Rwanda Medical Journal RMJ

ORIGINAL ARTICLE Open Access

Assessing the feasibility and acceptability of Lettersmith for assisting global health researchers in academic writing

Authors: Ella August[1,*]; Kirby Morris[1]; Rachel Gray[2]; Hana Teklu[3]; Julie M. Buser[2]; Olivia Anderson[4]; Tamrat Endale[2]; Matilda Klein; Zaria Griffin[5]; Yolanda R. Smith[6]

Affiliations: *[1]Department of Epidemiology, University of Michigan School of Public Health, Ann Arbor, MI, USA; [2]Center for International Reproductive Health Training (CIRHT), University of Michigan, Ann Arbor, MI, USA; [3]Department of Obstetrics and Gynecology, St. Paul's Hospital Millennium Medical College, Addis Ababa, Ethiopia; [4]Department of Nutritional Sciences, University of Michigan School of Public Health, Ann Arbor, MI, USA; Greenhills School Advanced Research Program, University of Michigan, Ann Arbor, MI, USA; [5]University of Michigan Summer Research Opportunity Program, Ann Arbor, MI, USA; [6]Department of Obstetrics and Gynecology, in the University of Michigan, Ann Arbor, MI, USA*

ABSTRACT

INTRODUCTION: Health researchers in low-resource settings often face barriers to publication due to limited access to training in academic writing. While generative artificial intelligence (genAI) tools are increasingly available, concerns about data privacy, accuracy, and user engagement may limit its use. Lettersmith is a free educational technology that helps writers learn to craft different types of writing, including academic writing. We tested the feasibility and acceptability of Lettersmith for improving manuscript abstracts among a small sample of African researchers who spoke English as their second language.

METHODS: Researchers attended a virtual two-hour pilot workshop during which they set up the software, practiced using it to improve their draft abstracts, and completed an evaluation survey. We asked participants to evaluate the software with surveys.

RESULTS: Nineteen researchers participated and 16 completed the evaluation. All found Lettersmith to be helpful for abstract revision, with 69% reporting it as extremely helpful and 31% as somewhat helpful. Getting oriented to the software was their biggest challenge. Nearly all participants (88%) said they would recommend Lettersmith to a colleague with great enthusiasm.

CONCLUSION: Lettersmith shows promise as a feasible and acceptable tool for supporting academic writing skill development among early-stage researchers in resource-limited settings

Keywords: Publishing, writing, global health, capacity building

INTRODUCTION

Health researchers from low and middle-income countries are underrepresented in the academic literature [1]. One major barrier to publication is the lack of access to training on academic

***Corresponding author:** Ella August, PhD, Clinical Associate Professor, Department of Epidemiology, University of Michigan School of Public Health, Ann Arbor, MI, USA; ORCID iD https://orcid.org/0000-0001-5151-1036, eaugust@umich.edu; **Potential Conflicts of Interest (CoI):** All authors: no potential conflicts of interest disclosed; **Funding:** Funding was provided by the Center for International Reproductive Health Training at the University of Michigan; **Academic Integrity.** All authors confirm that they have made substantial academic contributions to this manuscript as defined by the ICMJE; **Ethics of human subject participation:** The study was approved by the local Institutional Review Board. Informed consent was sought and gained where applicable; **Originality:** All authors: this manuscript is original has not been published elsewhere; **Review:** This manuscript was peer-reviewed by three reviewers in a double-blind review process.

Received: 8th January 2026; **Initial decision given:** 4th February 2026; **Revised manuscript received:** 6th February 2026; **Accepted:** 16th March 2026.
Copyright: © The Author(s). This is an Open Access article distributed under the terms of the Creative Commons Attribution License (CC BY-NC-ND) (click here) which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. **Publisher:** Rwanda Biomedical Centre (RBC)/Rwanda Health Communication Center, P. O. Box 4586, Kigali. ISSN: 2079-097X (print); 2410-8626 (online)

Citation for this article: Ella August; Kirby Morris; Rachel Gray et al. Assessing the feasibility and acceptability of Lettersmith for assisting global health researchers in academic writing. Rwanda Medical Journal, Vol. 83, no.1, p. 10-15, 2026. https://dx.doi.org/10.4314/rmj.v83i1.3

writing and publishing [2]. While some may choose generative artificial intelligence (genAI) to support this endeavor, such technology can be limited by data privacy, and potential inaccuracies [3]. Another shortcoming of genAI is the limited engagement required by users to generate text [4]. Lettersmith (https://lettersmith.ai.umich.edu/) [5] is a free educational technology that helps writers learn how to craft different types of writing, including academic writing; it was first introduced by researchers at the University of Michigan in 2019. Lettersmith is not powered by genAI, rather it is designed as a self-assessment tool, encouraging writers to reflect on their work [6], evaluate how their text compares to a set of criteria formatted as a checklist, and revise their text. Lettersmith's free and public availability enables access for users from any institution [7,8]. The authors chose Lettersmith because it offers a free, accessible, structured, and non-automated approach to strengthening academic writing skills in resource-limited settings.

Participants in our study had recently completed a research training program that included a component on scientific writing. This program was administered in English and the participants aspired to publish in English-language journals. As second language speakers, learning to write an academic journal article is even more challenging compared to those for whom English is the first language [9,10]. A common misconception, however, is that second language speakers learning academic writing primarily struggle with "sentence-level" issues such as spelling and grammar [9,10]. However, the biggest challenge is actually learning academic writing conventions including the standard arguments used, such as pointing out the research gap in the introduction section of an abstract and paper [9,10]. Lettersmith addresses this challenge by helping writers gain hands-on experience with developing their writing, focusing in this case on the standard arguments and content that should be included in a typical journal article abstract. To assess the practical application of Lettersmith in a real-world setting, this study aimed to test the feasibility and acceptability of using Lettersmith to improve draft manuscript abstracts from a small sample of African health researchers who spoke English as their second language. Researchers attended a virtual two-hour pilot intervention workshop during which they set up the free software, completed the checklist and abstract revision process, and provided feedback through an evaluation survey.

METHODS

Intervention

Our study used a quasi-experimental intervention design. The pilot workshop consisted of guidance on registering for and setting up the Lettersmith software, individual work time for participants to compare their draft with checklist items and revise, and a post-workshop survey. Participants had the option to bring their own unpublished or published draft abstract, or to use a colleague's abstract draft (with their permission). None of the participants previously participated in similar workshops.

We offered the pilot workshop on 11 July and 18 November, 2024; the second session was for those who missed the first. The study population consisted of clinician researchers who previously completed a research capacity training program that incorporated a manuscript writing and publication component [11,12]. All who completed the research capacity program (N=89) were invited to participate in this study via email.

Within the Lettersmith software, we created an abstract writing template with a checklist of standard items that should be included in a quantitative manuscript abstract, based on relevant scholarship and standard scientific article writing guides [13–17]. These checklist items appear in the Supplementary Material and the template is available through the free Lettersmith platform. We pre-tested the Lettersmith template and our workshop protocol with four individuals who had quantitative study abstracts. The focus on quantitative research in the pre-test and main pilot study provided a homogenous sample for this small-scale evaluation. Based on feedback from these individuals, we modified our protocol for efficiency and clarity.

Data collection

Though we did not collect demographic data, we provide information about the target population from which the sample was drawn in the results section. We developed an original survey to assess the feasibility and acceptability of the software for academic writing. The exact wording of the survey items reported is shown in Tables 1 and 2 along

with corresponding data.

Data nalysis

Simple descriptive statistics were used to report our results, which is appropriate for small-scale pilot studies and provide clear insights into feasibility and acceptability.

The study was designated as exempt by the University of Michigan Institutional Review Board (HUM00251321).

RESULTS

Participants were drawn from a sample of clinician researchers in Rwanda, Uganda, and Zambia who were part of a research capacity program [18]. These researchers included mixed gender obstetric/gynecologists, nurses, and midwives working in the area of reproductive health. Their highest degrees earned included primarily medical degrees, master's degrees and PhDs [18]. Nineteen health researchers were present for at least 90 minutes of the two-hour workshop, and we present data from the 16 who completed the evaluation survey.

Feasibility

Feasibility was demonstrated by successful participation and ability to use Lettersmith.

Table 1: Feasibility and acceptability of the Lettersmith educational software among 16 African pilot workshop participants

Survey items	N	%
Feasibility		
How helpful did you find Lettersmith in revising your journal article abstract?		
Extremely helpful	11	69
Somewhat helpful	5	31
Neutral	0	-
Not helpful	0	-
Very unhelpful	0	-
Acceptability		
Would you recommend Lettersmith to a colleague for academic writing?		
Yes, with great enthusiasm	14	87.5
Yes, with limited enthusiasm	2	12.5
No, I would not recommend it	0	-

Sixty nine percent found software extremely helpful and 31% somewhat helpful for revising their abstracts (Table 1). No participants indicated the options "neutral," "not helpful," or "very unhelpful." While most found the software helpful, some challenges were noted in getting oriented and setting up, suggesting that, with minor improvements, the software is feasible for use in similar settings (Table 2).

Acceptability

Acceptability was reflected in positive user reactions and willingness to recommend or reuse Lettersmith. Most (87.5%) of participants reported they would recommend the software to a colleague with great enthusiasm, and 12.5% with limited enthusiasm, and no participants indicated they would not recommend it (Table 1). Qualitative feedback indicates the checklist items helped guide them to revise their abstract, and the template guided productive abstract revision (Table 2).

DISCUSSION

Our results indicate high feasibility, as health researchers were able to participate in and use the software successfully, and high acceptability, with most finding the software helpful and willing to recommend it to others. These findings suggest that Lettersmith is both feasible to implement and acceptable to participants in this context. The overwhelmingly positive feedback demonstrates the tool's potential value, while the reported challenges around software setup and orientation can inform future improvements for broader adoption and ease of use.

Lettersmith leverages the power of self-assessment, positioning writers in a metacognitive mode that encourages them to view their work with "fresh eyes" [19]. This reflective mode, in which writers consider their text from a distance—helps them think through and decide what revisions are necessary [20]. Beyond revising specific documents, the self-assessment approach helps to build a writer's critical thinking and writing skills [19,21].

One major challenge identified during the workshop was its limited length. Due to participants' competing time demands, the intervention was restricted to two hours, which was enough for

Table 2. Responses to two open-ended questions about the challenging and helpful aspects of Lettersmith among African pilot workshop participants

What did you find challenging or less helpful (if anything) about Lettersmith?	What did you find helpful (if anything) about Lettersmith?
The inability to highlight the gap in my draft	The checklist/prompts
None	the itemized structure of an abstract
Tagging is still my challenge	I need to learn more about letter smith
It appears when the same section of the abstract is tagged on several elements, it duplicates them on the abstract. It is difficult to correct such in a rash.	The checklist reminder format
	It provides a very good guideline or framework for ensuring every element of the abstract is included and non is left out. Provides opportunity to edit and address the missing elements before finalizing the abstract.
Navigating the system at the start	
It literally uses my own draft to make an almost identical copy of it.	Correcting grammatical errors
	It guided me on the complete components needed in an abstract and how they need to be chronologically arranged.
It is new and need more practice	
to extract the reviewed abstract	Very helpful
At the beginning I was unable to follow the steps to find where I can start writing however, the team helped me to reach and I am thankful to them and the presenter.	the check up
	help to tackle on all essential elements to include in the abstract
The logging in process is too long	
	First of all, its new to me. I really loved how it can give you all the necessary steps to complete your abstract. Also, the way it reminds the author what to include and not
the codes involved*	
Nil	It fine tunes each and every part of the document.
the codes*	The ease of navigation
	Guidance on how a good abstract should be
	the software tags important parts that should be included in the abstract

** The codes refer to the code needed to enter the software application. This process is now streamlined and simplified in the software.*

registration and orientation, but insufficient for most to fully revise their abstracts. Future full-scale Lettersmith interventions could focus on registration and orientation, allowing participants to revise their abstracts independently at their own pace. Alternatively, a pre-recorded video could be developed for setup, enabling the workshop to focus exclusively on using a Lettersmith template to revise a draft. Participants also reported difficulty getting oriented to the software. Additionally, through informal conversation, we learned that some accessed Lettersmith via their phones, a common way for this participant population to engage with technology. The development of a mobile app would likely improve convenience. We shared this feedback with the software developers,

who are currently exploring updates to include an app.

This study's limitations include a small, self-selected sample, and potential technology barriers, such as challenges with software setup and mobile access. The reliance on self-reported measures, a short-term evaluation, and the absence of a comparison group also restrict the generalizability and interpretation of the results.

CONCLUSION

Lettersmith shows promise in supporting early-stage researchers as they develop academic writing skills. The software is free and can be used by anyone, provided an appropriate template exists. Templates can be created in the free software by anyone. Increasing access to knowledge about scientific writing can help address power imbalances in academic publishing, particularly as academic language is exclusionary and publishing is characterized by entrenching inequities. Making such knowledge explicit and providing access to free training will help to reduce the power imbalance that currently exists due to lack of access to training on scientific writing.

REFERENCES

1. Rees, C.A.; Ali, M.; Kisenge, R.; Ideh, R.C.; Sirna, S.J.; Britto, C.D.; Kazembe, P.N.; Niescierenko, M.; Duggan, C.P.; Manji, K.P. Where There Is No Local Author: A Network Bibliometric Analysis of Authorship Parasitism among Research Conducted in Sub-Saharan Africa. BMJ Glob. Health 2021, 6, e006982, doi:10.1136/bmjgh-2021-006982.
2. Busse, C.E.; Anderson, E.W.; Endale, T.; Smith, Y.R.; Kaniecki, M.; Shannon, C.; August, E.T. Strengthening Research Capacity: A Systematic Review of Manuscript Writing and Publishing Interventions for Researchers in Low-Income and Middle-Income Countries. BMJ Glob. Health 2022, 7, e008059, doi:10.1136/bmjgh-2021-008059.
3. Flanagin, A.; Bibbins-Domingo, K.; Berkwits, M.; Christiansen, S.L. Nonhuman "Authors" and Implications for the Integrity of Scientific Publication and Medical Knowledge. JAMA 2023, 329, 637, doi:10.1001/jama.2023.1344.
4. OpenAI ChatGPT Model (GPT-4). Available online: https://chatgpt.com/ (accessed on 30 August 2024).
5. Hui, J.; Sprouse, M.L. Lettersmith: Scaffolding Written Professional Communication Among College Students.; New York; USA, 2023; pp. 1–17.
6. Andrade, H.; Valtcheva, A. Promoting Learning and Achievement through Self-Assessment. Theory Pract. 2009, 48, 12–19, doi:10.1080/00405840802577544.
7. Gersten, Z.P.; Zamora, A.N.; August, E.; Anderson, O.S. An Evaluation of Lettersmith: A Technology Tool to Support Transparency of Assigned Public Health Writing. Pedagogy Health Promot. 2025, 23733799251314412, doi:10.1177/23733799251314412.
8. Zamora, A.N.; August, E.; Anderson, O.S. Implementation of Lettersmith to Improve the Writing Process among Graduate-Level Public Health Students: Results from a Pilot Evaluation Study. Educ. Technol. Res. Dev. 2025, 73, 1519–1537, doi:10.1007/s11423-025-10456-3.
9. Feedback in Second-Language Writing: Contexts and Issues; Hyland, K., Hyland, F., Eds.; 2nd ed.; Cambridge University Press: Cambridge, UK, 2019;
10. Research Literacies and Writing Pedagogies for Masters and Doctoral Writers; Badenhorst, C., Guerin, C., Eds.; Studies in Writing; Brill: Leiden, 2016; Vol. 31; ISBN 978-90-04-30432-1.
11. Busse, C.; August, E. Addressing Power Imbalances in Global Health: Pre-Publication Support Services (PREPSS) for Authors in Low-Income and Middle-Income Countries. BMJ Glob. Health 2020, 5, e002323, doi:10.1136/bmjgh-2020-002323.
12. Buser, J.M.; Morris, K.L.; Millicent Dzomeku, V.; Endale, T.; Smith, Y.R.; August, E. Lessons Learnt from a Scientific Peer-Review Training Programme Designed to Support Research Capacity and Professional Development in a Global Community. BMJ Glob. Health 2023, 8, e012224, doi:10.1136/bmjgh-2023-012224.
13. Swales, J.M. Genre Analysis; Cambridge University Press: Cambridge, UK, 1990.
14. August, E.; Brouwer, A. How to Write an Effective Journal Peer Review Using a Staged Writing Approach: A Best-Practice Guide for Early-Career Researchers. Int. J. Epidemiol. 2024, 53, 1–7, doi:doi:10.1093/ije/dyae154.
15. ICMJE (International Committee for Medical Journal Editors) Preparing a Manuscript for Submission to a Medical Journal Available online: https://www.icmje.org/recommendations/browse/manuscript-preparation/preparing-for-submission.html#b (accessed on 15 November

2024).
16. COPE (Committee on Publication Ethics) Promoting Integrity in Research and Its Publication Available online: https://publicationethics.org/ (accessed on 30 August 2024).
17. Equator Network STROBE Statement--Checklist of Items That Should Be Included in Reports of Cross-Sectional Studies; Available online: https://www.equator-network.org/ (accessed on 15 November 2024).
18. Buser, J.M.; Tengera, O.; Jiang, C.; Kumakech, E.; Gray, R.; Mukeshimana, M.; Kaberuka, G.; Bazakare, M.L.I.; Ayikoru, J.; Ntasumbumuyange, D.; et al. Impact of a Comprehensive Two-Year Research Capacity Intervention with Sexual and Reproductive Health Researchers in Sub-Saharan Africa. Reprod. Health 2025, 22, 94, doi:10.1186/s12978-025-02047-5.
19. Tully, L.D. Reverse Outlines: Fueling Revision & Preparing for Writing Conferences. Second Draft 2019, 32, 9–13.
20. Bean, J.C.; Melzer, D. Engaging Ideas : The Professor's Guide to Integrating Writing, Critical Thinking, and Active Learning in the Classroom; 3rd ed.; Jossey-Bass: Hoboken, NJ, 2021; p. 380.
21. Dwyer, C.P.; Hogan, M.J.; Stewart, I. An Integrated Critical Thinking Framework for the 21st Century. Think. Ski. Creat. 2014, 12, 43–52, doi:10.1016/j.tsc.2013.12.004.