Critical research thinking: A recipe for academic writing success and publications

Joshua Ebere Chukwuere[1*]

[1]*Department of Information Systems, North-West University, South Africa. joshchukwuere@gmail.com*
https://orcid.org/0000-0001-8366-4328

*Corresponding author

Abstract: This short study explores the critical benefits and opportunities of applying research thinking in conducting a successful academic writing process and publication. Research thinking is critical because it enables an academic (scholar) or student to conceptualize, create, analyze, evaluate, and synthesize existing ideas in building effective academic writing and publications. This concise paper evaluates the role of critical thinking in enabling a scholar or student's ability to analyze existing information, build an argument, construct own opinion, provide academic support through citations, and contribute to broader academic knowledge. The study evaluated different factors like idea conceptualization, critical analysis, creativity, problem-solving, information synthesis, presentative and communication skills, and ethical considerations as a bedrock for building critical thinking in the academic research process. The researcher further highlights the necessity for scholars and students to develop critical research thinking as a base upon which their ability to idealize, initialize, analyze data, source and evaluate information, report findings, and communicate effectively. A research process and publication underscored by critical research thinking have the potential to contribute significantly to academic knowledge and inform decision-making through knowledge. Also, a research process through critical research thinking redefines the research process and findings through evidence-based critical data analysis and findings.

Keywords: Academic writing, Critical research thinking, Critical thinking skills, Critical thinking, Publications, Research thinking

Introduction

In today's world, knowledge is a key component for success, especially for scholars who create knowledge. This knowledge is built on critical thinking which can be seen as a key component of research thinking, which also drives academic study. Critical thinking as a key component promotes academic and non-academic success (Bezanilla, Galindo-Domínguez & Poblete, 2021; Tahıra & Haıder, 2019). Research thinking fosters the generation of new knowledge, the evaluation of prior data, the presentation of findings, and engagement in scholarly discussions. Research thinking involves critical factors such as critical thinking, evaluation and analysis, creativity, problem-solving, information synthesis, ethical considerations, and abilities to communicate which are explored in this area. This study aims to clarify the significance of developing critical thinking skills in academic research, writing, and publication. To achieve an informed research process from idealization, identification of gaps, analysis of existing literature, conducting a literature search, data analysis, discussion, and reporting, scholars and students are required to develop research thinking abilities (skills).
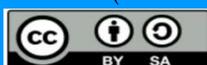
Through research thinking, scholars and students can navigate academic writing, conduct meaningful research with findings that inform decisions, and contribute effectively. This introductory section of the paper presents research thinking's importance within the higher education community in promoting academic research writing processes and outcomes. This short paper emphasizes that research thinking is the best way to ease the academic scholarly process and journey in building a strong foundation for quality research process and publication.

Background of the study

Research thinking within the academic community is critical in discovering and strengthening the academic quality and its impact in real life. To advance academic and non-academic knowledge and make meaningful contributions in a given discipline towards solving problems, one should be able to think critically in accessing existing knowledge, identify research gap/s, evaluate literature, and report findings.

Research thinking assists in assessing meaningful academic writing outcomes in building an individual's ability to understand existing data and draw meaningful content. It also improves problem-solving skills to assist researchers in navigating challenging and complex research disciplines, areas, or topics. Also, research thinking is propelled by innovative creativity and thinking with the ability to motivate researchers to process an idea or topic through deep thinking and creatively to create novel ideas and methods. Furthermore, research thinking assists one with the ability to combine data across sources, develop ideas and concepts, and provide meaningful arguments in theory and practice.

Additionally, ethical considerations are regarded as a critical part of the research thinking process because they enable research writing processing by allowing researchers to follow standards in a literature review, research design, data gathering, discussions, and reporting. to handle the ethical ramifications of their research by following moral standards for literature review, research design, data collection, and reporting. Researchers must clearly and convincingly explain their findings in various formats, including written reports, presentations, and scholarly publications, also, effective communication skills are essential to research thinking. Scholars can improve their analytical skills, get a deeper comprehension of research topics, and make a significant contribution to the academic community by exploring the complexities of research thinking. The context for a thorough examination of research thinking and its revolutionary influence on academic writing and publication success is established by this study background.

Critical thinking

Critical thinking is categorized as a critical aspect of human endeavor that propels success. According to Wallmann and Hoover (2012), critical thinking is valuable across disciplines in propelling success. It enables one to be able to evaluate and analyze information in problem-solving. Critical thinking involves learning to think independently and formulating opinions supported by existing evidence, prompting an academic to become a self-reliant thinker and researcher. However, writing research papers is identified as a common method for developing critical thinking skills, involving various levels of reasoning that become progressively more abstract and complex (Lin, Lin & Zhu, 2018; Wallmann & Hoover, 2012; Kurfiss, 1988).

Nonetheless, critical thinking is a crucial skill that involves analyzing, evaluating, and synthesizing information to make informed decisions and solve complex problems. In the context of scientific research, developing critical thinking skills is essential for academics and students to excel in their research writing and publication careers. One key aspect of critical thinking is the ability to assess information critically. This involves questioning assumptions, evaluating evidence, and considering alternative perspectives. Wallmann and Hoover (2012) suggest that engaging students and academics in the scientific method, including formulating research questions, data collection, and statistical analysis, can enhance critical thinking and higher-level reasoning. Encouraging students and academics to participate in the manuscript submission process for publishing their research is seen as a way to promote critical thinking (DeNigris, Stanislaus & Sheets, 2020; McNair, Le Phuong, Cseri & Szekely, 2019; Wallmann & Hoover, 2012). According to Tahıra and Haıder (209), critical thinking is an essential key to academic writing success. While Islamiyah and Fajri (2020) suggest that it is an outcome of that every graduate.

Research thinking

Academic research involves critical thinking skills in a systematic process toward producing scientific facts. As mentioned in this paper critical thinking is essential to academic writing success. Then, research thinking is a term that lies within the concept of "thinking" logically and constructively in discovering knowledge and solutions to address or add knowledge. According to Smith (2020), research thinking involves the application of critical thinking skills to the research process. Research thinking involves the ability of academic or student scholars to think critically in initiating research processes or ideas through objective thinking. The objective-thinking in the context of the paper deals with thinking that has a defined objective. According to this study, research thinking is a process of logically and systematically using critical thinking skills in thinking about research ideas and concepts with the ability to conceptualize ideas, analyze, evaluate, and summarise. The ability of the academic scholar to produce, identify, or discover a new idea or solution involves the ability to engage in a research thinking process.

Research thinking encompasses the ability to analyze, evaluate, and synthesize information gathered through research materials. By cultivating strong research thinking skills, researchers (lecturers and students) can conduct rigorous and impactful research, contribute to knowledge advancement in their field, and make informed decisions based on evidence and critical analysis. According to Smith (2020), research thinking involves some important aspects:

a. **Formulation of question:** The starting point of research thinking is formulating clear, concise, and focused questions (research questions). These questions form the base upon which the research process is rolled out and assist in defining the research focus area or scope of the study.

b. **Information gathering:** This aspect is all about identifying relevant materials, gathering information through interviews, surveys, or observations, evaluating them, and assessing their reliability.

c. **Critical analysis:** Research thinking demands that researchers develop to carefully evaluate, assess, and analyze collected data, literature, and other relevant research findings. This aspect involves the ability to identify data patterns, incompatibilities, missing links, and knowledge gaps.

d. **Problem-solving:** This aspect requires the researchers to develop problem-solving abilities involving critical and analytical skills in addressing different research challenges, interpreting results, and drawing impactful conclusions from the collected data.

e. **Creativity and innovation:** Research thinking has to do with creative thinking towards generating original or new ideas, research methods, or methodologies. To achieve this aspect, researchers need to think within and outside the box in contributing novelly to their research field.

f. **Synthesis of information:** Research thinking empowers researchers to synthesize relevant and available information across sources in building a coherent argument, viewpoint, theories, or research hypotheses. This aspect includes the combination of different research findings into a single unit like a model or framework.

g. **Ethical considerations:** Research thinking involves the ability to develop sound ethical considerations in a given research process covering the literature review, research design, data gathering, interpretation, and reporting. Scholars (lecturers or students) are demanded to critically consider and evaluate the ethical issues and standard issues surrounding a given research focus area, or topic.

h. **Communication skills:** Research thinking involves effective communication of research findings. Communication skills also involve clear research writing and presentation of findings and publications.

Critical research thinking (CRT)

Critical thinking abilities go beyond the ability to think normally. It involves the ability of lecturers and students to develop the skills to gear towards success in writing and publication. It is essential in the digital age for education and un-educational (professional) content learning and is used to improve some values and thinking (Facione, 2011; Lai, 2011; Murawski, 2014; Heard, Scoular, Duckworth & Ramalingam, 2020). These skills consist of the ability to collect, analyze, and access relevant and available information that propel effective decision-making processes. Then, critical research thinking (CRT) involves the ability of one to visualize, and conceptualize the research topic, develop the research objective, search for existing and relevant information (materials), assess them, and discover new insights in informing effective decision-making to solve real-life challenges. In research thinking, CRT is critical for starting and conducting research writing,

engaging with sources constructively, discovering new insights, and solving real-life challenges. For example, CRT assists researchers in figuring out potential research topics or ideas, effectively carrying out research, and publishing an article that solves real-world challenges.

The benefits of critical research thinking

It is not in doubt the benefits of CRT as a skill. Lecturers and students can benefit from CRT in providing a deeper understanding of the research process and conducting meaningful and impactful research writing. According to Tahira and Haider (2019) and Wolcott, Baril, Cunningham, Fordham and Pierre (2002), CRT enables scholars to understand and establish a research interest, gather data, analyze, critique existing views, develop an effective argument, and provide relevant findings. The benefits allow scholars, lecturers, students, and others to perfect their writing skills, deepen research topic and objective understanding, and improve data analysis. Additionally, CRT empowers scholars to critique existing views and scholarly standpoints, identify patterns in arguments, assess evidence, and draw informed conclusions. These skills are critical to functioning and succeeding academically and improve one's ability to transfer from theory to life practice and make one more participatory in social discourse (Tahira & Haider, 2019, Regier, 2011).

Moreover, the process of developing effective critical research thinking skills can increase self-confidence and independent learning and writing. Encouraging students and academics to argue and question, can help them gain a sense of control over their education, even academic writing and research, ultimately enhancing their understanding of their research interest (Darling-Hammond, Flook, Cook-Harvey, Barron & Osher, 2020; Tahira & Haider, 2019). Through critical research thinking, students and academics can effectively communicate their ideas, engage with complex concepts, and contribute meaningfully to the academic body of knowledge and discussions. Incorporating critical research thinking into the academic writing process can also help academic scholars adapt to the expectations of the academic community in contributing meaningfully. By familiarizing students and academics with critical research thinking, higher education institutions can provide them with the necessary tools and pieces of training to increase their skills to meet higher standards of academic research writing toward publications.

How to develop critical research thinking

Developing critical research thinking involves honing your ability to analyze, evaluate, and interpret information effectively. By practicing these strategies and approaches, a scholar including students can cultivate critical research thinking skills and become a more effective and discerning researcher. Here are some key steps to enhance your critical research-thinking skills (Iyer, 2019; Kurfiss, 1988):

   a. **Ask thoughtful questions:** Start by asking relevant and probing questions about the research topic. This helps you focus your inquiry (question) and identify key areas for exploration or investigation.
   b. **Evaluate information sources:** Critically assess the credibility, reliability, and relevance of the sources you use in your research. It involves the consideration of the author's research interest and expertise, the publication date, and the source's quality and standard.
   c. **Analyze information and interpret data:** It involves the process of breaking down complex and challenging information into smaller parts to understand the underlying concepts, meaning, and argument behind it. It helps to source for patterns, links, relationships, connections, inconsistencies, and discrepancies in the data.
   d. **Consider multiple perspectives:** Engaging diverse opinions, and viewpoints and considering alternative explanations and interpretations of the findings. Also, the step challenges personal opinions, and assumptions and allows the consideration of viewpoints from others and be able to conceptualize research topics. This helps one to create a more comprehensive understanding of the topic.
   e. **Apply logic and reasoning:** This step consists of logical reasoning in evaluating views and arguments, identifying assumptions, and detecting fallacies in the research. This step also identifies logical false beliefs, unsupported assumptions (claims), and gaps in the reasoning process. It ensures that academic conclusions are drawn from empirical evidence and logical reasoning.
   f. **Synthesize information:** Information is integrated across sources in creating and developing logical and well-supported views and arguments. The synthesized information is a combination of ideas, and the development of new insights, perspectives, and opinions.

g. **Reflect on your thinking:** This step involves inward analysis and reflection of personal thoughts, the research process, and concluding to make decisions. This step understands the impact of personal views, biases, assumptions, and prior knowledge on data analysis.

h. **Communicate clearly:** The step stresses the need for a clear and concise communication of one's thoughts and findings. Achieving the step involves the provision of correct and effective communication in sharing research findings and new insights with the right audience or identified group.

i. **Seek feedback:** The research findings and outcome must be shared with peer groups or individuals, mentors, or field experts for opinions and feedback. The feedback can be constructive in giving the opportunity for critical analysis, and reflection in modifying and enhancing the research quality.

Conclusion

This research paper is essential in today's changing and challenging world of information (digital age). This research discovered the very important impact and roles of CRT in carrying out academic writing processes and publications. The study established the place of conceptualization of ideas, critical analysis of literature, problem-solving, innovation and creativity, information synthesis, ethical considerations, and communication skills. These skills assist in developing critical thinking in the research process. Through critical research thinking skills, scholars and students can improve their ability to initialize research ideas, access relevant information, analyze data, and communicate their research findings. Research thinking can improve the ability to understand a given research topic, critique existing knowledge, and evaluate empirical studies. However, the integration of critical research thinking into the academic writing process can contribute meaningfully to publishing high-quality research to impact the academic community. It also enhances the scholars' research capabilities to empower the decision-making process on empirical evidence and reasoning. At this point, this study highlights the positive benefits and impact of critical research thinking in the process of pursuing quality scholarly research and academic excellence

ORCID

Joshua Ebere Chukwuere (iD) https://orcid.org/0009-0009-8381-3261

References

1. Bezanilla, M. J., Galindo-Domínguez, H., & Poblete, M. (2021). Importance of Teaching Critical Thinking in Higher Education and Existing Difficulties According to Teacher's Views. *REMIE-Multidisciplinary Journal of Educational Research*, 11(1).

2. DeNigris, D., Stanislaus, S., & Sheets, K. (2020). Why Your Students Should Publish in Undergraduate Journals: Benefits of Engaging Students in the Research Process. *Copyright and other legal notices*, 470.

3. Facione, P. A. (2011). Critical thinking: What it is and why it counts. *Insight assessment*, *1*(1), 1-23.

4. Heard, J., Scoular, C., Duckworth, D., Ramalingam, D., & Teo, I. (2020). Critical thinking: Skill development framework.

5. Islamiyah, M., & Fajri, M. (2020). Investigating Indonesian Master's students' perception of critical thinking in Academic Writing in a British university. *The Qualitative Report*, *25*(12), 4402-4422.

6. Iyer, L. (2019). Critical thinking and it's importance in education. Retrieved from https://www.researchgate.net/publication/339433132_Critical_Thinking_and_it's_Importance_in_Education

7. Kurfiss, J. G. (1988). *Critical Thinking: Theory, Research, Practice, and Possibilities. ASHE-ERIC Higher Education Report No. 2, 1988*. ASHE-ERIC Higher Education Reports, The George Washington University, One Dupont Circle, Suite 630, Dept. RC, Washington, DC 20036-1183.

8. Lai, E. R. (2011). Critical thinking: A literature review. *Pearson's Research Reports*, *6*(1), 40-41.

9. Lin, Y., Lin, Y., & Zhu. (2018). *Developing critical thinking in EFL classes* (pp. 19-23). Singapore: Springer.

10. McNair, R., Le Phuong, H. A., Cseri, L., & Szekely, G. (2019). Peer review of manuscripts: A valuable yet neglected educational tool for early-career researchers. *Education Research Intern*

11. Murawski, L. M. (2014). Critical thinking in the classroom… and beyond. *Journal of learning in higher education*, *10*(1), 25-30.

12. Regier, J. (2011). Why is academic success important. *Saskatchewan School Boards Association*.

13. Smith, M. (2020). Is critical thinking really critical? A research study of the intentional planning for the teaching of critical thinking in the middle grades.

14. Tahira, M., & Haider, G. (2019). The role of critical thinking in academic writing: An investigation of EFL students' perceptions and writing experiences. *International Online Journal of Primary Education*, *8*(1), 1-30.

15. Tahıra, M., & Haıder, G. (2019). The role of critical thinking in academic writing: An investigation of efl students'perceptions and writing experiences. *International Online Journal of Primary Education*, *8*(1), 1-30.

16. Wallmann, H. W., & Hoover, D. L. (2012). Research and critical thinking: An important link for exercise science students transitioning to physical therapy. *International journal of exercise science*, *5*(2), 93.

17. Wolcott, S. K., Baril, C. P., Cunningham, B. M., Fordham, D. R., & Pierre, K. S. (2002). Critical thought on critical thinking research. *Journal of Accounting Education*, *20*(2), 85-103.