Project Reports

Designing Effective Academic Project Reports:
Structure, Quality Standards and Assessment Criteria
A Narrative Review

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ABSTRACT

Academic project reports are widely used in higher education to assess subject knowledge, problem-solving ability, research competence and the capacity to communicate an investigation in a structured manner. Their quality nevertheless varies with differences in project design, supervision, methodological expectations and assessment practice. This narrative review synthesises established principles of research design, reporting transparency, assessment design and publication ethics to describe the structure and quality criteria of effective project reports across science, engineering, medicine and health sciences, agriculture, management, education, the social sciences, arts and humanities. It distinguishes eight project types, proposes a flexible report architecture, and argues that coherence among problem, objectives, methods, evidence and conclusions is the central quality attribute, consistent with the principle of constructive alignment. It examines responsible use of digital tools and generative artificial intelligence, drawing on published evidence that fabricated references and falsified data remain documented risks. A 100-point assessment rubric with discipline-sensitive adjustments, a preparation workflow and a pre-submission checklist are proposed as educational tools; none has been empirically validated. Recommendations are offered for students, supervisors, institutions and the 'Project Reports' Journal (PR) of ESRA Publications, including a proposed companion author-guideline document. A high-quality project report is not simply a record of completed activities; it is a coherent, evidence-based account connecting a meaningful problem with appropriate methods, defensible findings and proportionate conclusions.

Keywords: Academic project reports; report structure; research methodology; quality assessment; assessment rubrics; constructive alignment; research integrity; reproducibility; higher education; artificial intelligence

Key points

- A project report should be judged by the coherence of its argument (objectives, methods, evidence and conclusions aligned; Figure 3), not by length or visual polish.
- Structure should follow the project: eight project types are distinguished (Table 3), and assessment weights should be adjusted to the type (Table 12).
- Integrity is a threshold requirement rather than a mark to be traded against other criteria; published data illustrate why verification matters (Figure 5 and Figure 6).
- A 100-point rubric (Table 11, Figure 8), a preparation workflow (Figure 1) and a pre-submission checklist (Table 15) are offered as unvalidated educational tools.

1. Introduction

Academic project reports are an established component of undergraduate, postgraduate and professional education. They allow students and researchers to demonstrate that they can identify a problem, examine existing knowledge, select suitable methods, collect or analyse evidence, interpret outcomes and communicate conclusions. Project work is used across engineering, science, medicine, agriculture,

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commerce, management, education, the social sciences, arts and humanities. Although form and depth differ between programmes, the central purpose is constant: to provide a transparent and logically organised account of an academic or practical investigation.

Project-based learning is widely promoted in higher education. A review of empirical studies describes it as a promising approach to improving student learning, while calling for better measurement of students' learning processes and final products (Guo et al., 2020; Kokotsaki et al., 2016). Because the report is the principal product of such work, the way it is structured and assessed shapes what students learn to value.

A project report should be distinguished from an ordinary essay, laboratory notebook, dissertation, thesis or journal article (Table 2). These genres overlap, but a project report commonly documents a defined piece of work and explains its context, objectives, process, outcomes and implications. It may describe an experiment, a prototype, a software system, a field investigation, a survey, a case study, a business analysis, a mathematical model or a critical literature-based inquiry.

The quality of a report cannot be judged by length, visual appearance or grammatical polish alone. A technically ambitious project may remain weak if objectives are unclear, methods are inadequately described, data are unreliable or conclusions exceed the evidence. Conversely, a modest project may be academically strong when it is carefully designed, honestly reported and critically interpreted. Transparent methods and reproducible reporting are central to trustworthy research (Munafò et al., 2017).

Digital libraries, statistical packages, reference managers, online repositories and generative artificial intelligence (AI) have expanded the tools available to project authors. These tools support efficient preparation, but they also create risks involving inaccurate information, fabricated references, data privacy, attribution and authorship. Controlled evaluations have found that chatbots can generate bibliographic citations that do not correspond to real works (Walters & Wilder, 2023), so verification becomes an explicit quality requirement rather than a courtesy. The author remains responsible for the content and integrity of the final report.

Guidance on project reports is often fragmented: institutional templates tend to prescribe format, whereas methodological sources address particular designs or disciplines. This review attempts to bring structure, quality criteria, assessment, integrity and technology use together in one multidisciplinary framework.

1.1 Aim and objectives

The aim of this review is to examine the structural, methodological, presentational and ethical characteristics of effective academic project reports and to propose a practical framework for their preparation and evaluation. The specific objectives are to:

(1) identify the principal sections and components of an academic project report;
(2) explain the contribution of topic selection, problem formulation, objectives and literature review to report quality;
(3) discuss methodological requirements across project types and academic disciplines;
(4) identify criteria for assessing evidence, analysis, originality, presentation and academic integrity;
(5) consider the responsible use of digital tools and AI in project preparation; and
(6) propose a practical assessment rubric and editorial recommendations for the Project Reports Journal (PRJ), ESRA Publications.

2. Approach and scope of the narrative review

This article uses a narrative review approach, which aims at interpretation and critique rather than exhaustive pooling of results; narrative and systematic reviews serve different and complementary purposes (Greenhalgh et al., 2018). The discussion synthesises established principles of academic writing, research design, reporting transparency, assessment design, research-data stewardship and publication ethics. It is not a systematic review: no exhaustive database search, formal study-selection protocol, risk-of-bias assessment or quantitative synthesis was undertaken. The PRISMA 2020 statement, which is designed for systematic reviews (Page et al., 2021), was therefore not applied.

Narrative reviews have no reporting guideline equivalent to PRISMA, but the SANRA scale offers six appraisal items: justification of the review's importance, statement of aims, description of the literature search, referencing, level of evidence, and presentation of data central to the argument (Baethge et al., 2019). SANRA was designed to complement journal-specific evaluation, and its authors note that further validity testing is desirable. Table 1 uses SANRA's headings as a transparency device to describe how this review was prepared.

Table 1. Transparency summary of the review approach, organised by SANRA item headings.

Item	How it is addressed in this review
Importance	Project reports are a near-universal assessment and publication format, yet guidance is fragmented across institutions and disciplines (Section 1).
Aims	A single aim and six objectives are stated in Section 1.1.
Literature search	Targeted web-based searches of publisher platforms, repositories and the websites of recognised organisations (for example ICMJE, COPE, ALLEA and EQUATOR), supplemented by following citations from key papers. No exhaustive database search, fixed date range or formal selection protocol was used.
Referencing	All 23 references were checked against publisher, repository or organisational bibliographic records in October 2026. DOIs are given where the record was confirmed. In-text citations and the reference list were cross-checked in both directions.
Level of evidence	Claims are tied to cited sources. Recommendations that lack empirical validation (the rubric, emphasis adjustments, checklist and editorial workflow) are labelled as proposals (Sections 11, 15 and 17).
Presentation of data	Figure 5 and Figure 6 re-plot summary statistics published in the cited studies. Figure 4 uses simulated data and Figure 9 is an illustrative template; both are labelled as such in their captions.

3. Nature, purpose and types of academic project reports

An academic project report is a structured document describing a defined investigation, design exercise, practical assignment, analytical study, development activity or other academic undertaking. It should show what was attempted, why it was undertaken, how it was approached, what evidence or outputs were obtained and what can reasonably be concluded. Table 2 positions the project report relative to neighbouring genres, and Table 3 summarises eight common project types.

Table 2. The project report compared with related academic genres.

Genre	Primary purpose	Typical emphasis	Relationship to the project report
Essay	Argue a position from existing sources	Argument and use of sources	A project report documents a defined piece of work with objectives, methods and outputs, not only an argument.
Laboratory or field notebook	Contemporaneous record of procedures and observations	Completeness and traceability	The notebook is raw evidence; the report organises and interprets it for a reader.
Project report	Account of a defined investigation, design or analysis	Alignment of objectives, methods, evidence and conclusions	Reference genre of this review.
Dissertation or thesis	Extended original research for a degree	Original contribution and depth	Usually broader and longer; a project report is typically narrower and may be application-oriented.
Journal article	Communicate new findings to the scholarly community	Novelty and concision for peers	A project report may be primarily educational; publication requires adaptation to journal standards.

Table 3. Common types of academic project reports.

Project type	Typical features	Illustrative disciplines	Principal quality emphasis
Experimental	Controlled procedures, observations, measurements and analysis	Chemistry, physics, biotechnology, materials science	Control, replication, measurement accuracy
Engineering / design	Requirements, design choices, calculations, construction, testing and performance	Civil, mechanical, electrical and other engineering fields	Design rationale; performance against criteria
Computational	Algorithms, software, modelling, simulation, code and validation	Computer science, mathematics, computational science	Validation, code and data documentation
Survey-based	Population, sampling, instrument design, response collection and analysis	Education, management, sociology, public policy	Sampling, instrument quality, ethics
Case study	In-depth analysis of a defined organisation, event, system or situation	Business, health, social sciences	Depth of analysis; theoretical framing
Literature-based	Critical synthesis, comparison and interpretation of published evidence	Humanities, health, science and interdisciplinary studies	Transparent search; synthesis, not summary
Field-based	Site selection, field observations, sampling and contextual analysis	Agriculture, ecology, environmental sciences	Site context; sampling strategy
Creative / design practice	Concept development, design rationale, production and evaluation	Architecture, arts, communication, product design	Originality; rationale and critical evaluation

The structure should follow the project rather than forcing every project into an experimental template. A literature-based humanities project does not require laboratory methods; an engineering prototype needs design specifications and testing; and a survey-based study requires a defensible sampling strategy and a clear account of the questionnaire or interview process.

4. Recommended structure of an academic project report

Institutions may prescribe their own formats. The following structure is a flexible model that can be adapted to the length, level and discipline of the project. Figure 1 shows the sequence in which most projects are planned, conducted and written; in practice the sequence is iterative, because results may require objectives or methods to be revisited and quality checks may require further drafting.

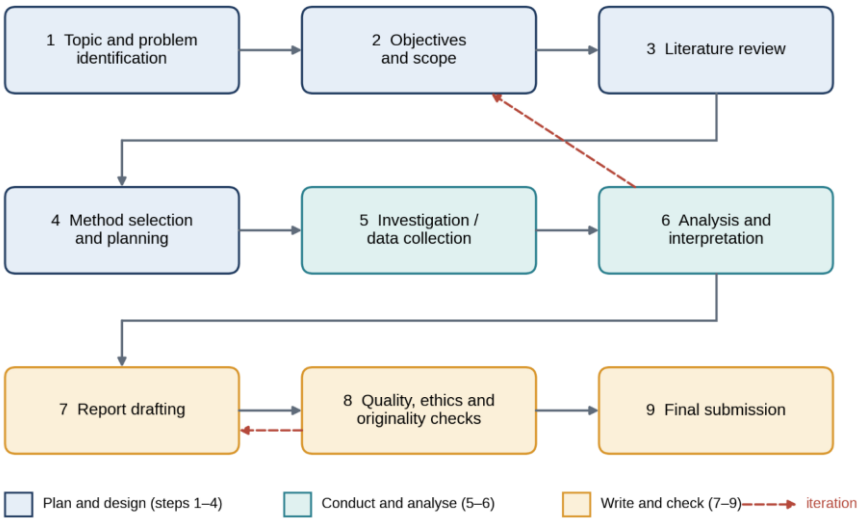


Figure 1. A general workflow for planning, conducting, documenting and checking an academic project. Steps are colour-coded by phase; dashed arrows indicate common iteration loops.

4.1 Preliminary pages and main body

Table 4 lists the components of a report, their function and the weaknesses that most often reduce their value. The main body can be pictured as an hourglass (Figure 2): it moves from the broad context of the introduction to the narrow evidence of the results, then widens again as the discussion and conclusion relate the findings to the literature and to wider implications.

Table 4. Components of an academic project report, their function and common weaknesses.

Component	What it should do	Common weaknesses
Preliminary pages		
Title page	State a concise, informative title, author, programme, department, institution, supervisor (if applicable), academic year and submission date.	Title that overstates the scope
Certificate or approval page	Include only when required; identify accurately the approving authority and the status of the work.	Incorrect authority or status
Author declaration	Confirm originality and appropriate acknowledgement of sources, assistance and contributions; it must be consistent with actual circumstances.	Declaration that does not match actual practice, including undisclosed AI assistance
Acknowledgements	Recognise meaningful academic, technical, institutional or financial assistance without implying authorship.	Vague credit; implied authorship
Abstract or executive summary	Summarise context, problem, objectives, approach, principal findings and conclusion; be understandable independently of the main text.	Claims or findings not supported in the text
Contents and lists	Provide an accurate table of contents and, where useful, lists of figures, tables, abbreviations and symbols.	Out-of-date numbering
Main body		
Introduction	Explain background, problem, rationale, significance, scope, research questions and objectives, moving from the general context to the specific issue.	Vague or excessive objectives
Literature review / theoretical background	Critically examine prior work, concepts and theories; compare findings, identify limitations or disagreements, and explain the gap or rationale.	Disconnected list of article summaries
Materials and methods / methodology	Describe design, materials, equipment, participants, sampling, procedures, software, instruments, analytical methods and ethical safeguards, with enough detail to understand and, where feasible, reproduce the work.	Missing detail; unjustified choices
Results / outputs	Present observations and findings clearly and accurately, using tables, figures, diagrams, photographs or code outputs suited to the project; distinguish measured results from interpretation.	Interpretation mixed with results; unlabelled figures
Discussion	Interpret findings in relation to the objectives and the literature; explain unexpected outcomes; consider limitations, uncertainty and implications.	Restating results; ignoring limitations
Conclusion and recommendations	Answer the objectives or research questions, summarise the principal contribution and make recommendations proportionate to the evidence; do not introduce major new findings.	Claims that exceed the evidence
References and appendices	Provide complete, consistent citations and supporting material such as questionnaires, calculations, datasets, code, drawings or extended tables.	Uncited sources; unverified details

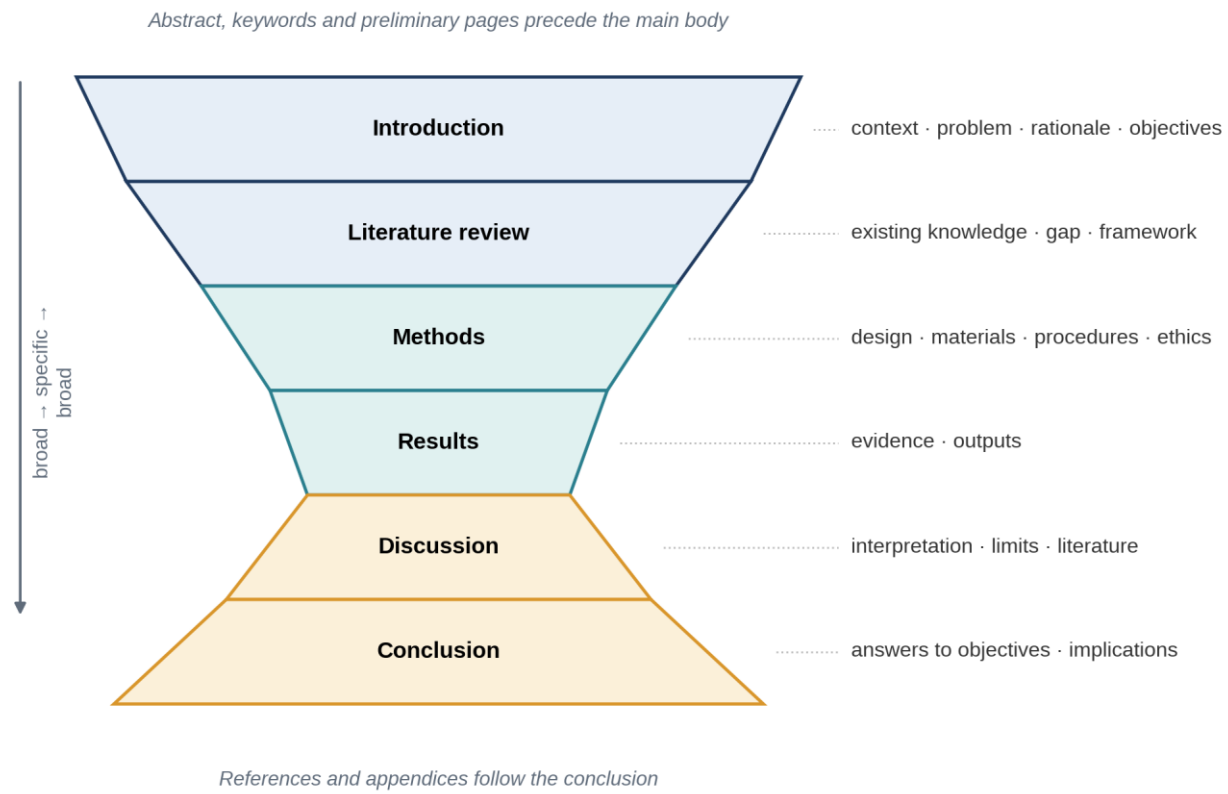


Figure 2. The hourglass model of the main body of a project report: broad context narrows to the specific investigation and widens again to implications.

5. Quality criteria for effective project reports

Ten criteria recur across the methodological and assessment literature and are summarised in Table 5. They are not independent. A useful way to see their relationship is as a "golden thread" running through the report (Figure 3): the problem justifies the objectives, the objectives determine the methods, the methods generate the results, and the conclusions answer the objectives without exceeding the evidence. In educational design, the equivalent principle is constructive alignment, in which intended outcomes, learning activities and assessment are deliberately made consistent with one another (Biggs, 1996). Applied to a report, a break in the thread (for example an objective that no method addresses, or a conclusion that no result supports) is a more serious weakness than a local lapse in style.

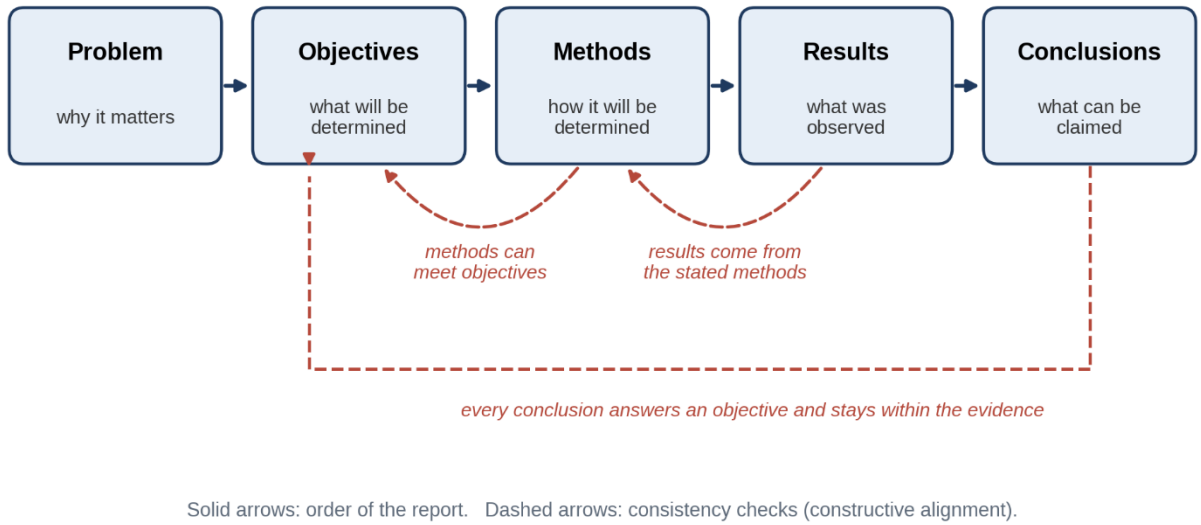


Figure 3. The "golden thread" of a project report. Solid arrows show the order of presentation; dashed arrows show the consistency checks that readers and assessors apply.

Table 5. Quality criteria for project reports and indicative evidence that each has been met.

Criterion	Meaning	Indicative evidence in the report
Relevance and significance	The topic addresses a meaningful academic, scientific, technical, social, creative or practical question, and the report explains why the work matters.	Stated rationale and beneficiaries; link to a documented need or gap
Clear and achievable objectives	Objectives are specific, coherent and feasible within the time, resources and academic level, guide the methods and provide a basis for judging completion.	Numbered objectives, each mapped to a method and a conclusion
Engagement with literature	Sources are relevant, credible and sufficiently current; established findings are distinguished from assumptions, hypotheses and contested interpretations.	Comparative synthesis; identified gap; accurate citation
Methodological appropriateness	Methods fit the question and are justified; key decisions, controls, sampling, instruments, procedures and analytical techniques are described.	Justified choices; reproducible description
Accuracy and reliability of evidence	Measurements, observations, responses and calculations are recorded and reported honestly; calibration, replicates, missing data, exclusions, uncertainty and sources of error are discussed where relevant.	Uncertainty statements; data-handling record
Critical analysis	The report explains the meaning and significance of results rather than restating them, and considers alternative explanations and limitations.	Alternative explanations weighed; limitations linked to findings
Originality and contribution	Originality may arise from a new application, adaptation, comparison, design, analysis, interpretation or synthesis; it need not mean discovery of a new principle.	Explicit statement of the author's own contribution
Transparency and reproducibility	The reader can see what was done, what information was used and how conclusions were reached (Munafò et al., 2017).	Protocols, scripts and data statement; FAIR practice where appropriate
Presentation and organisation	Logical sequencing, informative headings, consistent terminology, readable tables and accurate figures aid access.	Labelled, cross-referenced visuals
Ethics and integrity	The report avoids plagiarism, fabrication, falsification, deceptive image manipulation and misrepresentation of authorship; permissions, consent and ethical approvals are reported accurately.	Approval identifiers; declarations; acknowledged sources

6. Discipline-specific expectations

Table 6 summarises evidence and quality features that assessors should expect in different project areas. It is indicative rather than exhaustive.

Table 6. Discipline-specific evidence and quality features.

Discipline / project area	Evidence and quality features to consider
Chemistry and materials science	Chemical identities and grades, quantities, reaction conditions, apparatus, safety, analytical characterisation, controls and reproducibility.
Physics and mathematics	Definitions, assumptions, derivations, units, mathematical validity, measurement uncertainty, proof quality and computational verification.
Engineering and technology	User or system requirements, design rationale, calculations, drawings, specifications, testing, safety and performance against criteria.
Computer science and IT	Problem definition, architecture, algorithms, code documentation, test cases, datasets, security and performance evaluation.
Biotechnology and life sciences	Biological materials, protocols, controls, sample characteristics, biosafety, statistical analysis and relevant ethical approval.
Medicine and health sciences	Appropriate study design, participant protection, consent, ethics review, clinical or observational definitions and discipline-specific reporting guidance.
Agriculture and environmental sciences	Site and seasonal context, sampling strategy, field conditions, instruments, environmental measurements and statistical interpretation.
Management, commerce and economics	Research framework, sampling, survey or interview instruments, assumptions, financial or economic methods and contextual interpretation.
Education and social sciences	Theoretical framework, participant selection, validated or justified instruments, reflexivity where relevant, qualitative and quantitative analysis, and confidentiality.
Arts and humanities	Primary and secondary sources, interpretive framework, contextual accuracy, critical argument, provenance and acknowledgement of creative material.

Reporting recommendations should be selected according to the design of the work. The EQUATOR Network maintains a library of reporting guidelines for many health-research designs (EQUATOR Network, n.d.; Simera et al., 2010); these are valuable where relevant but should not be applied indiscriminately to unrelated project types. Table 7 lists examples. For computational projects, Sandve et al. (2013) offer practical rules, including keeping track of how every result was produced, avoiding manual data-manipulation steps and, where possible, providing public access to scripts and results.

Table 7. Examples of reporting guidelines by study design (mainly health research; consult the EQUATOR library for current versions).

Study design	Examples of reporting guidance
Randomised trials	CONSORT
Observational studies	STROBE
Systematic reviews	PRISMA 2020 (Page et al., 2021)
Animal research	ARRIVE
Qualitative research	SRQR; COREQ
Economic evaluations	CHEERS
Quality-improvement studies	SQUIRE
Case reports	CARE
Narrative reviews	No PRISMA-equivalent reporting guideline; SANRA is an appraisal scale (Baethge et al., 2019)

7. Tables, figures, graphs and technical illustrations

Visual material can clarify complex information, summarise comparisons and make results easier to interpret. Each table or figure should have a descriptive title, a sequential number and an explicit connection to the text. Units, abbreviations, sample sizes and explanatory notes should be supplied where needed. Figures should be legible, colour choices should remain distinguishable for readers with

colour-vision deficiency, and visual choices should not exaggerate or conceal patterns. Table 8 matches common formats to their purpose and typical pitfalls.

Table 8. Visual formats, appropriate uses and common pitfalls.

Visual format	Appropriate use	Common pitfall
Table	Detailed values, characteristics, specifications and comparisons.	Too many columns; missing units
Bar chart	Comparison among discrete categories or groups.	Used to summarise small-sample continuous data, hiding the distribution
Line graph	Change over time or across an ordered experimental variable.	Joining unordered categories; truncated axes
Scatter plot	Relationship between two quantitative variables.	Implying causation; over-plotting
Histogram	Distribution of a continuous variable.	Arbitrary bin width
Flowchart	Sequence of project stages, decision pathways or procedures.	Ambiguous arrows; too many levels
Gantt chart	Planned activities and project timeline.	Unrealistic durations; no milestones
Schematic / technical drawing	Mechanisms, system architecture, apparatus, designs and workflows.	Missing scale, legend or labels

The choice of format affects what a reader can verify. In a systematic review of research articles in leading physiology journals, most papers presented continuous data in bar or line graphs that show only summary statistics, and few used scatterplots, box plots or histograms that reveal the distribution (Weissgerber et al., 2015). Figure 4 illustrates the problem with simulated data: three groups with identical means and standard deviations are indistinguishable in a bar graph but clearly different when individual observations are shown. The same transparency principle applies to statistical reporting: the American Statistical Association cautions that conclusions should not rest on whether a p-value passes a threshold alone, and that full reporting and transparency are essential (Wasserstein & Lazar, 2016).

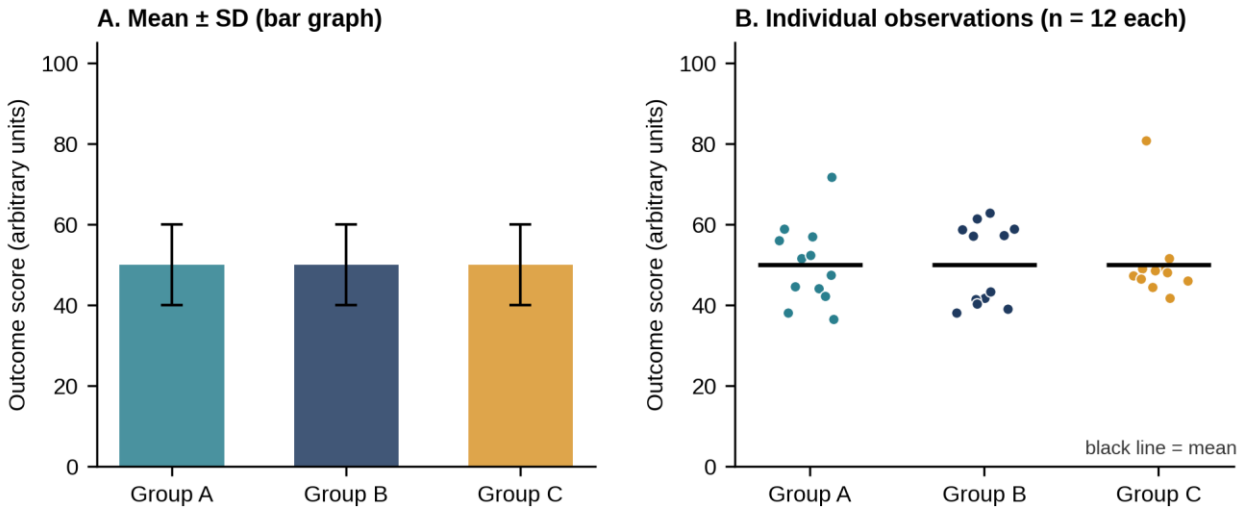


Figure 4. Why show the data? Simulated data for illustration only: three groups (n = 12 each) were constructed to have identical means (50) and standard deviations (10). (A) A bar graph of mean ± SD cannot distinguish them. (B) Individual observations reveal a roughly symmetric spread (Group A), two clusters (Group B) and a single high outlier (Group C).

8. Academic writing and document presentation

Academic writing should be precise, coherent, objective and appropriate to the discipline. Technical terminology should be used accurately and defined when necessary. Authors should avoid unsupported claims, unnecessary repetition, exaggerated conclusions and unexplained abbreviations. The report

should be proofread for spelling, grammar, consistency of units, numbering and cross-references. The settings in Table 9 are general recommendations only; institutional instructions and the journal's current author guidelines take precedence.

Table 9. Suggested presentation settings for a project report (institutional or journal rules take precedence).

Element	Suggested presentation
Typeface	Times New Roman or another font specified by the institution or journal.
Main title	14–16 pt, bold; concise and informative.
Chapter headings	Approximately 14 pt, bold.
Subheadings	Approximately 12 pt, bold.
Main text	Approximately 12 pt.
Line spacing	1.5 or double, according to the applicable instructions.
Margins	Approximately 1 inch, unless otherwise specified.
Alignment and pagination	Consistent alignment and sequential page numbering.
Tables and figures	Sequential numbering, clear captions, units and source acknowledgements.
References	One recognised citation style used consistently.

9. Research ethics and academic integrity

Integrity is a core quality requirement, not an optional administrative addition. Plagiarism includes presenting another person's words, ideas, data, images or other intellectual contributions as one's own without adequate acknowledgement. Authors should cite sources, mark direct quotations appropriately, paraphrase accurately, obtain permissions when required and retain relevant records of their work. The European Code of Conduct for Research Integrity provides a framework for self-regulation that applies across all scientific and scholarly disciplines and research settings (ALLEA, 2023).

Fabrication means inventing data or results; falsification involves manipulating research materials, processes or data so that the research record is inaccurately represented. Both undermine trust, and they are not purely hypothetical. In a systematic review and meta-analysis of survey data, Fanelli (2009) found that a pooled 1.97% of scientists admitted having fabricated, falsified or modified data or results at least once, whereas 14.12% reported that colleagues had falsified data (Figure 5). Because such surveys ask sensitive questions, the author considered these figures likely to be conservative. The surveys concern professional researchers rather than students, but they show why record keeping, supervision and transparent reporting are built into research practice.

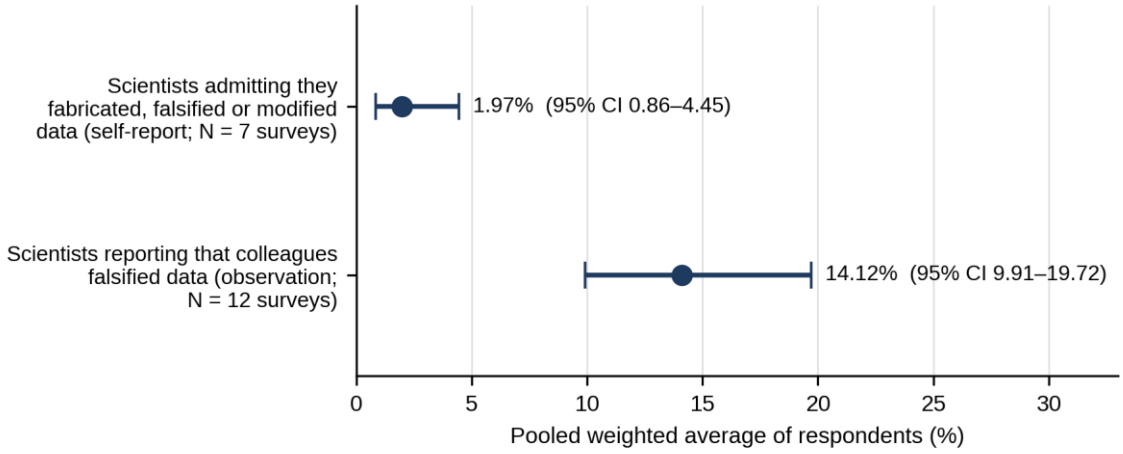


Figure 5. Pooled estimates of research misconduct from survey data. Re-plotted from the summary statistics reported by Fanelli (2009): points are pooled weighted averages; bars show 95% confidence intervals. The same study reported that up to 33.7% of respondents admitted other questionable research practices and up to 72% reported them in colleagues.

Images should not be altered in ways that misrepresent evidence. Similarity-detection percentages are screening indicators, not automatic proof of plagiarism; matches require contextual examination. Projects involving human participants, identifiable personal information, animals or sensitive institutional data should comply with applicable laws, institutional policies and ethical-review requirements, and the ICMJE Recommendations address the protection of research participants (ICMJE, 2024). The report should state the approving committee and approval identifier when approval was required and obtained, and describe consent and confidentiality procedures where relevant. Authorship should reflect substantive scholarly contribution; other assistance should be acknowledged transparently.

Publication-ethics frameworks apply to journals as well as authors. The Committee on Publication Ethics (COPE) published a new Code of Conduct for its members in July 2026, replacing its earlier Core Practices (COPE, 2026); journals that cite COPE standards in their policies should therefore refer to the current document.

10. Responsible use of digital tools and artificial intelligence

Word processors, spreadsheets, statistical packages, reference managers, simulation platforms, programming environments and digital repositories can improve the efficiency and quality of project preparation. Generative AI may assist with brainstorming, language editing, outlining, explanation of concepts or selected coding tasks. However, AI-generated output can contain factual errors, fabricated citations, faulty calculations, biased summaries or text that does not accurately represent the underlying evidence.

The risk to references is measurable. Walters & Wilder (2023) asked GPT-3.5 and GPT-4 to write short literature reviews on 42 topics and checked all 636 resulting citations: 55% of GPT-3.5 citations and 18% of GPT-4 citations were fabricated, and 43% and 24% respectively of the real citations contained substantive errors (Figure 6). These figures describe the model versions tested in 2023 and should not be read as current error rates; the lesson is that every AI-assisted reference must be checked against a primary record, such as a publisher page or DOI resolver, before it is used.

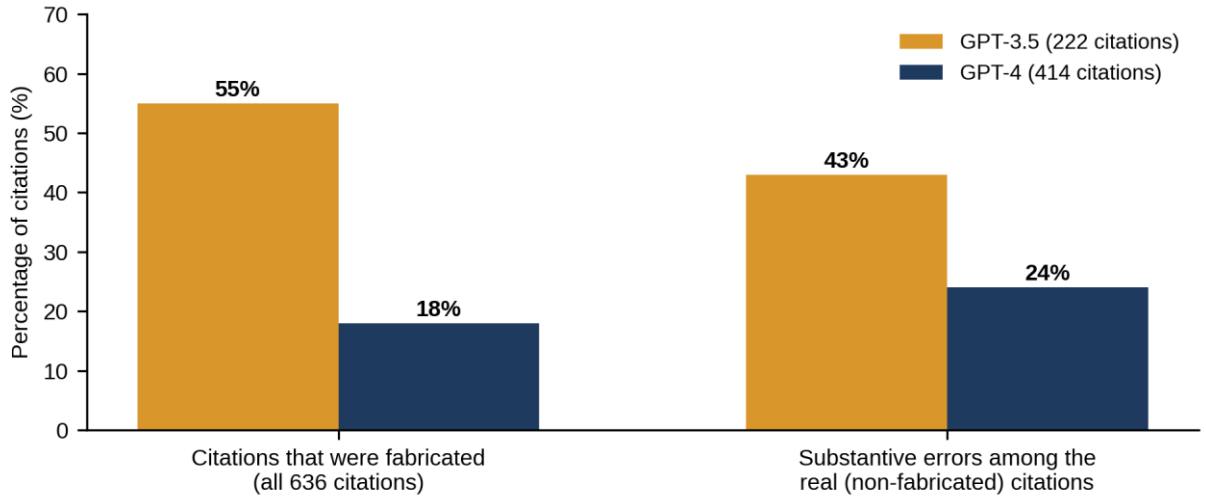


Figure 6. Fabricated and erroneous bibliographic citations in AI-generated literature reviews. Re-plotted from Walters and Wilder (2023): 84 short papers on 42 topics, 636 citations in total (222 from GPT-3.5 and 414 from GPT-4). Results apply to the model versions tested in 2023.

Journal and publisher policies converge on four principles. First, chatbots should not be listed as authors, because they cannot be responsible for the accuracy, integrity and originality of the work (ICMJE, 2024; COPE, 2023). Second, authors should disclose, in the manuscript and cover letter, whether and how AI-assisted technologies were used (ICMJE, 2024). Third, humans remain responsible for all submitted material and should review AI output carefully, because it can be authoritative-sounding yet incorrect, incomplete or biased (ICMJE, 2024). Fourth, confidential, personal or unpublished information should not be entered into external AI services unless permitted by applicable

policies and data-protection requirements. Figure 7 turns these principles into a decision pathway, and Table 10 gives examples.

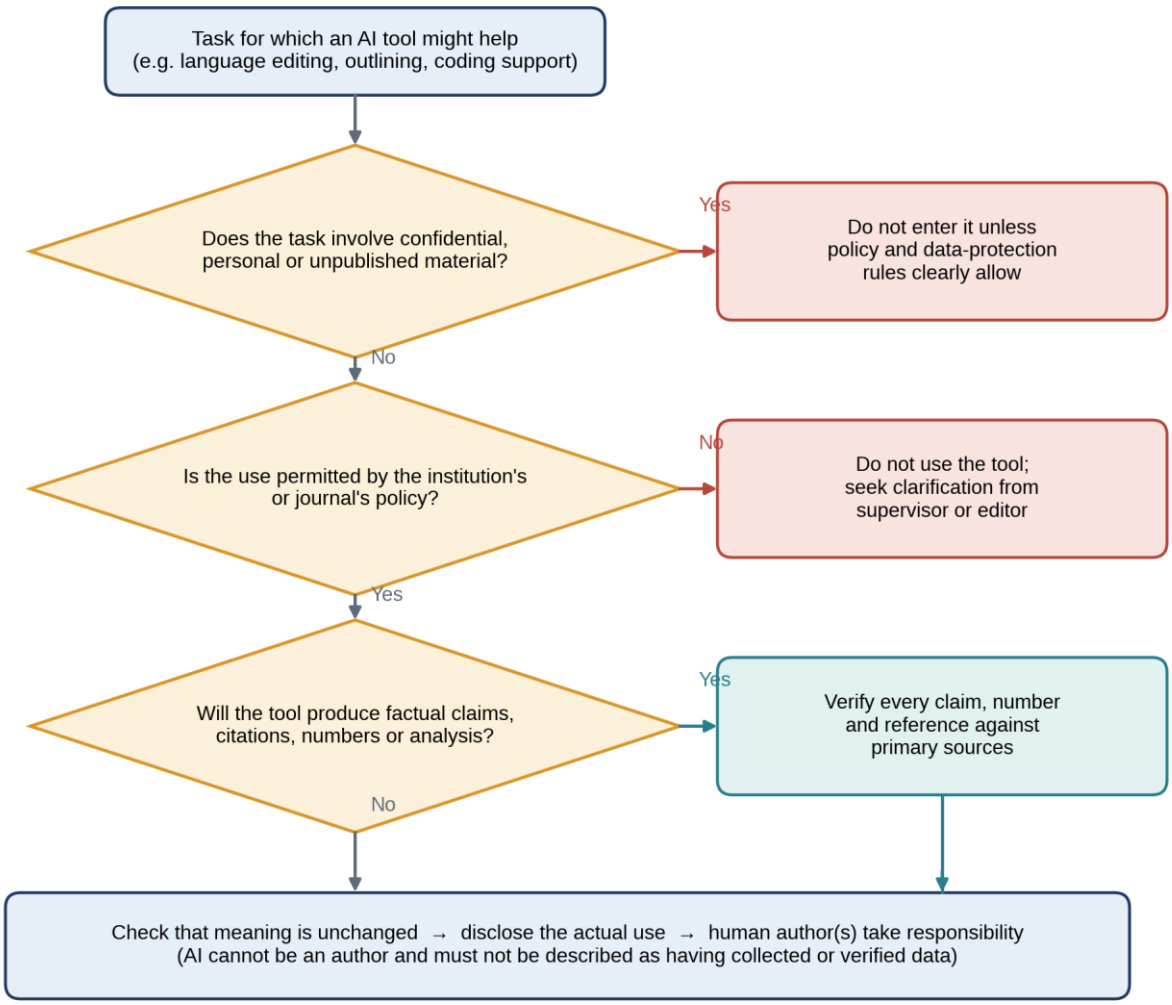


Figure 7. A decision pathway for using AI tools in project preparation. The pathway is a practical aid derived from the policy principles discussed in the text; institutional and journal policies take precedence.

Table 10. Examples of AI-related uses and the conditions that apply (subject to institutional and journal policy).

Use	Status	Conditions
Language editing of the author's own text	Generally acceptable	Check that meaning and technical terms are unchanged; disclose according to policy.
Brainstorming, outlining, explaining concepts	Acceptable with care	Verify every factual statement; do not present output as findings; disclose.
Coding assistance	Acceptable with care	Test and document the code; the author remains responsible for correctness; disclose.
Generating or "completing" references	High risk	Check each entry against a primary record (Walters & Wilder, 2023).
Producing data, results or images presented as real observations	Not acceptable	Constitutes fabrication.
Entering confidential, personal or unpublished data into external tools	Not permitted unless policy allows	Requires explicit permission and data-protection compliance.
Listing an AI tool as an author	Not acceptable	AI tools cannot take responsibility for the work (ICMJE, 2024; COPE, 2023).

Where AI has been used, disclosure should be specific and truthful. A possible statement is: "Artificial intelligence tools were used for [state the actual purpose, such as language refinement, outline development or coding assistance]. The author(s) reviewed and verified the relevant output and take responsibility for the accuracy, originality, interpretation and integrity of the final work." The wording should be modified to describe actual use; it must not imply that AI performed experiments, collected data or verified results when it did not.

11. Proposed quality-assessment framework

A transparent rubric can help supervisors and examiners provide consistent, constructive feedback. Reviews of the rubric literature suggest that rubrics can improve the consistency of scoring and can support learning, although the evidence for learning gains is not uniform and depends on how rubrics are designed and used (Jonsson & Svingby, 2007; Panadero & Jönsson, 2013; Reddy & Andrade, 2010). The 100-point framework in Table 11 and Figure 8 is proposed for educational use. It is not a validated psychometric instrument, a universal grading standard or a substitute for discipline-specific criteria, and institutions may adjust the weights to match learning outcomes and project type.

Table 11. Proposed 100-point assessment framework for academic project reports (unvalidated).

Criterion	Weight	Domain	Key assessment question
Relevance and significance of topic	5	Problem and foundation	Does the report explain why the work matters and for whom?
Clarity and feasibility of objectives	10	Problem and foundation	Are the objectives specific, feasible and used to structure the work?
Literature review and theoretical foundation	10	Problem and foundation	Does the review compare and synthesise sources and justify the gap?
Methodology and research design	15	Investigation	Are methods appropriate, justified and described well enough to evaluate or repeat?
Data collection, documentation and accuracy	10	Investigation	Are data or outputs recorded and documented, with uncertainty and exclusions reported?
Results, analysis and interpretation	15	Analysis and contribution	Are results correctly analysed and interpreted, with alternative explanations considered?
Originality and independent contribution	10	Analysis and contribution	Is the author's own contribution clear and substantive?
Conclusions and recommendations	5	Analysis and contribution	Do conclusions answer the objectives and stay within the evidence?
Writing quality and organisation	5	Communication	Is the writing clear, accurate and logically organised?
Tables, figures and technical presentation	5	Communication	Are visuals accurate, legible, labelled and cited in the text?
References and citation accuracy	5	Communication	Are citations complete, consistent and verifiable?
Ethics and academic integrity	5	Integrity	Are approvals, consent, permissions, authorship and AI use reported accurately?
TOTAL	**100**		



Figure 8. Proposed assessment weights by criterion, grouped into five domains. Domain subtotals: Problem and foundation 25; investigation 25; analysis and contribution 30; communication 15; integrity 5.

The weights should not be applied identically to every project. Table 12 indicates where assessors may reasonably shift emphasis by project type. These shifts are the review's judgements, intended as starting points for institutional calibration, not empirically derived values.

Table 12. Indicative shifts in emphasis by project type (relative to the baseline weights in the rubric; unvalidated).

Project type	Criteria that may warrant greater weight	Criteria that may warrant less weight
Experimental	Methodology; data collection and accuracy	Literature review
Engineering / design	Methodology (design rationale and testing); results (performance against requirements)	Originality, where adaptation of existing designs is legitimate
Computational	Methodology (validation); documentation of code and data	Data collection, where public datasets are used
Survey-based	Methodology (sampling and instrument); ethics	Originality of method
Case study	Results, analysis and interpretation; literature and theoretical framing	Volume of primary data
Literature-based	Literature review and synthesis; originality as synthesis; transparency of the search	Data collection (but search method must still be explicit)
Field-based	Data collection; methodology (site and sampling)	Literature review
Creative / design practice	Originality; rationale and critical evaluation; presentation	Data collection, where evaluation rather than measurement is central

Suggested performance bands are shown in Table 13. They are illustrative and should be aligned with institutional regulations.

Table 13. Illustrative performance bands.

Score	Suggested descriptor	Interpretation
90–100	Outstanding	Excellent work with strong evidence, sound methods and clear scholarly communication.
80–89	Very good	Strong work with relatively minor limitations.
70–79	Good	Generally sound work with identifiable areas for improvement.
60–69	Satisfactory / acceptable	Meets basic expectations but has material weaknesses.
50–59	Needs substantial improvement	Important deficiencies require correction.
Below 50	Unsatisfactory	Does not adequately meet the specified learning or quality requirements.

A serious breach of research integrity should be handled under the applicable institutional or journal policy and should not be treated as a weakness that can simply be offset by marks in other categories; in this sense integrity acts as a gate that precedes scoring, even though it also carries a modest weight for the quality of reporting. Feedback should identify strengths, methodological limitations, errors, missing evidence and realistic opportunities for improvement; feedback has a powerful but variable influence on learning, and its effect depends on how it is given (Hattie & Timperley, 2007).

12. Common deficiencies and corrective measures

Table 14 links frequent weaknesses to their consequences, to a recommended response and to the rubric criterion under which they would normally be assessed.

Table 14. Common deficiencies, consequences and corrective measures.

Common deficiency	Potential consequence	Recommended response	Rubric criterion
Vague or excessive objectives	Unfocused scope and weak evaluation	Define specific, feasible objectives.	Objectives
Descriptive rather than critical literature review	Weak rationale and limited synthesis	Compare sources and identify gaps or disagreements.	Literature review
Insufficient method detail	Difficult to assess or reproduce the work	Document procedures, materials, sampling and analysis.	Methodology
Incomplete or selectively reported data	Biased or unsupported conclusions	Maintain records and explain exclusions or missing data.	Data collection
Inappropriate statistical analysis	Misleading interpretation	Use methods suited to the design and data; report fully.	Results and analysis
Unverified references or DOI details	Reduced traceability and credibility	Check bibliographic records against reliable sources.	References
Poorly labelled figures and tables	Ambiguity and reduced readability	Use captions, units, legends and in-text references.	Tables and figures
Unsupported conclusions	Claims exceed the available evidence	Link each conclusion to findings and acknowledge limitations.	Conclusions
Undisclosed or unverified AI assistance	Integrity and accuracy concerns	Verify outputs and disclose actual use transparently.	Ethics and integrity

13. Recommendations for students, supervisors and institutions

13.1 Students and project authors

Planning is the most controllable determinant of project quality. Figure 9 illustrates a 24-week plan with explicit milestones and supervisor review points; durations will differ by project and programme.

- Select a relevant and feasible topic and agree on its scope at the outset.
- Prepare a work plan with milestones, resources and risk considerations.

- Define objectives and select methods that can answer them; check the alignment of problem, objectives, methods, results and conclusions (Figure 3).
- Use credible academic sources and maintain accurate reference records.
- Keep dated records of experiments, fieldwork, interviews, calculations, code and data processing.
- Present negative, unexpected and inconclusive findings honestly.
- Check the report for accuracy, clarity, originality, ethical compliance and consistency before submission, and verify every reference.

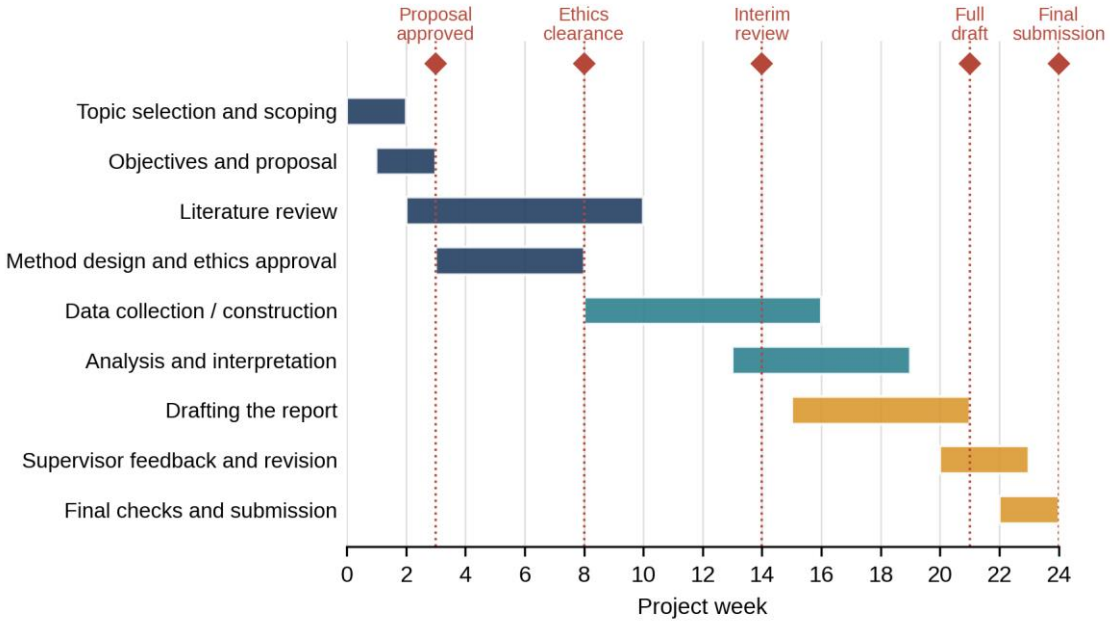


Figure 9. Illustrative 24-week project timeline with milestones. This is a template for planning, not empirical data; durations should be adapted to the project, discipline and programme.

13.2 Supervisors and project guides

- Explain expected learning outcomes, scope and assessment criteria at the start.
- Guide topic selection and methodological decisions without displacing the student's intellectual responsibility.
- Schedule progress reviews and identify problems early.
- Check whether the methods, data and conclusions are mutually consistent.
- Provide constructive feedback on writing, evidence, ethics and presentation.

13.3 Educational institutions

- Publish clear, accessible and discipline-sensitive project guidelines.
- Provide training in research methods, academic writing, referencing and data management.
- Provide access to appropriate library resources, software and laboratory or field facilities.
- Use transparent assessment rubrics and provide feedback.
- Establish clear policies for research ethics, plagiarism, authorship and AI use.

14. Recommendations for the 'Project Reports' (PR) Journal of ESRA Publications

The 'Project Reports' (PR) Journal can support good academic practice by publishing well-prepared project reports from a broad range of academic streams. A multidisciplinary scope should be accompanied by discipline-sensitive editorial assessment: the journal should apply common standards of clarity, originality, transparency and integrity while allowing the appropriate structure and evidence

to differ between project types. Journals that wish to align their policies with recognised publication-ethics standards may refer to COPE's Code of Conduct for Members (COPE, 2026) and its position on authorship and AI tools (COPE, 2023).

- Accept submissions from science, engineering, technology, medicine and health sciences, agriculture, management, commerce, education, social sciences, arts, humanities and interdisciplinary fields, subject to the journal's declared scope.
- Require a clear statement of the project context, objectives, methods, principal outputs or findings, limitations and conclusion.
- Use an editorial checklist to verify completeness, scope, originality screening, reference quality, ethical declarations and figure and table attribution.
- Use reviewers with subject expertise and assess each manuscript against criteria appropriate to its discipline and academic level.
- Require disclosure of funding, conflicts of interest, relevant ethics approval, consent where applicable, data availability where appropriate and AI assistance.
- Distinguish student project reports from review articles, research articles, technical notes and other article types in the submission categories.
- Encourage authors to develop particularly strong projects into further scholarly outputs only when the additional work meets the relevant standards for a distinct publication.

15. Proposed companion publication and practical author-guideline resource

A useful next step for PR would be to publish a separate operational document entitled "Guidelines for Preparing and Submitting Academic Project Reports to the 'Project Reports' (PR) Journal, ESRA Publications." The present narrative review explains the rationale and quality principles; the companion document would translate those principles into instructions that authors, supervisors and editors can apply during preparation, submission and assessment.

15.1 Suggested contents of the companion guideline

- Journal scope and eligible project categories, including the academic streams covered by PRJ.
- Article categories and definitions, clearly distinguishing project reports from narrative reviews, research articles, case studies and technical reports.
- Manuscript preparation instructions, including title page, abstract, keywords, main text, references, tables, figures and appendices.
- Discipline-specific structural options for experimental, engineering/design, computational, survey-based, field-based, case-study and literature-based projects.
- Requirements for methods, data presentation, statistical analysis, software and code, and supplementary materials, where relevant.
- Research ethics, consent, permissions, authorship, acknowledgements, funding and conflict-of-interest declarations.
- Plagiarism screening, citation accuracy, image integrity and responsible AI-use disclosure.
- Peer-review and editorial assessment procedures, including the proposed quality rubric as a guide rather than an inflexible universal score.
- Revision, proofreading, production and post-publication correction procedures.

15.2 Proposed PRJ pre-submission checklist

Authors may use Table 15 before submission; editors may use it for initial screening.

Table 15. Proposed PR pre-submission checklist (tick each item when satisfied or not applicable).

✓	Checklist item
Scope and type	
☐	Is the manuscript within the stated scope of PRJ?
☐	Is the article type correctly identified (project report, narrative review, research article or other category)?
☐	Does the title accurately describe the project?
Content quality	
☐	Are the aims, objectives and scope clearly stated?
☐	Is the literature review relevant and appropriately referenced?
☐	Are the methods sufficiently detailed and suitable for the project?
☐	Do the discussion and conclusions follow from the evidence?
☐	Are limitations acknowledged?
Evidence and presentation	
☐	Are results, outputs, tables and figures accurate, legible and cited in the text?
☐	Are all sources cited in the text included in the reference list, and vice versa?
☐	Have DOI links and bibliographic details been checked where available?
☐	Have permissions and acknowledgements been obtained for third-party material?
Ethics and declarations	
☐	Are ethics approval, consent and confidentiality addressed where applicable?
☐	Are funding, conflicts of interest and author contributions disclosed where required?
☐	Has any AI assistance been accurately disclosed in accordance with journal policy?
Final checks	
☐	Has the manuscript been checked for spelling, grammar, formatting and consistency?
☐	Are appendices, supplementary files and data statements included where applicable?

15.3 Suggested editorial workflow for PR

A practical workflow (Figure 10) may include scope and completeness screening; technical checks for references, figures, declarations and similarity; editor assignment based on subject expertise; peer review using discipline-appropriate criteria; author revision and response to reviewer comments; a final editorial decision; and copyediting, proof approval and publication. The workflow should be publicly described and applied consistently. Editorial screening does not replace peer review, and a numerical rubric should inform rather than dictate editorial judgement.

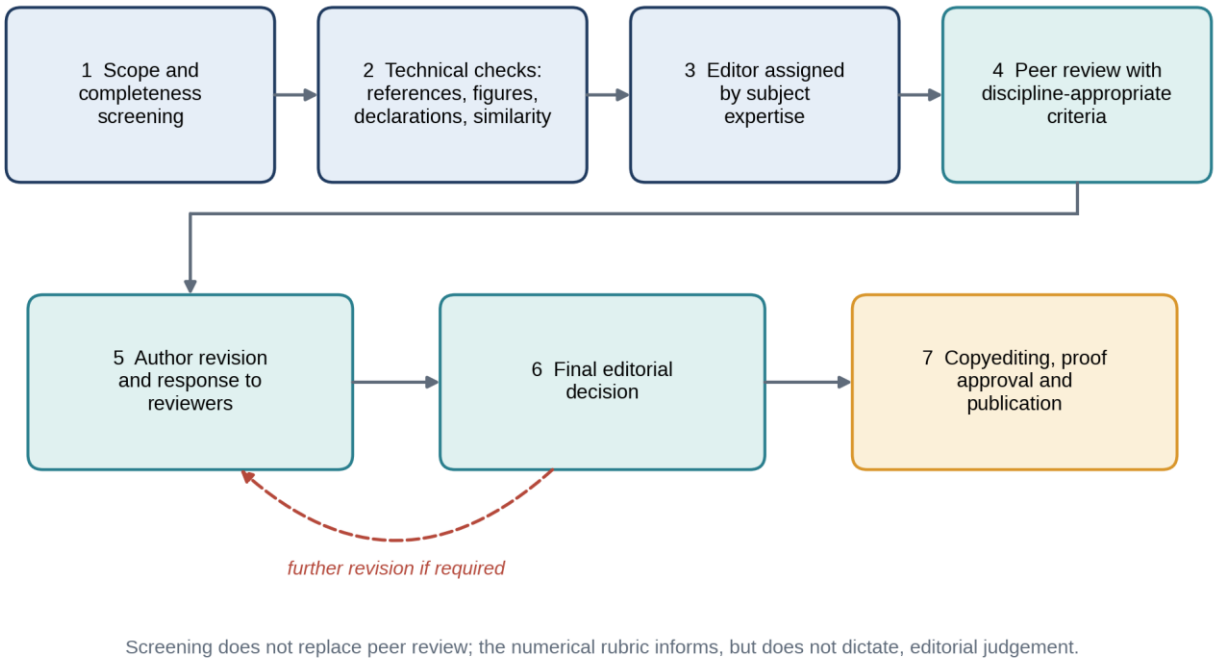


Figure 10. Suggested editorial workflow for PR. This is a proposal for consideration by the journal and has not been tested.

16. Future perspectives

Project-report preparation is likely to evolve with digital scholarship, open research, interdisciplinary education and AI-assisted workflows. Electronic reports may include supplementary datasets, interactive visualisations, software demonstrations and links to supporting materials. Where data are shared, the FAIR principles of findability, accessibility, interoperability and reusability offer a useful framework for data stewardship, subject to privacy, consent, intellectual-property and security constraints (Wilkinson et al., 2016). More broadly, proposals to improve reproducibility emphasise methods, reporting and dissemination, reproducibility, evaluation and incentives (Munafò et al., 2017); each has a counterpart at the scale of a student project.

Competency-based assessment may place greater emphasis on problem-solving, innovation, communication, practical performance and reflective learning rather than report length alone. Interdisciplinary projects addressing sustainability, public health, food systems, digital transformation and climate-related challenges will require students to combine methods and evidence from more than one field. AI tools may support some tasks, but transparent human oversight and accountability will remain essential. Empirical testing of the rubric and checklist proposed here, including inter-rater reliability and student and supervisor perceptions, is an obvious priority for future work.

17. Limitations of this review

This article is a narrative review and does not claim to provide an exhaustive or systematic account of all project-report standards used by universities and professional bodies. The literature was identified by targeted rather than systematic searching (Table 1), so relevant sources may have been missed. Institutional requirements vary substantially, and the proposed assessment rubric, emphasis adjustments, PR checklist and editorial workflow have not been empirically validated; they should be treated as adaptable recommendations and refined through consultation with subject specialists, educators, students, reviewers and editors. The empirical illustrations come from studies with their own limitations: the misconduct estimates derive from self-reported surveys of researchers, and the citation-fabrication figures apply to AI models tested in 2023. Many reporting guidelines cited are oriented to health research. The review does not replace discipline-specific reporting standards, legal requirements or institutional ethics policies.

18. Conclusions

Effective academic project reports connect a meaningful problem with clearly stated objectives, appropriate methods, credible evidence, critical interpretation and proportionate conclusions. Their quality depends on more than presentation: methodological suitability, data accuracy, originality, transparency, ethical conduct and discipline-specific reasoning are fundamental. A flexible structure enables the report to reflect the nature of the project, while common standards of clarity, traceability and integrity remain applicable across academic fields.

The proposed assessment rubric and preparation workflow offer practical starting points for students, supervisors and examiners. For PR, ESRA Publications, a multidisciplinary editorial policy supported by a separate author-guideline document, a pre-submission checklist and transparent review procedures could help authors understand expectations and assist editors in evaluating work consistently. The companion guideline should be developed as an operational journal resource and updated periodically in consultation with relevant academic disciplines. Ultimately, a high-quality project report should be a credible record of learning, investigation, critical thinking and scholarly achievement.

Declarations

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Conflict of interest

The author declares no known competing financial or non-financial interests relevant to this manuscript. This statement should be confirmed and amended by all authors, if applicable.

Ethics approval and consent to participate

Not applicable. This narrative review does not report research involving human participants, animals or identifiable personal data.

Data availability

No new datasets were generated or analysed for this narrative review. Figure 5 and Figure 6 re-plot summary statistics reported in the cited studies. Figure 4 uses simulated data generated solely for illustration; Figure 9 is an illustrative template.

Author contributions

Conceptualisation, preparing draft, reviewing, editing of the manuscript.

AI-use disclosure

Generative AI tools were used in preparing and revising this manuscript, including drafting and editing text, generating figures and assisting with reference checking The author reviewed, edited and verified the content, including all references and interpretations, and remain responsible for the accuracy, originality and integrity of the final manuscript.

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