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| **THEME 4.** **SCIENTIFIC LITERATURE ANALYSIS.**  **WRITING SCIENTIFIC ARTICLES** |

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| Learning outcomes  This lesson offers you opportunities to:   * Gain an overview about a research article or paper; * Acknowledge about steps for drafting a research paper; * Develop note-taking skills while watching speech; * Gain a clear sense of tools and resources that should be used; * Reflect your understanding about writing a research article or paper.   *Key-words: detailed study, evaluation, interpretation, empirical evidence,* *outline, preliminary research, first draft, cite, edit, proofread.* |

A research article or paper is a kind of scientific writing that offers an extensive study, evaluation, or elucidation of a certain subject, supported by empirical evidence. Analytical essays and research papers have commonalities; nevertheless, research papers are distinguished by their emphasis on statistical data and prior r esearch, along with strict adherence to citation protocols. The length of a research paper depends on the selected topic or assignment. Research papers often vary in length from 4,000 to 6,000 words, however shorter papers of around 2,000 words and lengthier papers exceeding 10,000 words are also frequently seen. Presented above are detailed directives for composing a research article:

**Understand the assignment:** Start by conducting a comprehensive review of the assignment and meticulously analyzing the writing prompt. Be aware of the technical specifications including the length, formatting (single or double spacing, indentations, etc.), and citation style. It is important to focus on the specifics, including the necessity of writing an abstract or incorporating a cover page.

**Choose your topic:** Choose a topic that you are personally drawn to. It is advisable to select a topic that meets both criteria, providing a significant amount of information while also maintaining your engagement.

**Gather preliminary research:** Resources can be obtained through online platforms or in traditional library settings. When conducting an internet search, it is essential to select reliable sources, such as scientific publications or academic articles. When conducting your search, it is essential to recognize the distinction between primary and secondary sources. Primary sources include firsthand testimonies, such as published articles or autobiographies, while secondary sources are more distant, including critical reviews or biographies derived from second-hand information. In conducting research, it is often more beneficial to swiftly review sources instead of thoroughly reading each potential source in its entirety. Should a source appear to be of significance, retain it for future reference.

**Write a thesis statement:** A commendable method to start a research article is by articulating a thesis statement. The thesis statement not only prepares the reader but also aids in evaluating the article's significance to other scholars in their studies. It is prudent to examine the thesis statements of other research articles to evaluate their relevance and applicability to your own study. An articulate thesis statement succinctly conveys the essential elements of the topic without superfluous elaboration. If you struggle to express your views, consider reformulating your issue as a question and then provide a response.

**Determine supporting evidence:** To find your supporting evidence, it is standard practice to meticulously scrutinize each source and document relevant information. Restrict your incorporation of content to that which is directly relevant to your circumstances. Refrain from including superfluous or supplementary information, regardless of its humorous nature. Furthermore, it is essential to meticulously document the page numbers, since they will be vital for citations and further reference.

**Write a research paper outline:** Initiate the outlining process by creating a detailed inventory of essential categories and subtopics for inclusion. Evaluate the material collected during the compilation of your supporting evidence and choose the most efficient approach to classify and organize it. Upon identifying the topic, consider the most effective means of communication. Consequently, it is prudent to divide your blueprint into separate sections. It gives you more authority in directing the flow and direction of the research report. Addressing structural issues at the early planning phase is more beneficial than doing it after the whole writing process is completed. Incorporate your supporting evidence into your strategy as well.

**Write the first draft:** Upon completing your outline, you may start the development of your research report. This phase might be arduous and formidable; yet, with enough preparation and a thorough strategy, everything should unfold seamlessly. Commence with the articulation of your thesis statement, followed by more background material in the introduction. Reserve the exact information for the main body of your research report. Adhere to your plan and advance methodically, tackling each paragraph sequentially. Be assured that attaining perfection in every phrase is unnecessary at this time, since this is only the preliminary draft. Upon completion of the body of your document, it is essential to comprehend the effective formulation of a conclusion for your research paper. It is essential that your research paper conclusion, like to an essay conclusion, successfully reiterates your thesis, supports your primary evidence, and offers a succinct summary of your findings in a clear and comprehensible way.

**Cite your sources correctly:** Two citation formats are frequently utilized in academic research articles: MLA (Modern Language Association) and APA (American Psychological Association). Comprehending citations can initially present challenges due to their precise guidelines and intricate content. Upon achieving proficiency in these skills, you will accurately attribute your sources with ease.

**Edit and proofread:** Finally, it is essential that you carefully examine your research report for any possible flaws. We recommend doing two comprehensive reviews: one to examine structural issues, including the addition or deletion of paragraphs, and another to address language, grammar, and spelling mistakes. Rather of multitasking, doing distinct editing sessions for each subject allows for focused attention on a single topic at a time.

**Tools and resources:** **Google Scholar** is a dedicated search engine that only retrieves academic resources. Investigating novel research and sources is an admirable approach.

**Zotero** is a research management tool that is both freemium and open-source. It serves as a hybrid of a content management system (CMS) for organization and an academic research search engine. This tool enables efficient online searches for research resources relevant to your subject and facilitates easy sharing with others. Furthermore, it independently generates citations.

**Focus Writer:** Comprehensive study papers will routinely assess your capacity for sustained concentration. This platform may help you reduce distractions for prolonged durations. This is a minimalist word processing application that removes any distracting elements, enabling you to focus only on your typing. Users may build personalized backgrounds, and the program provides extra features like as scheduled alarms, daily targets, and the option to include typewriter sound effects.

**Google Charts:** This Google tool is both beneficial and complimentary, enabling the creation of basic charts and graphs from the data you provide. Charts and graphs are useful visual instruments for presenting numerical data and serve as a great adjunct for addressing intricate empirical research.

**Grammarly** provides extensive support beyond grammar, aiding in vocabulary enhancement, plagiarism detection, tone identification, and many functionalities. Grammarly's suggestions may aid non-native English speakers in improving their language proficiency, while native English speakers may also benefit from them.

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| **Activity 1. Reading. Read the text and answer the following questions.** |

1. What is a research paper or article? What is the need of understanding it?
2. What is preliminary research in the context of article writing?
3. What elements are fundamental in composing a research paper or article?
4. Are you familiar with the proper citation of your sources?
5. What tools and resources are available for composing research papers?

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| **Activity 2. Watch the video about “IMRD: The Parts of a Research Paper”, make notes on while watching.** |

You tube link: <https://www.youtube.com/watch?v=aO6ipI-d2fw&ab_channel=WordviceEditingService>

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| **Activity 3. Speaking. Answer the following questions.** |

1. What is the meaning of the acronym IMRD?
2. What types of inquiries should be addressed while composing your paper?
3. In which section of your article should you articulate the rationale for your research?
4. What elements should be included into the content of your introduction?
5. What is the objective of the techniques and materials part of your paper?
6. What is the purpose of the results part of your paper?
7. Where should you provide the texts, tables, and figures of your research?
8. What is the most substantial aspect of your research?
9. Where should the final summary and conclusion be incorporated?
10. What is the concluding statement of your paper?

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| **Activity 4. Listening. Complete the notes below. Write ONE WORD ONLY for each answer.** |

**IMRD: The Parts of a Research Paper**

IMRD is a structure that consists of four basic parts: the introduction, methods of materials, results and discussion sections.

***Manuscript formatting:***

* It is the most commonly used by journals and academic bodies;
* Provides a 1\_\_\_\_\_\_\_\_\_\_\_ flow that mimics the basic structure of the scientific process;
* The sections of the paper follow general rules about how information is presented, moving from the general to the more 2\_\_\_\_\_\_\_\_\_\_\_.

***Introduction:***

* The goal is to supply 3\_\_\_\_\_\_\_\_\_\_\_\_\_\_ information to allow readers to evaluate the results of present study;
* Explain your reasons for conducting this study;
* Include a 4\_\_\_\_\_\_\_\_\_\_\_\_ for the study, brief background, study objectives and a review of the literature.

***Methods and materials:***

* The purpose is to state in clear 5\_\_\_\_\_\_\_\_\_\_\_ what you used for the study and how exactly you carried it out;
* Include study design, study materials, answer the question what was done to the material and how are the effects 6\_\_\_\_\_\_\_\_\_\_\_\_;
* It only focuses on the very specific details of how your study was carried out.

***Results:***

* The goal is to show the detailed results of the study in 7\_\_\_\_\_\_\_\_\_\_ order;
* Break these into subsections, but with a little bit more explanation;
* Include any key findings, text tables, figures and 8\_\_\_\_\_\_\_\_\_\_\_\_ analysis.

***Discussion:***

* The aim is to explain the overall outcome of the study results on the specific area of study;
* Include a 9\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of major findings, strengths and pitfalls, implications, any unanswered questions and a final summary and conclusion.
* The conclusion is basically a final statement and actually it leads back to your 10\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Listening. Key:**

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| 1. Logical 2. Specific 3. Background 4. Rationale 5. Terms | 1. Measured 2. Natural 3. Statistical 4. Restatement 5. Introduction |

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| **Activity 5. Vocabulary. Match the words with an appropriate definition.** |

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|  | **Words** | **Definitions** |
| 1 | applicable | a) a problem, used especially about problems that may happen in the future |
| 2 | conduct | b) to look at something for information or help |
| 3 | glean | c) relating to one particular thing and not others |
| 4 | implication | d) the collection and interpretation of data in order to uncover patterns and trends |
| 5 | manuscript | e) affecting or relating to someone or something |
| 6 | pitfalls | f) the act of saying something again or in a different way |
| 7 | refer | g) a suggestion of something that is made without saying it directly |
| 8 | restatement | h) to organize and perform a particular activity |
| 9 | specific | i) the original copy of a book or article before it is printed |
| 10 | statistical | j) to collect information in small amounts and often with difficulty |

**Activity 5. Vocabulary. Key:** 1.e, 2.h, 3.j, 4.g, 5.i, 6.a, 7.e, 8.f, 9.c, 10.d

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<https://www.csub.edu/~bhughes/refutationpaperselfeval.doc>

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