

Scientific Writing Assessment Guide for Faculty Use

Purpose

Graduate students in the health professions must achieve a basic level of scientific writing proficiency for successful graduate program progression and practice innovation dissemination. Due to varying levels in writing proficiency, faculty workload for student mentorship can be difficult to predict. A single cohort of students is likely to require faculty coaching and guidance to develop skills ranging from fundamental to advanced. The Scientific Writing Assessment (SWA) is an instrument intended to distinguish and quantify scientific writing skills to aid faculty in identifying and prioritizing development needs, giving clear and consistent feedback, and monitoring progress toward writing goals.

Description

The SWA is a writing competency rubric that includes 13 skills within 3 categories. Each skill is scored on a scale of 1-5 indicating high (5), moderate (3-4), and low (1-2) levels of proficiency.

Item Assessment

Fundamental Skills

The Fundamental Skills category contains four items that pertain to English language skills, reference style format, adherence to assignment-specific rubrics, and efficiency in presenting information. Proficient students clearly and concisely present all required information in the appropriate section of the paper, and follow the reference and citation style guidelines.

What to look for:

- Lengthy sentences
- Spelling, punctuation, or grammatical errors that are pervasive
- Unnecessarily complex terminology
- Use/overuse of acronyms
- Alignment with required elements of course-specific or standardized rubrics

Information Literacy and Integrity

There are four items within the Information Literacy and Integrity category pertaining to presentation of detailed evidence, number and type of sources, and skill with regard to paraphrasing and citing source content. Proficient students present evidence from a comprehensive selection of research studies, primarily from scholarly or peer-reviewed sources. They provide specific details that relate to the stated purpose of the paper. They cite the primary source of the data and paraphrase the content in their own words accurately.

What to look for:

- Long passages of text with very few or no cited sources
- Use of a single citation for disparate data, i.e. a disorder's prevalence, treatment, and effects
- A reference list that is too limited to achieve the objectives of the writing assignment
- Prolific use of non-scholarly websites for sources of information
- Identification of exact text matches using plagiarism detection software (strongly encouraged) or a search engine browser

Organization, Conceptualization, and Critical Analysis

The Organization, Conceptualization, and Critical Analysis category contains five items that pertain to focus, organization, critical appraisal, and synthesis. Proficient students clearly identify the focus of the paper and provide relevant details throughout that align with its overall focus and purpose. The writer uses meaningful headings to guide the reader and maintain the central focus. There is a logical flow that builds support for the problem's significance and need for the proposed study. The discussion of research evidence is integrated and organized by topic with a critical examination of the strengths and weaknesses of individual studies and/or the body of literature as a whole.

What to look for:

- The faculty reviewer frequently returns to earlier pages or sections of the paper due to confusion
- The background contains no meaningful subheadings to organize content within the larger heading of Introduction/Background
- There is incongruity between the stated purpose, methods, approach to data collection, data analysis, results, interpretation, or conclusions
- The presentation of evidence is limited to a summary of the study's findings without a discussion of the strengths and weaknesses of the evidence nor its applicability to the student's work
- Studies presented are discussed one paragraph at a time and/or include details that are irrelevant to the overall findings of the study or the student's purpose

Scores and Interpretation

The maximum score possible for the SWA is 65 points with 20 points possible for Fundamental Skills, 20 for Information Literacy and Integrity, and 25 for Organization, Conceptualization, and Critical Analysis. Scores for individual items can be used to identify specific skill deficits or added to calculate the overall subscale score in each category or the total SWA proficiency score.

Recommendations for Use

Because the assessment of writing proficiency is subjective, graduate faculty are encouraged to engage in training to build consensus regarding student performance expectations and to achieve consistency regarding feedback on writing assignments within an academic program. Scores can provide quantitative data to assess students during the admission process, at program entry, and to monitor progress over time throughout the program of study.

It is recommended that faculty and administration use numeric scores only for the purposes of identifying student, faculty, and program resource needs. SWA scores do not replace narrative feedback. Students require specific feedback and coaching to develop scientific writing skills. The SWA can be used to:

- educate students regarding scientific writing expectations
- facilitate peer review assignments within courses
- guide individualized coaching and ongoing evaluation by program faculty or Master's and doctoral advisors who serve as writing mentors

Scientific Writing Assessment

Score each of the thirteen criteria on a scale from 1 to 5.

sub-
total

Fundamental Skills		
Grammar, Punctuation, and Spelling <i>Comment:</i>		
Format and Style <i>Comment:</i>		
Adheres to Standard Structure / Rubric <i>Comment:</i>		
Concise / Non-redundant <i>Comment:</i>		
Information Literacy and Integrity		
Substantive Content <i>Comment:</i>		
Primary Sources <i>Comment:</i>		
Paraphrasing <i>Comment:</i>		
Selection of Scholarly Sources <i>Comment:</i>		
Organization, Conceptualization, and Critical Analysis		
Clear and Narrow Focus <i>Comment:</i>		
Organization / Use of Headings <i>Comment:</i>		
Organization / Logical Flow <i>Comment:</i>		
Critical Appraisal <i>Comment:</i>		
Synthesis of Evidence <i>Comment:</i>		
Total		

† Include score and comments. See description below for scoring individual components.

Scientific Writing Assessment Scoring Rubric

Skill	1 – 2 Low	3 – 4 Moderate	5 Proficient
Fundamental Skills			
Grammar, Punctuation, and Spelling	Pervasive errors that indicate a need for remediation.	Minor to moderate number of grammar, punctuation, or spelling errors that are not pervasive.	Minimal to no significant grammar, punctuation, or spelling errors.
Format and Style	Minimal to no adherence to reference and citation style guide regarding in-text and reference list citations, margins, headings, abbreviations, tables, and figures, etc.	Partial adherence to reference and citation style guide regarding in-text and reference list citations, margins, headings, abbreviations, tables, and figures, etc.	Full adherence to reference and citation style guide regarding in-text and reference list citations, margins, headings, abbreviations, tables, and figures, etc. with few errors.
* Adherence to Standard Structure / Rubric	** Less than 60% of key elements in Introduction, Methods, Results, Discussion, and Conclusions included.	** Approximately 60-80% of key elements in Introduction, Methods, Results, Discussion, and Conclusions included.	** 80-100% of key elements in the Introduction, Methods, Results, Discussion, and Conclusions included.
Concise / Non-Redundant	Frequent repetition of information within or between subsections of the paper.	Occasional repetition of information within or between subsections of the paper.	Rare or no repetition of information within or between subsections of the paper.
Information Literacy and Integrity			
Substantive Content	Limited to no research evidence cited within lengthy passages of paper.	Research evidence cited, but it is insufficient or presented with insufficient detail to support writer's statements.	Research evidence cited is extensive and detailed. Thoroughly supports writer's statements.
Primary Sources	Erroneous citation of secondary sources as primary (i.e. citing information found in a study's introduction or review article as original findings). Lacks identification and citation of unique findings / conclusions of review articles.	Citation of secondary source correctly according to reference style standards when primary source is accessible or correct citation of unique findings, but failure to clearly identify source as a review.	Citation of primary sources or correct citation of secondary sources when primary source is inaccessible. Correct citation of unique findings and clear identification of sources as reviews when indicated.
Para-phrasing	Overuse of quotes in lieu of paraphrasing when appropriate or verbatim statements from source content without use of quotation marks (plagiarism).	Paraphrasing with insufficient change to either verbiage or structure of source content.	Accurate and succinct paraphrasing with sufficient change to verbiage and structure of source content.
Selection of Scholarly Sources	Abundant use of non-scholarly or potentially biased sources including: continuing education articles, non-professional websites, etc.	Combined use of scholarly and non-scholarly sources.	Exclusive use of scholarly sources as evidence (i.e. government or professional organization data and reports) and peer-reviewed sources.
Conceptualization and Critical Analysis			
Clear and Narrow Focus	Frequent deviation from major theme. Unclear or unfocused presentation.	Occasional deviation to irrelevant or peripherally related content, but returns to major theme.	Topic of interest clearly identified and paper's content closely relates to major theme.
Organization / Headings	Minimal or no use of headings and subheadings to guide reader.	Use of major headings, but subheadings are insufficient to guide reader.	Use of major headings with sufficient, meaningful subheadings to guide reader.
Organization / Logical Flow	Paper rarely follows a predictable and logical pattern with no clear alignment between stated purpose, methods, results, and conclusions.	Paper occasionally follows a predictable and logical pattern, but lacks consistency and/or alignment between stated purpose, methods, results, and conclusions.	Paper consistently follows a predictable and logical pattern building toward and demonstrating alignment between stated purpose, methods, results, and conclusions.
Critical Appraisal	Literature summary only with minimal or no critical appraisal of research evidence.	Critical appraisal limited in amount and scope, i.e. to sample size or need for continued research.	Comprehensive appraisal of relevant research evidence with detail of its appropriateness, applicability, quality, etc.
Synthesis	Minimal or no integration of information throughout paper.	Partial integration of information in some, but not all parts of paper.	Comprehensive integration of information from multiple sources within paragraphs or subsections of paper.

* Based upon a standardized or course-specific rubric.

** For proposals, Introduction and Methods sections only apply.