***Statistics Education Research Journal*: Conceptual Papers**

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**Overview**

Have you ever thought about writing for the *Statistics Education Research Journal (SERJ)*? According to *SERJ* policy (see: <https://iase-web.org/ojs/SERJ/about/submissions>), the journal accepts three broad types of manuscripts for consideration: reports of original empirical research, conceptual papers, and brief reports.

This document focuses on conceptual papers and is organized in several parts. First, we expand the range of prospective papers that can fall under the broad heading of conceptual papers and what they should include. Next, we provide short guidelines regarding the length and organization of conceptual papers. Finally, we use two examples to illustrate conceptual papers published in SERJ and provide some closing emphases. We hope that this information helps prospective authors plan their conceptual papers and strengthen their papers’ contributions.

**Broad Scope of Conceptual Papers**

In general, a conceptual paper is a type of academic writing in which authors synthesize and extend existing empirical and theoretical literature to develop or refine a concept, theoretical framework, model, approach, or perspective. Multiple types of papers are possible and are invited under the broad heading of conceptual papers, including key subtypes of:

* papers that present reflective or theoretical analyses or epistemological studies,
* integrative and critical literature reviews (e.g., systematic literature reviews, scoping reviews, etc.),
* papers that combine a conceptual analysis with some empirical work of a limited but structured scope (A conceptual paper may include an empirical element, but the empirical part is used as an illustration of conceptual ideas, not at the center of the conceptual ideas.), and
* papers that report structured reflections on educational practice related to statistics education, broadly viewed, as a basis for proposing new epistemological and conceptual ideas.

All such conceptual papers, regardless of their type, should be based on or emerge from scholarly research, and be written to make explicit their contribution to future research, theory-building, or teaching and learning in an area of educational practice related to statistics and probability learning or usage. Such papers often are expected to highlight problems or areas in which existing knowledge and understanding is not sufficient for addressing the problem. Often, the primary objective is to enlighten readers about challenges and concerns in studying the problem identified and to generate new ideas, theories, and approaches for understanding complex and abstract concepts related to the problem by potentially using research and analysis to support arguments and conclusions. Thus, conceptual papers should be written in a way that clarifies their contribution to ongoing development of knowledge and learning in our field.

**Possible Structure of Conceptual Papers**

Conceptual papers may take diverse forms of internal organization depending on their specific goals and content. Some papers may include the following elements as sections or subsections, although other internal divisions are possible.

1. General Introduction: The introduction provides an overview and the goals of the conceptual paper. It introduces the concept, theory, approach, or perspective that is the focus of the paper, including its significance. The paper should argue for why a new way of thinking is needed by identifying gaps in knowledge as well as justifying the importance of the paper’s focus.
2. Problem Statement/Theoretical Background: The problem statement often defines the concept, theory, approach, or perspective and explores its meaning in relation to other elements. Key concepts and elements and their interrelationships are identified using existing empirical and theoretical literature and are introduced to readers through a literature review. The ideas are further elaborated in the argument.
3. Arguments: Several sections can present the ideas and evidence to support claims about, for example, the need for a new theoretical perspective or framework or refinement of a concept and why and how existing perspectives and frameworks are inadequate. This section is part of the main body of the paper, where the new/refined concept, theory, approach, or perspective is explored in depth through use of examples, case studies, and other forms of evidence to support arguments. This section typically includes a combination of analysis and critique to examine the concept or idea from different angles and to evaluate the strengths and weaknesses of different arguments and perspectives.
4. Discussion/Conclusion: The conclusion summarizes the key points of the paper and offers final thoughts on the significance and value of the concept, perspective, or theory. Broader implications are introduced, including its practical applications, theoretical implications, and potential impact on society or culture.

**Examples of Conceptual Papers**

What follows are two illustrative examples of conceptual papers that were published in SERJ. (These examples should not limit the range of prospective contributions; several other types of conceptual papers are possible as described in the section on the Broad Scope of Conceptual Papers.)

**Example 1**

The first *SERJ* issue of volume 22 in 2023 included a conceptual paper authored by Hadfield. Hadfield’s main purpose was made clear in the title: to introduce “A Conceptual Framework for Formative Assessment in Large-Enrollment Introductory Statistics” classes. In the Introduction, Hadfield argued for the importance of formative assessment in statistics education to positively affect both students’ attitudes and their achievement. As noted by the author, the paper then:

discusse[d] the theoretical framework for formative assessment in higher education …, [explored] the relationships between the elements of formative assessment and student attitudes and achievement… [, and discussed] the constructs of the conceptual framework to provide foci for future research and implications for instructors, students, and curriculum creators. (p. 4)

Throughout, the author used empirical and theoretical literature to argue for the elements of the conceptual framework, how the elements interrelate, and the effects the elements can have. Although the author used different headings than those introduced above for conceptual papers, the paper includes all the information listed for the sections.

**Example 2**

The May 2016 issue of *SERJ* included a conceptual paper on “Learning the Language of Statistics: Challenges and Teaching Approaches” authored by Dunn and colleagues (2016). The authors identified linguistic challenges associated with teaching statistics. In their Introduction, they argued for the importance of statistical language in terms of both understanding and using statistical communications as well as the need for teachers to know the linguistic challenges that students might face in learning statistics. The authors then specifically discussed “challenges created by the language used in statistics” (p. 10) based on empirical and theoretical literature. They offered examples from textbooks and other sources to illustrate both challenges and associated factors. The authors argued that teachers need to be aware of linguistic challenges in order to teach (and have students learn) statistical terminology. They further discussed implications and identified solutions offered in both empirical and expository literature and argued a need for more “evidence-based research into ways to help students with these linguistic challenges” (p. 21). Like the paper from Hadfield, the authors did not structure their paper using the four sections detailed earlier; their paper, however, is structured to present the ideas identified for each section in a similar sequential pattern.

The two examples presented above provide insights into advancing theory and practice related to formative assessment and linguistic challenges through authors’ syntheses of extant theory and literature. In both examples, the authors presented implications for both research and practice based on their syntheses.

**Summary and Further Emphasis**

Overall, the sections above clarify that multiple types of papers can be envisioned as conceptual papers, using flexible headings. Regardless of the specific type, a conceptual paper should have a word count of 6,000 to no more than 10,000 English words (body text, not including references, abstract, title, and appendices). Submission of longer papers is possible only after obtaining the editor’s consent in advance.

Overall, a conceptual paper that would be appropriate for *SERJ* should constitute a rigorous and detailed examination of a persistent educational problem or a concept, theory, approach, or perspective aimed at advancing knowledge in statistics education. Further, the paper should be written in such a way that it clearly identifies a gap in theoretical or applied (practice-oriented) knowledge. The closing section should clarify its contributions in terms of what is new, innovative, or different about the ideas and directions it proposes; discuss limitations of the proposed ideas; and point to specific directions for further research (empirical and conceptual) with solid rationale, all supported by or in relation to the relevant research-based and professional literature.

Conceptual papers can be difficult to write and review (Saunders, 2018). We hope that our examples illustrate how conceptual papers can contribute to statistics education. A number of authors from different fields offer expanded editorials and articles to further explicate the characteristics of conceptual papers and to distinguish conceptual papers from both research reports and reports of practice (e.g., Ogbonnaya & Brown, 2023; Reese, 2022). As the editors and advisory board of *SERJ,* we welcome submissions of conceptual papers, broadly viewed, that offer “contribution[s] to future research, theory-building, or teaching and learning in an area of educational practice related to statistics and probability learning or usage” (IASE, n.d., Section 2.1). We are open to answering any questions you might have about your ideas for submitting conceptual papers for publication in *SERJ*.

**References**

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