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Volume XX Issue X Year XXXX
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HIPOTENUSA: JOURNAL OF MATHEMATICAL SOCIETY
DETAILED MANUSCRIPT TEMPLATE & AUTHOR GUIDELINES

AUTHOR GUIDANCE: This document is a detailed author-facing template. Blue-shaded table headers and gray guidance text are instructional aids. Replace bracketed placeholders and delete all AUTHOR GUIDANCE / Example text before final submission.

How to Use This Template

Template Element	Required Author Action
Bracketed text [...]	Replace with manuscript content.
AUTHOR GUIDANCE	Read and delete before submission.
Example	Use only as a writing model; delete before submission.
Optional section	Delete when not applicable.
Tables/Figures	Renumber sequentially and cite in the narrative.

PRE-SUBMISSION REQUIREMENTS

AUTHOR GUIDANCE: Use this section as a quality-control guide. It is not part of the final published manuscript.

- Manuscript language: academic English, clear and grammatically edited.
- Core article sequence: Title and authors → Abstract → Keywords → INTRODUCTION → METHODS → RESULTS AND DISCUSSION → CONCLUSION → ACKNOWLEDGMENTS (when applicable) → REFERENCES.
- The published examples use a combined RESULTS AND DISCUSSION section.
- Use author–date in-text citations and prepare the reference list consistently in APA 7th edition.
- Every table and figure must be numbered consecutively, have a descriptive title/caption, and be discussed in the text.
- Do not paste unreadable raw statistical-software output. Reconstruct tables for publication.
- Ensure the research objective, method, results, discussion, and conclusion are logically aligned.
- Avoid causal claims when the research design does not support causal inference.
- State ethical approval/informed consent/data protection when human participants are involved, if applicable.

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[ARTICLE TITLE]

AUTHOR GUIDANCE: Write a specific, informative English title that reflects the central construct/topic, population/context, and/or method when needed. Avoid overly broad claims, unexplained abbreviations, and unnecessary wording. Use title case consistently.

Author Name[1]*, Author Name[2], Author Name[3], Author Name[4]

AUTHOR GUIDANCE: Use authors' publication names consistently. Mark the corresponding author with an asterisk. Check that superscript affiliation numbers correspond correctly.

[1] Department/Study Program, Faculty, University, Country

[2] Department/Study Program, Faculty, University, Country

[3] Department/Study Program, Faculty, University, Country

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DOI: [to be assigned by editor]

AUTHOR GUIDANCE — DOI and editorial dates are normally completed by the editorial team. Authors should not fabricate these metadata.

Article submitted: [Month DD, YYYY]
Article reviewed: [Month DD, YYYY]
Article published: [Month DD, YYYY]

Abstract

AUTHOR GUIDANCE — Write one self-contained paragraph. A strong abstract normally contains: (1) problem/context, (2) objective, (3) design/method, (4) sample/data source, (5) key analysis, (6) principal results with essential quantitative values where meaningful, and (7) conclusion/contribution. Avoid a literature review inside the abstract and avoid claims stronger than the design permits.

Abstract Component	*What to Write*	*Common Problem to Avoid*
Background / problem	*1–2 sentences identifying the substantive problem.*	*Too much general background.*
Objective	*State exactly what the study investigates/develops/reviews.*	*Objective not aligned with results.*

Method	*Design, participants/data, instrument/procedure, analysis.*	*Vague phrase such as 'quantitative method' only.*
Results	*Report the most important findings, not every test.*	*Listing many p-values without meaning.*
Conclusion / contribution	*State what the findings mean for mathematics education.*	*Overclaiming causality/generalizability.*

[Write the complete abstract here as one paragraph.]

Keywords: [keyword 1], [keyword 2], [keyword 3], [keyword 4], [keyword 5]

AUTHOR GUIDANCE: Use approximately 4–5 precise terms that improve discoverability. Include the main construct/topic and method when useful; avoid simply repeating long phrases from the title.

INTRODUCTION

AUTHOR GUIDANCE: The introduction should move from broad context to the specific research problem, synthesize relevant literature, identify a defensible gap, state the novelty/contribution, and end with the research objective/question(s). Do not turn it into a list of definitions.

Recommended Introduction Architecture

Recommended Flow	Purpose	Author Prompt
1. Context and significance	Establish why the topic matters in mathematics education.	What educational/mathematical problem makes this study necessary?
2. Specific problem	Show the concrete difficulty, limitation, inconsistency, or need.	What is not working, not known, or insufficiently understood?
3. Conceptual/theoretical foundation	Define central constructs through relevant scholarship.	Which theory/concept explains the phenomenon?
4. Prior empirical research	Synthesize patterns, not one-study-per-sentence summaries.	What have previous studies consistently or inconsistently found?
5. Research gap	Identify the unresolved issue supported by the literature.	What exactly is missing and why does it matter?

6. Novelty/contribution	Explain what this study adds beyond a different location/sample.	What new evidence, method, construct integration, design, or context is contributed?
7. Objective/RQ/hypothesis	State the study's precise purpose.	What will be answered/tested/developed?

Context and Problem

[Introduce the research context and establish the educational/mathematical importance of the topic.]

[Narrow the discussion to the specific empirical, theoretical, instructional, technological, or measurement problem.]

AUTHOR GUIDANCE: Use evidence to support problem statements. Avoid unsupported claims such as 'students are low' or 'technology is effective' without relevant evidence.

Theoretical / Conceptual Foundation

[Explain the principal concepts or theoretical framework needed to understand the study.]

AUTHOR GUIDANCE: Prioritize theories that directly explain the variables/processes under investigation. Definitions alone are not a theoretical framework.

Previous Studies and Research Gap

[Synthesize relevant previous studies, showing patterns, agreements, disagreements, methodological limitations, or underexplored areas.]

Example: Previous studies have established X and Y; however, evidence remains limited regarding Z, particularly when ... . This unresolved issue matters because ... .

AUTHOR GUIDANCE: A research gap should be evidence-based. A different institution, city, or sample is usually not sufficient novelty by itself.

Novelty and Contribution

[State the specific scientific contribution of this study to mathematics education.]

AUTHOR GUIDANCE: Distinguish novelty from objective. Novelty explains what is added; the objective explains what the study does.

Research Objective / Questions / Hypotheses

[State the research objective in a direct sentence.]

[RQ1: ...]

[RQ2: ...]

[H1: ...] [Use hypotheses only when appropriate for the design.]

AUTHOR GUIDANCE: The SLR states research questions; empirical studies state objectives and hypotheses as appropriate. Ensure each question/hypothesis is answered later.

METHODS

AUTHOR GUIDANCE: Methods must permit readers to understand exactly how the study was conducted and analyzed. Include only procedures actually performed; do not add aspirational statements.

Research Design

[State the exact research design and justify its suitability for the objective.]

Example: This study employed a quantitative psychometric design to evaluate ... .

AUTHOR GUIDANCE: Examples of design labels: experimental/quasi-experimental, cross-sectional survey, correlational, psychometric, qualitative case study, mixed methods, R&D/development research, design-based research, didactical design research, or systematic literature review.

Setting, Participants, Population, and Sampling

[Describe research setting, target population, sample, inclusion/exclusion criteria, sampling technique, sample-size justification, and relevant participant characteristics.]

Table 1. Participant / Data-Source Reporting Guide

Component	Required Information
Setting	Institution/level/context and relevant location.
Population	Who/what the target population is.
Sample	Number analyzed and important characteristics.
Sampling	Probability/nonprobability technique and selection procedure.
Eligibility	Inclusion/exclusion criteria.
Sample-size rationale	Power analysis, model requirement, saturation logic, or other defensible justification.
Study period	Month/year or data-collection period where relevant.

Variables, Constructs, or Phenomena

[Define each variable/construct/phenomenon operationally and explain how it is represented in the study.]

Table 2. Operationalization of Variables / Constructs

Construct / Variable	Operational Definition	Indicator / Domain	Measurement / Evidence	Source
[X1]	[...]	[...]	[...]	[...]
[X2]	[...]	[...]	[...]	[...]
[Y]	[...]	[...]	[...]	[...]

AUTHOR GUIDANCE: For assessment studies, construct domains and operational indicators should be explicit. For qualitative studies, replace this table with a clear description of focal phenomena and analytic concepts.

Instrument(s) and Measurement Quality

[Describe instrument origin/development/adaptation, number of items/tasks, response format/scoring, administration, and evidence of validity/reliability or trustworthiness.]

- If adapting an existing instrument: identify the source and adaptation/translation procedure.
- If developing an instrument: describe blueprint/specification, expert review, pilot testing, item analysis, and revisions.
- For rating/scoring: describe rubric, rater training, inter-rater agreement/reliability when applicable.
- Do not claim an instrument is 'valid and reliable' without reporting the relevant evidence.

Research Procedure

[Describe the study procedure chronologically so it can be followed or replicated.]

Table 3. Research Procedure (optional)

Stage	Procedure	Output / Data
1	[Preparation / baseline / protocol]	[...]
2	[Implementation / intervention / collection]	[...]
3	[Post-measurement / validation / extraction]	[...]
4	[Analysis / synthesis]	[...]

Data Analysis

[Identify all analyses, assumptions/diagnostics, software and version/packages where relevant, significance level, effect-size/model-fit criteria, and how missing data/outliers were handled if applicable.]

Method-Specific Reporting Guide

Study Type	Minimum Analysis Details to Consider
Quantitative / experimental	Descriptive statistics; measurement quality; assumption checks; primary inferential model; effect size; confidence intervals; multiple-testing strategy where relevant.
Regression / path / mediation	Model specification; coding; assumptions; multicollinearity; coefficients and CIs; indirect-effect method (preferably bootstrap when appropriate); model fit/diagnostics.
Psychometric / assessment	Scoring; item difficulty/discrimination; reliability; dimensionality; local independence; model comparison; item/person parameters; fit; diagnostic interpretation.
Qualitative	Data preparation; coding stages; analytic approach; researcher role; triangulation/member checking/audit trail or other trustworthiness strategy.
R&D / development	Development model/stages; needs analysis; expert validation; revision rules; practicality/usability; effectiveness testing if actually conducted.
SLR	Protocol; RQs; databases; exact search strategy; date range; inclusion/exclusion; duplicate removal; screening; quality appraisal; extraction; synthesis; PRISMA flow.

Ethical Considerations

[State ethical approval/exemption, approval number/date if applicable, informed-consent procedure, confidentiality/anonymity, and data-protection measures.]

AUTHOR GUIDANCE: If no formal ethics review was required, state the applicable institutional basis accurately rather than inventing an approval number.

OPTIONAL METHOD MODULES — KEEP ONLY THE RELEVANT ONE(S)

AUTHOR GUIDANCE: Delete this entire guidance section after selecting the relevant module.

Module A: Systematic Literature Review

- State review objective and RQs.
- Identify databases and justify coverage.
- Report complete search strings/keywords and search date.
- Define publication years, languages, document types, and subject scope.
- Present inclusion and exclusion criteria.
- Explain duplicate removal, title/abstract screening, full-text eligibility, and final inclusion.
- Describe quality appraisal and data-extraction fields.
- Present a PRISMA-style screening flow when appropriate.
- Explain synthesis approach (descriptive, thematic, bibliometric, meta-analysis, etc.).

SLR Table A. Search Strategy

Database	Search String / Keywords	Coverage / Date	Records
[Scopus]	[...]	[...]	[n]
[Google Scholar]	[...]	[...]	[n]

SLR Table B. Eligibility Criteria

Inclusion Criteria	Exclusion Criteria
[Relevant topic/scope]	[Irrelevant topic]
[Publication period]	[Outside period unless justified]
[Eligible source type]	[Ineligible source type]
[Accessible full text]	[Abstract only / incomplete data]

Module B: Quantitative / Experimental / Quasi-Experimental

- Describe groups, assignment/allocation, intervention and comparator.
- Report pretest/baseline information when relevant.
- Identify the primary outcome and primary analysis before supplementary analyses.
- Report assumption checks relevant to the chosen model.
- Report exact n, descriptive statistics, effect sizes and confidence intervals.
- Do not infer baseline equivalence from means alone.

Module C: Psychometric / Assessment

- Define the intended construct and content domains.
- Describe item format, scoring, sample, and administration.

- Report reliability evidence appropriate to the score type.
- Report item-level diagnostics (difficulty, discrimination, distractor functioning as applicable).
- For IRT: justify model, assess dimensionality/local independence, compare model fit, report parameter interpretation and sample-size limitations.

Module D: R&D / DDR / DBR

- Name the development/design framework and identify the stages actually completed.
- Describe needs analysis and the evidence used to define the design problem.
- Explain product/design specifications and revision cycles.
- Report expert validation method, criteria, number/expertise of validators, and decision rules.
- Separate validity/feasibility evidence from effectiveness claims. Do not call a product effective unless effectiveness was actually tested with an adequate design.

Module E: Qualitative / Mixed Methods

- Explain participant/informant selection and adequacy.
- Describe interview/observation/document procedures and recording/transcription.
- Explain coding and theme development with enough detail to audit the analysis.
- Provide trustworthiness procedures.
- For mixed methods, identify design type, priority/timing, integration point, and how qualitative and quantitative strands are connected.

RESULTS AND DISCUSSION

AUTHOR GUIDANCE: The supplied published Hipotenusa examples combine results and discussion under one major heading. Use meaningful subsections based on research questions, constructs, stages, or major findings.

[Finding / Research Question 1]

[Present the evidence for the first major finding. Include appropriate descriptive/inferential results, qualitative evidence, development outputs, or review synthesis.]

Table 4. [Descriptive and/or Inferential Results]

Indicator / Variable	n	Estimate / Mean	Uncertainty / SD / CI	p / Interpretation
[...]	[...]	[...]	[...]	[...]
[...]	[...]	[...]	[...]	[...]

AUTHOR GUIDANCE — Use only columns relevant to the analysis. Report uncertainty (e.g., SD/SE/CI) and effect size where appropriate. Do not rely on significance alone.

[Interpret what the result means substantively.]

[Connect the finding to the theoretical/conceptual framework.]

[Compare with relevant previous studies: agreement, contradiction, or extension.]

[Explain plausible reasons for the pattern, grounded in the study context and evidence.]

[State the contribution/implication of this finding without overgeneralizing.]

[Finding / Research Question 2]

[Repeat the evidence → interpretation → theory → previous research → explanation → contribution pattern.]

[Finding / Research Question 3 / Additional Analysis]

[Present only analyses that answer a research question or materially clarify the findings.]

Figure 1. [Descriptive Caption]

[INSERT HIGH-RESOLUTION FIGURE / MODEL / PRISMA FLOW HERE]

AUTHOR GUIDANCE: Cite the figure in the preceding/following narrative. Make labels readable at publication size. Avoid decorative figures that do not add analytical value.

How to Write the Discussion

Discussion Logic

Step	Question to Answer	Weak Pattern to Avoid
1. Finding	What did the study actually find?	Repeating the entire table.
2. Meaning	What does the finding mean in the research context?	Equating $p < .05$ with practical importance.
3. Theory	How does theory explain or challenge the result?	Adding theory unrelated to the variables.
4. Prior studies	How does the result compare with directly relevant evidence?	Using tangential studies only because results are similar.
5. Explanation	Why might the result differ or converge?	Speculation presented as fact.

6. Contribution	What new insight follows?	Claiming novelty only from location.
7. Boundary	What should not be inferred?	Causal/general claims beyond the design.

LIMITATIONS

[State the main design, sampling, measurement, analytical, or contextual limitations and explain how they affect interpretation.]

AUTHOR GUIDANCE: Limitations should calibrate claims, not invalidate the study. Avoid generic statements such as 'sample is limited' without explaining the consequence.

CONCLUSION

AUTHOR GUIDANCE: The conclusion should answer the research objective directly and synthesize the substantive meaning of the study. Do not simply copy the abstract or reproduce all coefficients/p-values.

Conclusion Element	Recommended Content
Main answer	1–3 sentences answering the research objective.
Key contribution	What the study adds to mathematics education.
Practical/theoretical implication	What readers, educators, researchers, or assessment developers can reasonably do/understand.
Future research	Specific next step derived from limitations/findings, not a generic request for larger samples.

[Write the conclusion here.]

ACKNOWLEDGMENTS

[Acknowledge funding agency, grant scheme/number, institutional assistance, or non-author contributions when applicable.]

AUTHOR GUIDANCE: Delete this section if not applicable. The supplied published SLR article includes an acknowledgments section identifying its funding source.

FUNDING [Optional / if required by journal policy]

[State funder, grant number, and funder's role in study design, data collection, analysis, interpretation, and publication decision.]

CONFLICT OF INTEREST [Optional / if required]

[The authors declare no conflict of interest.]

DATA AVAILABILITY [Optional / if required]

[State where and under what conditions data/materials/code can be accessed, subject to ethical/privacy restrictions.]

AUTHOR CONTRIBUTIONS [Optional / if required]

[Describe author roles consistently, e.g., conceptualization, methodology, analysis, investigation, writing, supervision.]

REFERENCES

AUTHOR GUIDANCE: Format all references consistently in APA 7th edition. Every in-text citation must have a matching reference entry and every reference entry must be cited in the manuscript. Verify bibliographic data and DOI links against the original source.

Journal article: Author, A. A., & Author, B. B. (2025). Title of article in sentence case. Journal Title, 12(3), 123–140. https://doi.org/xxxxx

Book: Author, A. A. (2024). Title of book in sentence case. Publisher.

Chapter: Author, A. A. (2023). Title of chapter. In B. B. Editor (Ed.), Title of book (pp. xx–xx). Publisher. https://doi.org/xxxxx

APA 7 QUICK CHECK

- Use sentence case for article and chapter titles.
- Italicize journal title and volume number; place issue number in parentheses.
- Provide page range/article number when available.
- Present DOI as a URL when available.
- Use a hanging indent for reference entries.
- Check spelling and year consistency between in-text citations and references.
- For 3+ authors in narrative/parenthetical in-text citations, follow APA 7 'et al.' rules.

FINAL AUTHOR SUBMISSION CHECKLIST

AUTHOR GUIDANCE : Complete this checklist before uploading the manuscript. Delete it from the final manuscript unless the editorial office requests it.

Front Matter

☐ Title accurately represents the study and is written in academic English.

☐ Author order, spelling, affiliations, and corresponding-author email are correct.

☐ DOI/editorial dates are not invented by the authors.

☐ Abstract includes objective, method, main findings, and conclusion.

☐ Keywords are specific and searchable.

Introduction

☐ The problem is supported by evidence.

☐ Central constructs are conceptually clear.

☐ Prior literature is synthesized rather than listed.

☐ Research gap is explicit and defensible.

☐ Novelty/contribution is more than a different location/sample.

☐ Objective/RQs/hypotheses are explicit and later answered.

Methods

☐ Research design is named precisely.

☐ Population/sample/data source and selection are clear.

☐ Sample-size adequacy is justified where relevant.

☐ Instrument/protocol and scoring are reproducible.

☐ Validity/reliability/trustworthiness evidence is reported.

☐ Procedure is chronological and complete.

☐ Analysis matches the research questions and data structure.

☐ Software/version/packages are reported when relevant.

☐ Ethical approval/consent/privacy procedures are accurately stated.

Results & Discussion

☐ All research questions/objectives are answered.

☐ Tables/figures are sequentially numbered and cited in text.

☐ No raw unreadable statistical output is pasted.

☐ Results include relevant uncertainty/effect sizes where appropriate.

☐ Statistical significance is not confused with practical importance.

☐ Nonsignificant findings are not interpreted as proof of no effect.

☐ Discussion connects findings with theory and directly relevant prior studies.

☐ Contradictory findings are explained cautiously.

☐ Claims do not exceed the design or sample.

Conclusion & Declarations

☐ Conclusion directly answers the objective.

☐ Conclusion is consistent with results.

☐ Limitations are acknowledged where appropriate.

☐ Recommendations follow logically from evidence.

☐ Acknowledgments/funding/conflict/data statements are included if required.

References & Presentation

☐ APA 7 is applied consistently.

☐ Every in-text citation appears in References and vice versa.

☐ DOIs and bibliographic details have been verified.

☐ Recent and directly relevant peer-reviewed literature is prioritized.

☐ English has been proofread.

☐ All guidance text, examples, placeholders, and this checklist are removed before final submission.