



Recommendations for a Classification of AI Use in Academic Manuscript Preparation

APRIL 7, 2025

INTRODUCTION

This document presents a classification of various ways that AI can be used to assist with preparing academic manuscripts. It may serve as a framework for publishers to develop policies on how AI in manuscript preparation may be used and should be declared by authors.

Publishers are encouraged to consider whether declarations by authors may be needed at the submission stage, as well as whether declarations should be included in a manuscript and final publication in accordance with their own guidelines and policies.

This classification was developed by the STM Association Task and Finish Group on AI Labelling Terminology for Research Content Declaration.

Context

Publishers often provide guidelines for authors to transparently declare any human assistance in manuscript preparation, for example from professional language editing services.

However, recent developments in AI – particularly generative AI – have led to rapid expansion in the capabilities of machine tools to assist with writing, editing, and even enhancing research manuscripts with images and diagrams. Publisher guidelines have not kept pace with these technological developments, leading to uncertainty amongst:

- Authors, about their obligations to declare their use of AI assistance;
- Peer reviewers, about acceptable AI use and declarations in manuscripts; and
- Readers, about AI- vs. human-generated content in publications.

This uncertainty, particularly the lack of transparency around AI contributions to publications, poses a risk to the integrity of academic publishing. Clear definitions and standards are needed to facilitate the development of guidance and policies regarding the declaration and use of various kinds of AI assistance in manuscript preparation.

Clear definitions & standards are essential for developing guidance & policies on the declaration & use of AI assistance in manuscript preparation.

Limitations of Scope

This classification explicitly does not aim to:

01 **Classify uses of AI in research processes.**

There are many ways in which machine tools can be used in research processes, for example to gather or analyse raw data. This classification addresses only the use of AI assistance for the preparation of manuscripts intended for publication in the scholarly communication ecosystem

02 **Recommend or harmonise publisher policies around any use and/or declaration of the use of AI.**

The [2023 STM guidelines](#) outlined ethical and practical considerations regarding the use of AI in the publication process. This work further defines and classifies various AI activities by authors specifically. However, actual policy decisions about what is permitted or expected to be declared remain the responsibility of publishers (in collaboration with research communities), as expectations and standards may vary in different fields.

Recommendations

We recommend that publishers of academic research consider each of the AI-assisted activities defined in this classification, possibly in conjunction with the 2023 STM guidelines and:

- Determine whether each activity is permissible for authors to use when preparing manuscripts, and ensure clear policies are available to authors.
- Determine which permitted AI activities must be transparently declared during the submission process.
- Determine which permitted AI activities must be declared in the content of manuscripts, to be included in the final publication.
- Provide clear guidance to authors about policies regarding the use and declaration of AI assistance in preparing manuscripts.

Recommended Classification

	Use of AI in the preparation of academic manuscripts (*)	What	Examples	Does NOT include
1	Refine, correct, edit, or format the manuscript to improve clarity of language (**)	Automated tools were used to suggest language improvements	Spell checkers, grammar checkers, predictive text in Microsoft Word	Generating text using AI prompts, generating machine summaries of text, analysing or summarising textual documents as part of the research process
2	Writing or drafting manuscript content	AI was used to create part or all of the manuscript text	Generating text using AI prompts, asking AI to expand on text, generating machine summaries of text (e.g. to summarise arguments made in another publication)	Use of simple spelling and grammar checkers, analysing or summarising textual documents as part of the research process
3	Translation of manuscript text for the purpose of publishing (***)	AI was used to assist translation of an author's original work into a secondary language	Authors using tools (e.g. Google translate, ChatGPT) to assist with translating their manuscript draft	Translation of materials as part of the research process (unrelated to manuscript preparation)
4	Refining or formatting of data reported in the submitted manuscript	Data reported in the submitted manuscript (e.g. included as supplementary material, or stored in a data repository linked to from the manuscript) are refined or formatted using AI	Authors using tools to correct (e.g. on the level of language) or format research data before it's published	Using AI to visualise data sets (activity 6) or data manipulation; any generation, correcting, or editing of data used as part of the research process
5	Generation, refinement, correction, editing or formatting of images, diagrams or other figures for illustrative purposes only	AI was used to generate images or diagrams or other figures in the manuscript for illustrative or aesthetic purposes only	Using AI to create an image of e.g. people farming in an ancient society - the sort of image that might otherwise be created by a human artist as an illustration	Visualisation of actual data or research outputs, editing of visualisations of actual data or results, presentation of generated images as research outputs in themselves or as representing research outputs
6	Generation, refinement, correction, editing or formatting of visualisations of research data or results	AI tools were used to visualise or refine visualisations of research data/results	Using AI to generate a graph or other visualisation of a given research data set	Generation of images or other content without any basis in real research data/outputs
7	Refinement or formatting of code reported in the submitted manuscript.	AI tools were used to assist with refinement of the presentation of code within the manuscript	Using AI to assist with human assessment to improve the readability of code submitted as part of a manuscript	Code generated or improved by AI that was used for the research itself; any new code generated by AI alone
8	Assisting with compilation of reference lists	AI tools were used to create or suggest references to include in the manuscript	Asking AI to generate a list of articles that are related to the research to use as references	AI generation of plausible-sounding references that do not exist; using automated tools to generate a citation in a particular style/format based on a DOI
9	Presentation of any kind of content generated by AI as though it were original research data/results from non-machine sources (****)	AI was used to create data, text, images, graphs, spectra, or other content that is presented as though it were original research data/results collected or analysed from other, non-machine sources	Any content generated wholesale by AI without any basis in original research data/outputs, presented as though it <i>is</i> based on original data/results	Using AI to visualise original research data/results (activity #6); carrying out research on the outputs of GenAI (in which case GenAI outputs can be considered research data)

(*) Note that use of AI in other stages of research processes is outside the scope of this classification. This classification considers only activities that use AI to assist with the preparation of manuscripts.

(**) 2023 STM Guidelines recommend: disclosure not necessary

(***) It is understood that, under copyright law, it remains the right of the right holder to authorize, or not, a work's translation

(****) 2023 STM Guidelines recommend: this use of AI not allowed

We welcome your feedback on these recommendations

Please share any input by May 31, 2025 to joris@stm-solutions.org. Thank you.