-sided primary test uses alpha .05. The provenance-mastery test is confirmatory only if the primary test rejects, following a fixed-sequence gate; otherwise it is descriptive with an interval. Other outcomes and subgroup contrasts are explicitly exploratory. The sharp-null sign-flip result and average-effect interval answer different questions. Neither supports a claim that every learner benefits, nor identifies an effect of publication itself among those who choose it.

13. Missing outcomes, clustering and sensitivity

Outcome collection continues after non-submission, editorial rejection, mentor changes or intervention discontinuation when consent permits. Missingness is reported by arm, pair and reason. The main analysis targets the fixed baseline cohort, not a favorable available-case subset. The analysis specification proposes 50 multilevel posterior-predictive imputations of bounded endline scores under a missing-at-random working model, including baseline score, assignment, educational stage, task form, prespecified access indicators, pair intercepts and mentor-cluster variation. Model priors, diagnostics and small-sample pooling rules are supplied separately and require an implementation check before registration [18].

Missing-at-random is not guaranteed by including many predictors. Prespecified pattern-mixture sensitivities shift imputed treatment-arm outcomes downward by one and two rubric points relative to the working model, repeat symmetric comparator shifts and

report bounded 0-24 extreme-case ranges. A wholly missing cluster is not discarded with its partner to manufacture complete pairs. Such a loss triggers explicit sensitivity analysis and changes the strength of the conclusion. The restricted Python diagnostic deliberately does not implement imputation or accept raw participant data.

Mentor spillovers, shared audiences and cross-cluster friendships are recorded as plausible interference, not assumed absent because the allocation file is tidy. The primary assigned-policy effect remains interpretable only under its stated exposure assumptions. A per-protocol analysis is exploratory. An instrumental-variable claim about actual publication is not planned: the offer can change motivation, rights literacy and feedback engagement before publication, violating a simple exclusion story.

14. Executed artificial-data design analysis

The completed design analysis follows an explicit aim, data-generating mechanism, estimand, method and performance-measure structure [15]. It uses 48 pairs, two clusters per pair and 12 baseline learners per cluster. Gaussian cluster and individual mean errors generate artificial change-score means, with a constant standardized effect of .30. The within-pair change-score intracluster correlation is varied across .05, .12 and .20; independent learner retention is 1.00, .85 or .70. Shared matched-pair variation cancels in the paired contrast.

Each of nine scenarios uses 20,000 replicates with random seed 20261016. At retention .85, simulated power is .96435, .88125 and .77520 for correlations .05, .12 and .20 respectively. Corresponding Monte Carlo standard errors are .00131, .00229 and .00295. Across all scenarios, power ranges from .74930 to .98020, null rejection from .04740 to .05265 and nominal 95% interval coverage from .94735 to .95260. These results were computed, not proposed or copied from another article.

The simulation does not validate a rubric, supply an empirical correlation or predict an actual institutional result. Retention is unrelated to outcomes, at least one learner per cluster is retained by construction, no cluster is lost and interference is absent. The effect size is measured in the artificial within-pair individual change-score standard deviation, not an established conversion to rubric points. Pilot evidence and actual recruitment constraints must replace these planning assumptions before a confirmatory sample is finalized.

15. Equity, burden and the right not to publish

A public portfolio can distribute opportunity unequally. Learners may have safety concerns, disability-related access needs, culturally specific reasons to control an audience or previous experiences of unwanted exposure. The protocol makes privacy-preserving work a complete academic route. Consent to research does not authorize publicity; course enrollment does not authorize permanent indexing; connecting an ORCID account does not authorize a journal to claim authorship. A withdrawn public-release choice is honored within documented technical and legal limits, without promising erasure from every external copy.

Both groups receive budgeted support, accessible task formats and equivalent assessment credit. Publication fees, where relevant to the intervention, cannot become a student-level treatment barrier or a reward for a favorable finding. A funding and fee plan must be resolved before recruitment. Independent safeguarding review can pause a release, and suspected unwanted exposure receives a response regardless of its effect on the study's completion count. Resource needs and barriers are measured directly instead of inferred from demographic stereotypes.

Weekly time diaries sample designated baseline, midpoint and endline windows. The candidate sustainability boundary is more than 45 additional minutes of uncompensated mentor work per learner per month without a learning gain judged educationally meaningful before allocation. This is a planning threshold for stakeholder ratification, not a validated universal rule. Burden, privacy events and inequitable uptake remain reportable harms even when the primary mean difference is positive.

16. Falsification, interpretation and governance

The theory is weakened if publication offers improve metadata completion and submission volume without improving independent transfer performance. It is further challenged if provenance mastery remains superficial, if learners cannot explain their own source choices, or if improvements depend on additional unpaid adult labor. A private authentic-audience pathway performing equally well would support an audience-and-feedback account over a claim that public release is necessary. Such a finding would be a useful design result, not a failed institutional publicity campaign.

Editorial acceptance is outside the instructional treatment's control. Editors receive submissions through the venue's ordinary criteria, may require revision or decline them, and cannot be asked to accept work to improve treatment compliance. If the intended author or platform leader has an editorial role, an independent handling arrangement

must govern a submission's decisions. A course grade, study treatment or publication fee cannot purchase a favorable editorial outcome. Trial reporting should follow applicable cluster-reporting principles, including flow at both cluster and learner levels [14].

The platform can preserve evidence, retrieve a cited passage or flag an incomplete manifest; it cannot infer consent, assign human authorship or certify peer review from a database match. A paper companion's responses must distinguish the reported 300-record metadata audit and artificial-data analysis from the unexecuted primary trial. This boundary gives superintendents a practical procurement criterion: a system should make unsupported inferences harder to display, rather than merely making records easier to generate.

17. Limitations

The metadata sample privileges alphabetically early DOI prefixes and three output types. Subject labels are supplied by repositories, and a Dissertation type is not an independently adjudicated student thesis. Records may be versions, components or inconsistent descriptions of the same broader project. The audit checks neither full-text accessibility nor source-specific reuse permission and authenticates no creator. Its counts describe a frozen interface sample, not publication quality, peer-review coverage or educational effectiveness.

The trial is a proposal. No participants have been enrolled or allocated in the research package, no outcomes collected and no ethical approval or registration identifier supplied. New instruments may fail during piloting. Volunteer institutions, mentor enthusiasm and the feasibility of private authentic audiences limit generalization. Two educational stages require careful matching and transparent reporting; sufficient statistical power for an overall effect does not establish power for subgroup interactions or rare privacy harms.

Finally, a randomized offer does not identify an isolated effect of being published. The pathway contains rights instruction, version reasoning, contribution negotiation and anticipation of an external decision. Equal time and readers reduce some rival explanations but do not decompose this package. A positive result would justify further replication and component studies, while a null or harmful result should inform the conditions under which a private learning record is preferable.

18. Implications for superintendents and university presses

Publication infrastructure should serve the learner's intellectual development and control over evidence. For a superintendent, that means specifying the audience, support, accessible alternatives and cost before choosing a platform. For a university press, it means preserving independent editorial decisions and portable provenance without turning a course's outputs into a guaranteed publication pipeline. Persistent identifiers can improve reference and continuity; they cannot replace a defensible assessment or the learner's own explanation.

This article supplies a testable next step from the volume's conceptual account. Its completed metadata and design analyses establish what was actually inspected and computed, while its prospective study makes a stronger educational claim available for future testing. The relevant institutional achievement would be an honest, sustainable improvement in transferable reasoning and provenance judgment. The size or visual polish of the public portfolio is not the criterion of success.

Method and data statement

Completed work comprises a three-query, 300-record DataCite metadata feasibility audit and nine 20,000-replicate artificial-data simulations. Public materials contain a minimized frozen projection, query and source hashes, executable offline audit and simulation tools, analysis results, proposed instruments and a study specification. They contain no participant records or linked-resource full texts. The raw response hashes and retention boundaries are documented. The primary mentor-cluster study, imputation model, validation pilot and ethical approvals remain prospective; no completed student learning effect is claimed.

AI, authorship and editorial disclosure

Dr. Freedom Cheteni is the intended human author and remains responsible for the argument, data interpretation and any eventual submission. ChatGPT assisted research, coding, analysis and drafting [17]; no precise underlying model version is asserted. DataCite, ORCID, cited authors and institutions are sources, not consenting coauthors or endorsers. This original protocol has no inherited human-review attestation, acceptance decision, publication date or assigned DOI. A source-grounded companion retrieves the article's statements and does not perform human peer review or create participant findings.

Research materials and reproducibility

Inspect the prospective study specification, original draft instruments, executed public-file audit, design simulations and documented tools. No local participant trial outcomes are reported.

Complete research package · ZIP

Methods and reproduction guide

Study specification

Proposed instruments and scoring rubrics

Statistical analysis specification

Frozen metadata projection

Executed metadata audit

Executed design sensitivity analysis

Executable offline research tools

Source and rights audit

Frozen queries and response hashes

Read the corresponding conceptual foundation

Evidence and limits

Claim	Evidence	Limit
A public DOI portfolio cannot by itself demonstrate learning or human authorship.	Separate provenance/transfer outcomes and source-specific metadata semantics. [6, 7, 12, 16]	The metadata audit tests supplied fields, not outcomes, identities or consent.
Portability fields vary across the bounded metadata sample.	Executed three-stratum 300-record audit: 119 creator-ORCID-bearing records, 136 resource versions, 97 version relations, 199 rights lists. [4, 5, 8, 9, 10, 11]	Alphabetic first-page strata are not representative or exhaustive; no full-text rights/access check.
Power depends materially on within-pair residual clustering and retention.	Nine executed 20,000-replicate artificial-data scenarios; power .74930-.98020 for δ = .30. [13, 15]	No empirical ICC, validated rubric SD, informative missingness or cluster loss is modeled.
The causal target is the effect of offering the pathway, not publication itself.	Matched-pair allocation before uptake, equal resources, independent editorial decisions and baseline-cohort follow-up. [2, 3, 13, 14, 18]	The study is prospective; implementation, instrument piloting, ethics determination and registration remain necessary.

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