CURRENTS IN PHARMACY TEACHING AND LEARNING

DESCRIPTION

*Currents in Pharmacy Teaching and Learning* is devoted to dissemination of high quality, peer-reviewed scholarship relevant to all areas of pharmacy education—promoting educational research excellence. The *Journal* maintains a particular focus in two major areas: pharmacy faculty development in the scholarship of teaching and learning and the scholarship of interprofessional pharmacy education. With diverse editorial board members, authors, and peer reviewers, the *Journal* engages a variety of stakeholders in pharmacy education: educators, researchers, faculty practitioners, as well as interprofessional colleagues. Diverse author contributions are within original research, review articles, commentaries, and letters categories.

Original research topics include, but are not limited to: Scholarship of Teaching and Learning: teaching/learning strategies; interprofessional education Quality Improvement - assessment of programmatic/curricular outcomes Curricular Revision design, implementation, evaluation, New school/program strategies Attitudes/perceptions within pharmacy education

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INTRODUCTION

Journal Description

*Currents in Pharmacy Teaching and Learning* is devoted to dissemination of high quality, peer-reviewed scholarship relevant to all areas of pharmacy education-promoting educational research excellence. The Journal maintains a particular focus in two major areas: pharmacy faculty development in the scholarship of teaching and learning and the scholarship of inter-professional pharmacy education. With diverse editorial board members, authors, and peer reviewers, the Journal engages a variety of stakeholders in pharmacy education: educators, researchers, faculty practitioners, as well as inter-professional colleagues. Diverse author contributions are within original research, review articles, commentaries, and letters categories.

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- Quality Improvement - assessment of programmatic/curricular outcomes
- Curricular Revision - design, implementation, evaluation
- New school/program strategies
- Attitudes/perceptions within pharmacy education

**Types of paper**

Types of Paper (additional information is available for each manuscript type - contact Editor-in-Chief at cptl@midwestern.edu)

1. Research Paper

*Original Research Articles* and *Research Notes* are both hypothesis-driven inquiries with the purpose of contributing to generalizable knowledge (i.e., builds on prior knowledge) about teaching, learning, or education in pharmacy. The primary difference between these two article types is that studies described in *Research Notes* exhibit notable issues related to validity and/or generalizability that limit the extent to which the findings contribute to the literature. Authors are strongly encouraged to submit manuscripts that represent a pilot study of a larger research project as a *Research Notes*.

Clear and direct communication of the scientific process is a vital guiding principle for both *Original Research Articles* and *Research Notes*. An important part of research is the potential for replication by others, which is very difficult if the study methods and procedures are poorly described. Many of these reporting guidelines can be found online at the EQUATOR Network clearinghouse (http://www.equator-network.org).

This type of manuscript should report completed qualitative or quantitative original research. The manuscript should include discrete sections including introduction, methods, results, discussion, and conclusions. Authors are encouraged to use subheadings throughout their manuscript, especially with the Methods and Results sections. Limitations of the research should be included in the Discussion section. A thorough review of the literature should be conducted and a discussion of the same should be included in the manuscript text in the Introduction section. Consideration of the literature in other relevant healthcare professions is recommended. The length of the manuscript text should not exceed 5000 words not including the title page, tables, figures, or references.

**Book Review**

**Book Review Content Guidelines:**

Book Reviews include answers to the following questions (as appropriate), as well as justification/evidence for each offered answer. The review itself doesn't have to read "question, answer, question, answer" and can adopt whatever format showcases your "answers" in a meaningful, easy to read manner.

1. Who is best served by reading/using this book (e.g., faculty, researchers, students, teaching assistants, practitioners)?

2. What kind of book is this (e.g., resource, textbook, adjunct to textbook)?
3. Would you suggest others read this book cover-to-cover, by chapter, or based on an acute need?

4. What does this book do best (e.g., readability of text, examples, practice problems, references)?

5. How much of the content is relevant to a PharmD curriculum vs. of value to a pharmacy educator and/or practitioner?

6. If there is also online content available in addition to the printed text, what value do you see in that online content?

7. If applicable, what kind of student would benefit from using this book (e.g., in need of remediation or refresher, currently enrolled in PharmD curriculum, a FPGE student)?

8. If applicable, in what kind of settings would you see this textbook as best being used (e.g., lecture, small group learning, laboratory, IPPE, APPE)?

9. How does this book complement (or duplicate) other books that are available? When comparing this book to others like it - what are this book's strengths and weaknesses?

10. How are various aspects of this book (e.g., table of contents, glossary, indices, appendices, figures, tables) beneficial to a learner or instructor?

11. If possible, provide your opinion on a couple of pointers or comments to the author(s) that could be of value to those using this book as well.

**Book Review Format Guidelines:**

- 1000 word limit
- Title must include full book citation, ISBN, and cost

**Case Report Teaching and Learning Matters (TALM) Content Guidelines:**

Articles in this category focus on describing advancements in teaching and learning practices in pharmacy education. It provides an opportunity to share, in a peer-reviewed environment, the teaching and learning techniques currently being used to advance pharmacy education. While not minimizing the importance of evidence-based teaching and student outcomes, this category is tailored to those authors whose work is in the early stages of implementation. As such, much of or even all of the evidence of the impact of the teaching and learning techniques described in manuscripts in this section of Currents in Pharmacy Teaching and Learning (CPTL) will rely on smaller cohorts of learners, critical reviews conducted by instructors and students, instructor, peer and/or student reactions to teaching initiatives, and pilot student outcome data. It is anticipated that manuscripts in this category may have no or minimal comparative controls. The niche for this category is dissemination of the everyday opportunities, risks, challenges, and rewards experienced by the authors for the benefit and growth of the CPTL readership and the profession.

The aim of this article type is to encourage sharing the wisdom that is gained through a scholarly approach to teaching. By sharing this knowledge, it is hoped that others will be (1) inspired to utilize the techniques discussed and (2) join in enhancing the scholarship by supporting the technique. In order to accomplish these goals, the scholarship must be written to a caliber that merits recognition and dissemination. Therefore, this article provides guidance as it relates to the expectations for manuscripts submitted under this category.

**Background**

- Basic overview of the learning environment sufficient to understand the strategy's fit and context, including attributes of learners

- Background on teaching opportunity or challenge
o Impetus for change

o Summary of literature documenting similar challenges or potential solutions referenced sufficiently to build on previous scholarship

**Educational activity**

o Description of learning activity/strategy/technique/approach should include the following: any pre-activity learner preparation, an activity description, and any post-activity learner follow-up.

o If a novel use of an existing technique: Clear articulation of the adaptation of the activity/strategy/technique/approach or its novelty

o Rationale for strategy/approach selected and educational aim/objective

o Required resources, such as physical space, personnel and relevant expertise, training and preparation processes, time to create, and technology?

*Educational Activity*

o Methods of assessment of student learning and/or evaluation of strategy:

  o An overview of methods used and rationale

  o Description of assessment's and/or evaluation's tie to the course grade/final assessment (if applicable)

  o Data supporting students learning and/or evaluation of strategy, which may include the following:

    . Learning evaluation (including tool(s) if applicable) (e.g., summaries of rubric ratings and scores)

    . Student evaluations of activity (e.g., course evaluations, focus groups, and surveys)

    . Peer evaluations of educational materials (e.g., slides, exams, assignments, and online support materials)

    . Peer evaluations of instructional delivery

    . Peer review of outcomes of teaching advancement (e.g., student work products)

    . Peer recommendations for improvements of teaching advancement

**Critical analysis of the educational activity**

o Criteria by which educational activity is critically analyzed, which may include the following:

  o Resources to implement (e.g., time)

  o Publicly available or locally established standards, thresholds, or benchmarks used to interpret the data on student learning and/or evaluation of the strategy

  o Evidence of drawing together data from multiple sources

    . Summary of analysis—a clear and concise statement of the findings of your analysis of the educational activity

    . Lessons learned:

  o Most rewarding part(s) of developing and implementing this educational activity

  o Most challenging part(s) of developing and implementing this educational activity
Planned improvements for this educational activity

. Statement of the work’s contribution to previous scholarship

. Implications for the curriculum, to other colleges/schools of pharmacy and/or the profession

A structured abstract using these section headings also should be submitted.

For more information, see the Teaching and Learning Matters announcement in CPTL.

**Teaching and Learning Matters (TALM) Format Guidelines:**

. 5000 word limit (somewhat flexible - contact Editor-in-Chief)

. Use graphs and tables as appropriate to best present the study results; however, do not duplicate data in graphs, tables, and text.

. Tables, figures, and references are not included in the word limit.

**Quality Improvement (QI) Article Content Guidelines:**

These articles are focused on the cycle of continuous quality improvement (CQI) as applied to pharmacy education in its broadest sense. The focus should reside on the CQI process. The inclusion of institutional or other study data that is not specifically germane to this process is not appropriate. Authors are encouraged to consult the Standards for Quality Improvement Reporting Excellence (SQUIRE) guidelines (http://www.squire-statement.org). While these guidelines were originally developed for quality improvement in health care, the recommendations in these guidelines are useful in concept for CQI activities in educational settings. QI articles include the following components: [NOTE: bolded headers below are required as the article section headers]

**Problem Description.** Describe the nature and significance of the education-related problem that inspired the work, including how the need was identified.

. Describe the context and/or setting in which your quality improvement activities are being performed (e.g., if it is a course, then that course and its placement in the overall program, as well as the entire program need to be described; if it is a sequence such as a research track, describe that sequence, its placement in the program, as well as the entire program)

. Describe the relevance of your process to readers and the academy-at-large.

**Quality Improvement Methods**

. Describe your process in developing the improvements, including the members, activities and timeline.

. Explain how you implemented these improvements, including your interventions, measures and analysis.

. Describe the methods by which your improvements were evaluated.

**Results of CQI Inquiry**

. Explain the findings from your CQI process.

(Note: While results and evaluative data are not the central issue in this article section, a discussion of their role in your CQI process is needed.)

**Interpretation and Discussion.** Summarize your most important findings and CQI changes.

. Discuss any limitations.

. When appropriate, discuss whether your findings suggested any other future changes
. Provide a concise description of stakeholder observations (e.g., what went well? what challenges were encountered?)

. Discuss future implications for your program (how might you do this differently next time?)

. Discuss future implications for the academy-at-large (what would you suggest to others based on this experience?)

**Conclusions**

. Address only the objectives and do not overstate your findings.

. Do not give assertions that are beyond your findings.

. Provide a summary statement of the implications of your work for your program and for others.

A structured abstract using these section headings also should be submitted.

**Quality Improvement Article Format Guidelines:**

. 5000 word limit (somewhat flexible - contact Editor-in-Chief)

. Use graphs and tables as appropriate to best present the study results; however, do not duplicate data reporting in graphs, tables, and text.

. Tables, figures, and references are not included in the word limit.

**Short Communication**

This type of manuscript should report the results from preliminary studies or when limited data is available from qualitative or quantitative original research. The length of the manuscript should not exceed 3000 words not including the title page, tables, figures, or references. The manuscript components are dependent on the type of short communication submitted (see below). These manuscripts will fall into one of the following four categories.

**Research Note (Section Headers: same as Research Article)**

Description and Section Headers: See Research Article

**Experiences in Teaching and Learning (EiTL)**

While articles in the Teaching and Learning Matters section focus on development and evaluation of a teaching and learning approach that make a substantial contribution to or advancement in pharmacy education, EiTL articles report efforts that make a more modest contribution to the pharmacy education literature. Articles in this section generally focus on application and implementation of a previously developed teaching and learning approach, or are focused on application of a teaching and learning approach to a different setting, discipline, or audience. An EiTL article may also report an experience with a modification or improvement over a previously reported technique.

Initiatives suitable for this category may have had minimal evaluation or prospective consultation of the existing literature. There may be notable methodological (e.g., participant surveys that lack connection to previous work or a foundational model, non-specific measures of student learning such as overall course grades) or logistical (e.g., small sample size, low response rate) limitations. While some broad outcome data are included, the focus of the article is truly on reporting the context and experience rather than relying heavily on providing evidence of the approach's effectiveness. Section Headers: Background and purpose, Educational activity and Setting, Findings, Discussion, Summary

**Interprofessional Education (IPE) Report:**
Interprofessional Education (IPE) Reports describe innovative, promising, early-stage IPE models alongside thoughtful analysis of the insights gained and barriers identified/overcome by pharmacy educators working to address IPE requirements embedded within accreditation standards. Authors are encouraged to contact the Editor-in-Chief (cptl@midwestern.edu) for article topic suitability prior to submission. Section Headers: Background, Interprofessional Education Activity.

Live and Learn:

Live and Learn articles describe studies during which a problem or significant limitation negatively impacted any substantial results and/or interpretation of the results. Authors are expected to be concise. Section Headers: Background, Impact, Recommendations(s), Discussion midwestern.edu

Reflective Practice
Wisdom of Experience Article Content Guidelines:

In this article type, we seek to capture the wisdom of practice by providing a platform to share. Articles will communicate a lived experience and the insights, opinions, views, ideas, concerns, philosophies and positions derived from it. Authors may choose to explore focal areas such as: what I think or believe; how I've grown or changed; what I've learned; what inspires me; what incites me; what challenges or concerns me; what I wonder about; where I see excellence or where I've failed. However, articles appearing in this section will not be simple reports of experience; they will be characterized by moving beyond the "What?" to more firmly address the "So What?" and "Now What?" of the experience. Authors are expected to undertake significant introspection, in-depth analysis and critical review of their experience. Authors are expected to use scholarly rigor, present original insights from the reflective process, add consequentially to the field, and conceivably contribute to the professional growth and development of others.

Faculty, preceptors, administrators, professional students, graduate students, and residents are invited as authors. Manuscripts can comment on insights derived from one-to-one interactions (e.g. advising, mentoring, teaching), group work (e.g. teaching teams, classrooms, task forces) or institutional/multi-institutional initiatives (e.g. curriculum reform, regional collaborations, new administrative structures). Manuscripts may be inspired by reflections on didactic, experiential, and/or laboratory teaching experiences. Manuscripts may also be inspired by career transitions or significant moments of self-reflection and review, such as the promotion and tenure process, nomination, application or receipt of awards, or peer-observations of teaching. Authors should be conscious of and identify shifts in their own perspective or paradigm.

Articles in this category include the following components: [NOTE: bolded words represent the required article section headings].

Purpose:

. Clearly states the purpose of the reflective work and its importance to the field

. Explains the gap in the teaching-learning literature that this reflective work begins to fill

Description (including background knowledge):

. Presents an objective, complete and well-expressed description* of the experience in an authentic and engaging manner.

. Demonstrates adequate background knowledge by weaving in relevant theoretical, conceptual and/or empirical work from the existing teaching-learning knowledge base.

Analysis/Interpretation:

. Engages in substantive analysis and interpretation, which generates insights of value to others:

  o Considers characteristics of participants, content or context

  o Acknowledges previous assumptions, beliefs, approaches and/or attitudes
o Identifies shifts in own perspective or paradigm

o Provides evidence of using alternate perspectives/lenses to enrich the interpretation and learning from the experience/incident

**Conclusions**

- Draw conclusions from the experience, making connections to relevant literature as appropriate.

**Implications:**

- Explore the implications and value of the learning to others (i.e. individuals, institutions, the academic community).

- Comment on additional areas for exploration and future directions.

A brief structured abstract using these section headings also should be submitted.

For more information, see *Wisdom of Experience* announcement in CPTL Volume 9 Issue 5.

**Wisdom of Experience Article Format Guidelines:**

- 1500-2500 word limit (somewhat flexible - contact Editor-in-Chief)

- No more than ten references (not included in word limit)

- No more than a total of two figures and/or tables (not included in word limit)

**Letter to the Editor**

**Letter to the Editor Content Guidelines:**

Articles in this category respond to articles previously published in the Journal, in order to enhance the intellectual rigor and continue scholarly dialogue in pharmacy education.

- Provide a clear, succinct critique and/or comment on an issue in an article published in the Journal in the previous 12 months

- A letter must not duplicate other material that has been published or submitted for publication

- Letter authors must disclose any competing or conflicts-of-interest; in the absence of competing or conflicts-of-interest, authors must provide a statement that they do not have any competing or conflicts-of-interest.

There is no need to provide an abstract for this article type.

For more information, see *Letter to the Editor* announcement in CPTL.

**Letter to the Editor Format Guidelines:**

- 500 word limit

- No more than six references

**Review Article**

**Methodology Matters Article Content Guidelines:**

*Methodology Matters* review articles focus on guiding readers and the academy-at-large on appropriate methodology. These critical reviews of methodology are focused towards readers without substantial training in research methods, analysis, or educational measurement. This article category
is intended to provide faculty and future author development, while being helpful and instructive for our peer-reviewers. Methodology Matters articles include the following components. [NOTE: bolded headers below must be used as the article section headers].

**My (or our) Situation (or Issue, Problem):**

. This section situates your review within a particular problem, as well as includes a poignant objective for the review-this section will set the stage for this article.

. Briefly note the importance of this topic as it relates to education scholarship.

. As appropriate, point out your expertise (e.g., Does the situation described represent questions you frequently receive? Is this something you have encountered frequently as an expert peer-reviewer?).

**Methodological Literature Review:**

. Clearly and succinctly discuss poignant literature that informs this methodology topic. Help readers to understand the basis for your upcoming recommendations.

. Make sure this review's concepts and terminology are described for readers without substantial training in research methods, analysis, or educational measurement.

**My Recommendations and their Application(s):**

. Provide clear, logical, and practical advice/recommendations.

. Connect your recommendations to the existing literature base and/or evidence

. If applicable, give your solution to the situation at beginning of this article (this also can serve as your example/application, unless you want to point out other examples in the literature)

. Describe other examples of the recommended course of action (these may not come from the pharmacy education literature, but examples from the health sciences are preferred-please keep in mind AMA-style/article length when giving examples from outside articles).

**Potential Impact:**

. Discuss benefits and limitations of your recommendations

. Describe the manner in which your recommendations could potentially change/impact educational scholarship in pharmacy

. If applicable, briefly provide any theoretical implications from your situation and recommendations

. If applicable, briefly discuss any recommendations for changes at the broader level that may avoid the potential for encountering these problems/issues or diminish their impact in the future (e.g., changes in education or practice)

. Supply a Box 1 (table) of recommended resources for interested readers to further explore.

A structured abstract using these section headings also should be submitted.

For more information, see Methodology Matters announcement in CPTL.

**Methodology Matters Review Articles Format Guidelines:**

. 7500 word limit (somewhat flexible - contact Editor-in-Chief)

. These review articles should not include any new data or data analyses
Tables, figures, boxes and references are not included in the word limit.

Reviews in Education

Educational Review Articles Content Guidelines:

Manuscripts in this category should summarize and build on prior literature with insights for future practice and investigations. Unless the topic is truly unique to pharmacy education, a comparison to studies in other health professions is a necessary component of the review. Authors are strongly encouraged to consult available resources related to recommended best practices. When conducting a systematic reviews, authors are strongly encouraged to consult the Campbell Collaboration (http://www.campbellcollaboration.org/) or the Cochrane Collaboration (http://www.cochrane.org/) for guidance on systematic review procedures and to consult appropriate reporting guidelines (e.g., PRISMA). For narrative reviews, consult appropriate guidelines, such as the RAMESES projects (http://www.ramesesproject.org). Reviews in Education include the following components: [NOTE: bolded headers below are required as the article section headers]

General considerations

- Pay attention to timing of previously conducted reviews; if a previous review has been conducted, sufficient time should have elapsed to allow for the generation of an adequate amount of new evidence by other investigators (whether evolutionary or confirmatory)

- Some areas evolve faster than others (e.g., use of technology in educational settings) and therefore may warrant more frequent reviews (i.e., a shorter review timeframe).

Background

- Provide sufficient background to situate your review (i.e., show relevance for readers)

- Include a clear, poignant objective for this review.

Methods

- Clearly describe your search process, including search terms and combinations as appropriate

- For systematic reviews, explicit criteria for including or excluding identified articles from the review should be included, as well as an explicit timeframe over which the review was conducted

- Flowcharts, such as described in systematic review reporting criteria (e.g., PRISMA), can help the reader follow your search and inclusion process

- Report your software and analysis for meta-analyses (e.g., MIX 2.0 or RevMan).

Results

- As appropriate to your objective and methods, provide quantitative- or qualitative-synthesis of data from identified articles (Do not simply restate results from those articles)

- When appropriate, your review should include discussion of relevant, related topics and concepts

- Highlight unconventional or unexpected relationships noted during your review.

Implications

- Provide clear applications for pharmacy education and implications to theory and/or future investigations from the results of the review.

- This discussion should help build a pathway from review results towards practical implications for the academy.

A structured abstract using these section headings also should be submitted.
Educational Review Articles Format Guidelines:

. 5000 word limit (somewhat flexible - contact Editor-in-Chief)

. Review articles summarize prior literature and should not include the collection or analysis of new data

. Tables, figures, and references are not included in word limit.

Commentary

Issues in Pharmacy Education Article Content Guidelines

Articles in this category are informed opinions that foster scholarly dialogue on issues, trends, or findings believed to be important in the context of pharmacy education and related areas. Descriptions of original research results and educational innovations are not accepted as a Commentary, but may be appropriate for one of the other sections of the Journal. Articles in this category include the following components: [NOTE: bolded words represent the required article section headings]

Introduction

. Explain the controversy, issue, trend, or innovation in pharmacy education

. Describe your perspective and/or provide a framework for the commentary.

. Discuss its importance for readers and the academy-at-large.

Perspective or Commentary

. Discuss your perspective, while using an informed, scholarly tone

. Provide information to support your perspective (e.g. citations, experience).

Implications

. Provide suggestions and/or implications for moving forward for the academy-at-large.

A brief structured abstract using these section headings also should be submitted.

For more information, see Commentary announcement in CPTL.

Issues in Pharmacy Education Article Format Guidelines:

. 1500 word limit (somewhat flexible - contact Editor-in-Chief)

. No more than six references (not included in word limit)

. No more than a total of two figures and/or tables (not included in word limit)

. Commentaries should not include the description or analysis of new data

Teachable Moments Matter

Teachable Moments Matter (TMM) Content Guidelines:

TMM articles are intended to be instructive for readers and the academy-at-large. A TMM article is published alongside or within one issue of the original parent Original Research Article, Case Report, or Short Communication. The Editor-in-Chief will invite individuals with appropriate expertise to write these when a commentary may offer helpful suggestions on methodology for readers and the academy-at-large. These articles are written in collaboration with the original contributor(s). Articles in this category include the following components: [NOTE: bolded words represent the required article section headings]
Background
. Identify and describe the problem and/or limitation encountered during the associated study

Impact
. Describe the impact of this problem and/or limitation on study results, analysis, and/or generalizability/interpretation

Teachable Moment
. For other researchers, describe how this problem/limitation could have been prevented or avoided

A brief structured abstract using these section headings also should be submitted.

Teachable Moments Matter (TMM) Format Guidelines:
. 1500 word limit (somewhat flexible - contact Editor-in-Chief)
. No more than six references (not included in word limit)
. No more than a total of two figures and/or tables (not included in word limit)

Before You Begin
Ethics in publishing

For information on Ethics in publishing and Ethical guidelines for journal publication see https://www.elsevier.com/publishingethics and https://www.elsevier.com/journal-authors/ethics.

Human and animal rights

If the work involves the use of animal or human subjects, the author must ensure that the work described has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans https://www.wma.net/policies-post/wma-declaration-of-helsinki-ethical-principles-for-medical-research-involving-human-subjects; EU Directive 2010/63/EU for animal experiments http://ec.europa.eu/environment/chemicals/lab_animals/legislation_en.htm; Uniform Requirements for manuscripts submitted to Biomedical journals http://www.icmje.org. Authors must include a statement in the manuscript that informed consent was obtained for experimentation with human subjects. The privacy rights of human subjects must always be observed.

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All authors must disclose any financial and personal relationships with other people or organizations that could inappropriately influence (bias) their work. Examples of potential conflicts of interest include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. See also https://www.elsevier.com/conflictofinterest. Further information and an example of a Conflict of Interest form can be found at: https://service.elsevier.com/app/answers/detail/a_id/286.

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All authors should have made substantial contributions to all of the following: (1) the conception and design of the study, or acquisition of data, or analysis and interpretation of data, (2) drafting the article or revising it critically for important intellectual content, (3) final approval of the version to be submitted.

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You are requested to identify who provided financial support for the conduct of the research and/or preparation of the article and to briefly describe the role of the sponsor(s), if any, in study design; in the collection, analysis and interpretation of data; in the writing of the report; and in the decision to submit the article for publication. If the funding source(s) had no such involvement then this should be stated.

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Declaration of generative AI in scientific writing

The below guidance only refers to the writing process, and not to the use of AI tools to analyse and draw insights from data as part of the research process.

Where authors use generative artificial intelligence (AI) and AI-assisted technologies in the writing process, authors should only use these technologies to improve readability and language. Applying the technology should be done with human oversight and control, and authors should carefully review and edit the result, as AI can generate authoritative-sounding output that can be incorrect, incomplete or
biased. AI and AI-assisted technologies should not be listed as an author or co-author, or be cited as an author. Authorship implies responsibilities and tasks that can only be attributed to and performed by humans, as outlined in Elsevier’s AI policy for authors.

Authors should disclose in their manuscript the use of AI and AI-assisted technologies in the writing process by following the instructions below. A statement will appear in the published work. Please note that authors are ultimately responsible and accountable for the contents of the work.

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