

Communicating Scholarly Contributions in Informatics Education: A Structured Manuscript Demonstration

Abstract. Problem and aim: Readers of informatics education research need to identify what a paper establishes and why it matters without reconstructing its argument from a long manuscript. This instructional demonstration shows how coordinated front matter can make those distinctions explicit.

Approach: The demonstration organises the title, abstract, keywords and contribution statements as connected reporting elements. It separates the inquiry summary from reader-facing accounts of knowledge contribution, educational and community value, and implications, while retaining the need to support every substantive statement in the article.

Findings: The example uses four labelled abstract parts and three labelled contribution bullets. It distinguishes empirical findings, conceptual arguments and synthesis through controlled alternatives for the third abstract heading. It also distinguishes word counting for abstract text from counting for labelled bullets, without changing the manuscript's substantive claims or prescribed article-length guidance.

Conclusions: The resulting structure is an authoring aid for communicating an existing, warranted contribution and its educational significance. Authors can use it to organise summaries and identify where explanation is needed. It does not establish that labels increase citations, improve manuscript quality or produce educational benefits; those outcomes would require separate evaluation.

Key words: informatics education, academic writing, structured abstracts, scholarly contribution, educational implications.

Contribution and implications for informatics education

- **Knowledge contribution:** The demonstration distinguishes the knowledge contribution, educational and community value, and implications for informatics education as connected but different reporting functions.
- **Educational and community value:** Authors and readers can use this distinction to recognise educational significance without treating methodological sophistication or unsupported benefit claims as a contribution.
- **Implications for CS education:** Researchers can use the three questions to explain how findings or arguments inform understanding, professional judgement, teaching, design or further inquiry.

Instructional example, not a research report. Replace all example text. Use an informative title; a four-part structured abstract of 150–250 words excluding its labels; 4–6 keywords; and 3–5 labelled contribution bullets with a maximum of 150 words including their labels. The required abstract labels are Problem and aim; Approach; Findings; Conclusions.

Main argument or Synthesis may replace Findings for the allowed manuscript types. The required bullet labels are Knowledge contribution; Educational and community value; Implications for CS education. Conditions and limits is optional as a separate final bullet. A further substantive bullet may repeat a required label. Keep the core contribution, educational significance and principal warranted implication in the abstract itself. The bullets explain significance and use, not a duplicated study summary. Preserve claims and qualification; do not invent findings, benefits or applications merely to fill labels. Delete this preparation note before submission.

1. Introduction

This section illustrates the typical opening of a manuscript. Write complete paragraphs and avoid manual line breaks (do not use `\\` to format paragraphs). The INFEDU class produces fully justified text by default.

Citations in this example use APA author–date formatting. In `biblatex`, use `\textcite` for narrative citations and `\parencite` for parenthetical citations. For example, Lamport (1994) introduces the $\text{\LaTeX}$ system. The APA manual provides a reference-format model (American Psychological Association, 2020).

1.1. Submission stage and final publication length

INFEDU does not impose a formal word limit at initial submission. For the final publication version, most full-length articles should aim for 6,000–8,000 words and should generally not exceed 10,000 words. This is guidance, not an absolute ceiling; longer articles may be appropriate when the evidence, scope, contextual detail, synthesis or argument requires additional space. Shorter articles are welcome when adequately reported. Exceeding 10,000 words at initial submission does not require advance permission or a separate length justification. Remove avoidable repetition, but retain information essential to evaluating the work.

Counting convention. Count the article body from the introduction through the conclusion, including headings, in-text citations, quotations, footnotes/endnotes, text in tables, and table and figure captions. Also count appendices retained within the article, regardless of position. Exclude the title page, abstract, keywords, contribution-and-implications section, references, acknowledgements, declarations and separate online supplementary files. Report this count on the separate Title Page and update it for the final publication version.

Current author instructions: INFEDU Instructions for authors.

1.2. Document structure and cross-references

Use `\label` and `\ref` to create cross-references. For example, Table 1 demonstrates a compact table, while Figure 1 shows a figure with a placeholder graphic.

Table 1

A basic table with aligned columns and a clear caption.

Category	Description	Count
A	Short text	12
B	Slightly longer text	5
C	Text with a number (e.g., 3.14)	19

Table 2

A table using paragraph columns for wrapped text.

Element	Guidance
Captions	Write complete, descriptive captions that allow a table to be understood without reading the main text.
Alignment	Use consistent alignment: text in left-aligned columns and numbers right-aligned when appropriate.

1.2.1. Subsubsections

INFEDU supports standard sectioning down to subsubsections. Use deeper levels only when they improve readability.

Inline formatting. Use *italics* for emphasis, **bold** sparingly, and `monospace` for literal code or file names (e.g., `references.bib`). Quotation marks should be typeset with `\enquote{...}` from `csquotes`, for example “this is a quoted phrase”.

2. Tables

Tables should be created with the `table` float, a caption, and a label. Place `\label` after `\caption` so references point to the correct number.

2.1. Tables with paragraph columns

When table cells contain longer text, use paragraph columns (`p{...}`) to wrap the content neatly.

3. Figures

Figures should be provided as vector graphics (PDF/SVG via conversion) when possible, or as high-resolution raster images. In a template, it is useful to include a placeholder figure that compiles without external files.

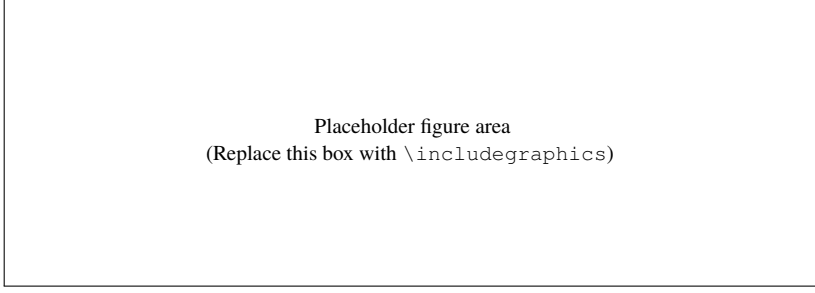


Figure 1. A placeholder figure with a descriptive caption.

4. Mathematics

Use `amsmath` environments (already loaded by the `INFEDU` class) for displayed equations. Inline math uses `$ . . . $`, for example $a^2 + b^2 = c^2$.

4.1. Single equations

$$\text{RMSE} = \sqrt{\frac{1}{n} \sum_{i=1}^n (\hat{y}_i - y_i)^2}. \quad (1)$$

Equation 1 is referenced with `\ref`.

4.2. Aligned equations

$$\mathbf{w}_{t+1} = \mathbf{w}_t - \eta \nabla \mathcal{L}(\mathbf{w}_t), \quad (2)$$

$$\mathcal{L}(\mathbf{w}) = \frac{1}{n} \sum_{i=1}^n \ell(f_{\mathbf{w}}(\mathbf{x}_i), y_i). \quad (3)$$

5. Lists

Use `itemize` for an unordered list. Use `enumerate` for numbered steps.

5.1. Unordered lists

- Use one sentence or phrase per item.
- Keep punctuation consistent across items.
- Avoid excessive nesting.

5.2. Ordered lists

1. Prepare the manuscript content (sections, figures, tables).
2. Ensure references compile correctly (see Section 6).
3. Run a final build that resolves all cross-references.

5.3. Description lists

Goal Demonstrate common INFEDU structures.

Non-goal Report new empirical findings.

6. Citations and references

This section demonstrates typical citation patterns.

6.1. Narrative and parenthetical citations

- Narrative: Knuth (1984) discusses typesetting systems.
- Parenthetical: This demonstrates a parenthetical citation (Knuth, 1984).

6.2. Citing different entry types

The reference examples include a journal article by Wing (2006), an edited-book chapter by Mayer (2005), and a journal guidance page (Informatics in Education, n.d.). These are formatting examples, not sources that authors are required to cite in their own manuscripts.

6.3. Citing multiple sources

Multiple sources can be cited together (American Psychological Association, 2020; Lamport, 1994).

6.4. Adding page numbers for quotations

For quotations or precise locations, add a postnote argument, e.g., (Wing, 2006, p. 33).

6.5. A short code example

Short code can be typeset with the built-in `verbatim` environment:

```
% Example: a labelled equation
\begin{equation}
  \label{eq:example}
  E = mc^2
\end{equation}
```

7. Conclusion

This template demonstrates commonly required manuscript elements. In a real submission, replace the placeholder text with the study content while keeping the structural pattern: consistent sectioning, properly captioned floats, mathematics in `amsmath` environments, and citations produced by the selected bibliography workflow.

Preparation note on declarations

Complete the confidential Title Page statements. Do not put author identities, funding identifiers, acknowledgements or biographies into the review PDF. Preserve the methodological, ethical and contextual information needed for assessment in an anonymised form. Delete this instructional note before submission.

A. Appendix: Example of a long table

For material that is useful but not essential to the main narrative, place it in an appendix. Long tables may be placed in an appendix using `longtable`.

Table 3
A small longtable example (continues automatically if needed).

Field	Meaning
Title	Manuscript title as it should appear in print.
Runtile	Short title used in running headers.
DOI	Digital Object Identifier for the article (if assigned).

References

- American Psychological Association. (2020). *Publication manual of the American Psychological Association* (7th ed.). <https://doi.org/10.1037/0000165-000>
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