

ELD Author Guidelines, revised September 2019

The following rubric/guidelines are adapted from the ASEE *Journal of Engineering Education* author guidelines, modified for differences found with the ASEE Conference Author's Kit and Draft Paper Evaluation Rubric.

ASEE Engineering Libraries Division - Author Guidelines

Abstract Preparation

The first step in becoming an author/presenter at the ASEE Annual Conference is the submission of an abstract for approval.

Abstract Format Guidelines are set by ASEE in the ASEE Author's Kit for the current year's conference. An example of the Abstract Guidelines can be found in Appendix B of the ASEE 2020 Annual Conference Author's Kit at https://www.asee.org/documents/conferences/annual/2020/2020_Authors_Kit_1.pdf. All ASEE resources for authors: <https://www.asee.org/annual-conference/2020/paper-management/for-authors>

In order to better communicate your proposal, a structured abstract approach is recommended, similar to the structured abstract guidelines here (adapted from the Author Guidelines for the ASEE *Journal of Engineering Education*).

The format for a structured abstract would include the following elements, as noted:

- **Background** - Briefly describe the context and motivation for the study
- **Purpose/Hypothesis**- Summarize the research question/proposition(s) addressed
- **Design/Method** - *For empirical studies*, provide an overview of the research design, methods of data collection, and analysis
- **Scope/Method** - *For research reviews or pedagogical innovations*, provide a description of the literature considered and the methods used in the review process
- **Results** - Summarize the key findings
- **Conclusions** - State the key conclusion(s) based on the findings

The author should label each part of the structured abstract with the appropriate subheading. Abstracts should have between 250-500 words (excluding the subheadings). This limit results in about 2 to 5 sentences per subheading. The parts do not need to be of equal length. A matter-of-fact, statement-oriented writing style is better suited for structured abstracts than an expository, conversational writing style.

General manuscript requirements

There is no set manuscript length.

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For all papers, a review of literature directly relevant to the research problem or topic should be summarized. This review of literature helps the reader determine the originality and context of the findings reported in the paper and presentation.

Submitted manuscripts must not have been previously published nor have been submitted concurrently elsewhere for consideration for publication.

Types of manuscripts

Manuscripts should report original research that contributes significantly to the body of knowledge in the field of engineering education, or that supports engineering education through means such as information literacy instruction or library programming, services, marketing, or collections.

Quantitative, qualitative, and mixed methods research designs are accepted. Manuscripts that report the results of attempts to replicate significant empirical studies are welcome; see “[The Role of Replication in Engineering Education Research](#)” by Benson and Borrego in the October 2015 issue of the *Journal of Engineering Education*.

Manuscripts that detail curricular or pedagogical innovations are encouraged for the conference.

Manuscripts will generally fall into two categories: empirical investigations and research reviews/pedagogical innovations.

Empirical investigations should state the questions addressed and their context relative to prior knowledge on the subject. The relevant theories should be presented, the research design decisions should be justified, and the research methods should be described in detail to permit an evaluation of their quality. The interpretation of the results must be supported by the data. The conclusions should explain the significance of the results for advancing engineering education research or practice.

Research reviews/pedagogical innovations should state the propositions addressed in the review and their context relative to the body of knowledge reviewed. A review might include a critical analysis, synthesis, or evaluation of previous research to provide new perspectives, a new knowledge structure, general conclusions or overarching principles, or new research directions. Reviews using systematic and meta-analytic approaches are encouraged, but not required. An explanation of the significance of the insights gained to advancing engineering education research or practice should be provided.

Review Criteria

Manuscripts will be reviewed according to the current Draft Paper Evaluation Rubric provided by ASEE for the Annual Conference. The rubric is available for review at <https://www.asee.org/documents/conferences/annual/2016/Rubric.pdf>. Check the ASEE Annual

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Conference website for the current rubric:

<https://www.asee.org/annual-conference/2020/paper-management/for-authors>

Authors are advised that, regardless of any unforeseen changes in the Conference rubric, an acceptable and high-quality draft manuscript will address these criteria implemented by the *ASEE Journal of Engineering Education* (JEE), which are in turn adapted from the *International Journal of Teaching and Learning in Higher Education* (<http://isetl.org/ijtlhe/criteria.cfm>).

Empirical Articles

1. **Focus:** All empirical articles should report original research that extends the body of knowledge in the field of engineering education.
2. **Problem:** Does the manuscript clearly state and explain the problem or issue that is addressed by the research, the warrants for claims made, and the significance of the problem? Is the statement of the problem directly linked with and in alignment with the subsequent review of the literature?
3. **Literature:** Does the article identify, synthesize and evaluate the relevant literature that led the author to propose the research? Is there a specific and persuasive explanation of how the present study will contribute to the literature as well as to practice or policy? What conceptual or theoretical framework informs the study?
4. **Methods and Analysis:** Does the manuscript present a well-developed, clearly articulated, and appropriate method or set of methods for the expressed problem, supporting literature, and research approach (e.g., qualitative or quantitative)? How detailed is the description of the context of the study? Are the data that are collected, regardless of form (e.g., interview transcripts, survey results), analyzed using appropriate procedures? Are the results of these analyses reported accurately and fully in the manuscript?
5. **Quality of Data and Findings:** Regardless of the method(s) used, the data should be of sufficient quality to address the hypothesis and/or research questions. In quantitative studies, are the sample size and demographics appropriate to the problem? In qualitative papers, were the data collected in a way to provide an in-depth understanding of the context? Are findings supported by data and results? Are findings sufficiently compelling to support publication?
6. **Conclusions:** Are the conclusions specific to the research questions or hypotheses posed? Are they supported by the data analysis? In addition, does the conclusion address both the original problem and the implications of the research findings? For quantitative studies, do the conclusions address the hypothesis? For qualitative papers, do the conclusions address the research question? Does the manuscript connect the findings to the conceptual framework that informs the study, discuss the limitations of the study, and describe the implications of the findings for further research or educational practice?
7. **Clarity and Organization:** Is the manuscript organized in accordance with currently accepted formats for reporting qualitative, quantitative, or mixed methods research? (For guidance, see the *Publication Manual of the American Psychological Association*, sixth edition).

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8. **Style and Mechanics:** Is the article written in an appropriate style? Is the article free from grammatical, punctuation, and spelling errors? *Note: citations and references will be accepted in any standard format. ASEE has not adopted a particular citation and reference standard.*

In addition to these general criteria, specific criteria apply depending on the type of empirical article:

1. **Quantitative studies** will generally be hypothesis-driven. Is the hypothesis clearly articulated and are the methods appropriate to address the hypothesis? Are the sample and any controls appropriate? When scales, instruments, or tests are used, is there evidence of validity and reliability? Is the use of statistical tests explained clearly? Are decisions regarding the choice of statistical tests justified? Have assumptions for statistical tests been checked or verified? When appropriate, are effect sizes, confidence intervals, statistical power, and goodness of fit reported?
2. **Qualitative studies** do not have to be hypothesis-driven. Does the manuscript articulate the research questions that guide the study? Are the methods appropriate to answer the research questions? Additionally, is there justification for the cases or participants being studied? Are credibility and trustworthiness established? Are the analyses used appropriate? Does the methodology provide a deep, contextual understanding of the phenomenon being studied? Is the researcher's epistemological stance clearly articulated and reflected in the methodology?
3. For **mixed methods studies**, are the hypotheses or research questions clearly stated? Does the article delineate whether it uses a mixed or multiple methods approach? Does the article clearly describe the research strategy and the plan for integrating the different data sets? Finally, do the quantitative and qualitative components satisfy the criteria given above?

Research Reviews and Curricular/Pedagogical Innovations

1. **Focus:** Are the goals well stated and developed, and bear a clear relationship to engineering education?
2. **Topic:** Does the manuscript clearly state and explain the topic or issue that is addressed by the review? Is the statement of the topic delineated and distinguished from related topics, and directly linked with inclusion criteria described in the manuscript's methods section?
3. **Methods and Analysis:** Does the manuscript clearly describe how articles were identified for the review, and is the approach appropriate for the type of review? Are decisions as inclusion criteria, databases used, and the number of qualifying articles documented? For a meta-analytic review, is a description of the statistical techniques used in the analysis included?
4. **Synthesis and Critique:** Does the manuscript sufficiently describe what is known about the topic? Does it advance knowledge and identify future directions of research? Is it a complete treatment of the topic?

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5. **Conclusions:** Are the conclusions meaningful and the scholarly contributions supported by the literature review? Do the conclusions suggest further directions for research, areas that are missing from our current understanding, or implications for engineering education practice?
6. **Clarity and Organization:** Is the manuscript organized in accordance with currently accepted formats for literature reviews?
7. **Style and Mechanics:** Is the manuscript written in an appropriate style? Is the manuscript free from grammatical, punctuation, and spelling errors? *Note: citations and references will be accepted in any standard format. ASEE has not adopted a particular citation and reference standard.*

Submission

The mechanics of submission are governed by the Author's Kit published by ASEE for the Annual Conference. The 2020 Author's Kit document is located at https://www.asee.org/documents/conferences/annual/2020/2020_Authors_Kit_1.pdf.