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Socializing the Importance of Scientific Writing for Undergraduate Students

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ABSTRACT

Research writing is by rehearsal. Hence, this paper aimed at discussing the importance of research writing for undergraduate students. This papers employed library research where the data were gathered from journal, articles, books and so forth. The finding asserted that research writing is important to extend students' knowledge, experiences, and research partners. The advices are bestowed for students, lecturers, and curriculum makers. For students, it is required for their study fulfilments and extend knowledge. For lecturers, it is to trait and enhance students' knowledge toward research writing and to gain more experiences within. For curriculum makers, it is needed to integrate scientific writing as obligation lesson for undergraduate students to advance their proficiency. Additionally, it is needed more deeper research and discussion for future research on how research writing affect students proficiency levels based on their study fields.

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1. INTRODUCTION

A writing is complex process and by rehearsal. It requires continually learning. The written should provide an unequivocal content. Toba et al., (2019) asserted that the writing is necessary to communicate and for academic purposes in terms of letters, essays, articles, journal, project reports, thesis, so forth. Meanwhile, Tarigan (2013) highlighted the writing is as information transfer through symbols and graphics which understandable comprehend by readers. Suparno & Yunus (2003) pointed out some elements in writing such as sending message, media, writing content, and readers. However, mastering of writing is not easy as primary learning objective for students (Al Khazraji, 2019), is to produce proper structures of writing (Ceylan, 2019) and to master writing competence in terms of organizing text, regulate writing content, review the writing composition, and confer readers awareness (Bakry & Alsamadani, 2015). Tarigan (2013) mentioned some proposes of writing in terms of (1) for tasking purposes where the writer writes due to the study task, (2) altruistic where it is to entertain readers, (3) persuasive purposes which aims to persuade readers, (4) informative purposes which aims to inform to readers, (5) expressive purposes which to express the feeling, minds, ideas, emotion, and points of views of authors and (6) creative purposes is to develop new and unique things.

in the education field, the writing is necessity and a must as the part of productive skill, communication instruments and parts of academic goals e.g essays, paper, articles, journal, the final projects, so forth. Toba et al., (2019) pointed out that mastering academic writing skill is crucial to deliver written works comprehensively. Creme & Lea (2008) asserted that key success of students in writing achievements at the college is to comprehend the requirements and prerequisites during the process of completing assignments. Hendratno et al., (2009) added that writing is the most challenging skill in learning English which could be potentially mastered.

Scientific writing is required as the gauge of learning proficiency, especially for undergraduate students. Scientific writing is the process by analysing the data, gauging the data and interpret the data to gain a finding. This process is different with non-fiction writing. It also is through the process of deep thoughts by correlating with theories and methodologies to enhance the validity of results. Thus, scientific writing needs to be objectives, accurate, and thorough and systematics. Finoza (2010) explained scientific writing as a writing process which contain of argumentation statements and is communicated through the written form systematically, methodically and analytically. Nawawi (2015) highlighted some requirements of scientific writing such as (1) the existences of objects refer to the facts discussed, (2) methods is to confer and analyse the objects of discussion, (3) systematic writing means that the writing content should be typed in the right chronological order, and (4) universal truth directed on the certain concern of object and population which were observed. Jacob et al., (1081) added some aspects in writing such as content, organization, vocabulary, language usage and mechanics. The first is content. It refers to substances of writing such as exploring ideas, developing as main ideas and develop the message within the writing. Thus, it is to convey ideas. The second one is organization. It concerns on how writers organize ideas as sentence paragraphs and the whole texts. Those should be arranged coherently and cohesively to construct in the right chronological orders of ideas. The third is vocabulary. It is to select proper words to deliver and express ideas as well as message of writing. This also should be comprehensively organized to express it. Vocabulary should be enriched by writers to embody their thoughts and ideas. The fourth is language usage. It relies on to grammar or sentence patterns. This combines among writers creativity, accuracy and writers grammar knowledge which should be explored and utilized in writing. Those will eliminate readers' boredom during reading their texts. The fourth is mechanics which underlined on how writers apply punctuation, capital letter, so forth.

Some research have been conducted to explore on the important of scientific writing for students. Nisa et al., (2023) explored on the need analysis of undergraduate students toward scientific writing articles. The design used case study and data were gathered through questionnaire. The result proved that students must learn on the teaching materials of scientific writing articles to enrich their writing proficiency. In addition, they aligned the points that 85.53% of students were on less capability in the parts of articles from introduction, method, results and discussion also conclusion. Most of them proved that they procured difficulties on determining research gap. It was because required more critical thinking skill, participants also obtained lack on the ability to summarize and present the data. Another research by Hikaya et al., (2025) observed on the students anxiety in writing Skripsi. They recruited 15 participants to collaborate in their study. Questionnaire was delivered to receive the data. The results highlighted that personal factors were the most determining factor in writing skripsi, followed by mentor factor and then peer factor. In short, they agreed that personal factor was the most affecting during the writing of skripsi which could impact on students to complete their last projects. Bulqiyah et al., (2021) observed on how students difficulties on writing essays. The study were participated by 21 students. The findings underlined that students difficulties are by affective problems and cognitive problems. Affective problems directed from students and lecturer attitudes in teaching and learning process. Cognitive problems derived from writing point of views, language usage, writing process and linguistic problems. There were rare previous researches in analysing the important of scientific writing for undergraduate students. Therefore, this paper aimed at finding to examine the important of scientific writing.

2. METHOD

This study used qualitative research in the form of library research to extend points of views toward the important of scientific writing for undergraduate students, how to write scientific research coherently and comprehensively. Library research is by collecting, arranging and interpreting the data via relatable references to produce new perspective and theoretical frame works (George, 2008). The data gained from research article, journal, book and other relevance resources (George, 2008).

3. FINDINGS AND DISCUSSION

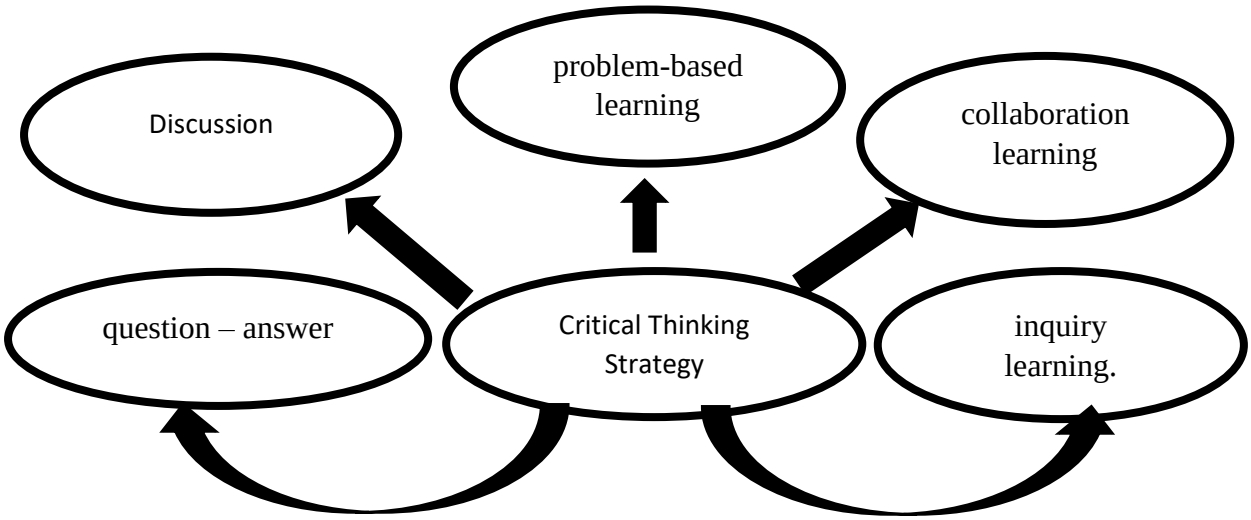
The importance of scientific writing.

Writing is by rehearsal. It could not be done autodidact. Hence, the role of lecturers are crucial to determine the input and output of learning. The importance of scientific writing is to recode students' ideas and learning achievements coherently. In the scientific field, the use of writing to deliver ideas are needed and required as the part of immortal works. Not simple as writing in diary or for entertainment, scientific writing is to convey theoretical concepts, research findings and discover new perspectives which were accompanied with empirical evidence. Time process for evaluating scientific papers were not shorts. Reviews and evaluations for scientific writing committed in how evaluate concepts of thought and results. Hence, scientific writing aligns with accuracy, thought clarity and responsibility. Those three aspects demand critical thinking ability. The critical thinking is to foster new knowledge, evaluate and gauge the data, present the research finding and discussion. Research invokes analysis, evaluation and interpreting the data. Those processes is in line with the critical thinking ability. It means every steps of those three aspect should be implemented with the critical thinking ability to extend broader knowledge and perspectives. Chukwuere (2024) pointed out that research engages with the critical factors in terms of creativity, problem solving, analysis and evaluation, information, synthesis, ethical consideration, and communication ability. From developing the introduction, literature reviews, gathered the data, interpret the data, analysing the data and presenting the data as the part of research finding until conclusion, all of those requires the critical thinking skill. Therefore critical thinking is as essential component of scientific writing (Bezanilla et al., 2021; Tahira & Haider, 2019). Independent learning and writing could be increased by employing critical thinking skill. It should be much prioritized in the teaching and learning process. The teaching and learning process for writing skill, due to the embedding of critical thinking in scientific writing, could contribute to heighten students' interest in research and writing. By implementing critical thinking skill in writing for research field could fulfil standard achievements for students in the writing of scientific research. This would make them easier to compound and communicate their ideas, concepts, critics, and recommendation either in daily life or scientific fields.

Evolving critical thinking skill could be done through treating students in analysing, evaluating, critiquing and interpret information from multiple relevance resources. Practicing daily critical thinking abilities are more effective where it could raise its proficiency up. Some strategies in treating students' critical thinking skill are through several steps, such as question – answer activities, discussion, problem-based learning, collaboration learning and inquiry learning. Question- answer activities build up students' critical thinking skill via open-ended question. Rather than asking with yes or no answer, lecturer should ask with "why". It contributes for students to explore more of knowledge to gain wider point of views toward the topics. Their minds will receive lot of insights from other students. Thus will enrich and raise their cognitive up. This process is in the scope of lifelong learning because the critical thinking will always be needed to solve their obstacles better. It thrives students cognitive in learning.

Discussion in critical thinking ability promotes students – centered learning. It bestow up their metacognitive to map the learning topics. It urges students to seek the answer from their peer questions. Automatically they will be actively engaged in the teaching and learning process. This learning process will perpetuate their critical thinking skill and conveniently cooperate with different discussion topics. Problem based learning should be taken as consideration also to treat students' critical thinking skill in

terms of discovering the topic discussion, investigating issues which might emerge within, observing and proposing some clues to solve those issues, then initiating plans to present them within the discussions. Scientific writing in research usually is applied a collaboration with more than one author. It assists writers to engage with other writers. Research collaboration could enhance students' ability and enrich their knowledge as new inputs. The process of writing and its outputs enlarge and extend various perspectives. Collaboration in research considers as the process of analysing, elaborating and interpreting the knowledge, based on the students groups. This could fix other writer lack ideas during the writing process. Thus, among them could correct each other. Inquiry learning also assists students to enhance their critical thinking ability. This technique demand roles of lecturer as for facilitators, where students actively engage within the learning process to create and expand their thought toward the topics discussions. Inquiry learning is based on the questions. Those questions to investigate and dig further previous knowledge of students then providing them with new knowledge insights. Lecturer as facilitators implied that they only bridge between students previous knowledge and new knowledge. If students face several stumbles where they cannot answer the questions, lecturers roles arte guiding them to break those difficulties. Thus, their difficulties and problems could be handled up. This process is important to break the learning impasses.



Collaboration in research writing can broader students' relationship in research projects. Collaboration in research either comes from individual with individual or institution with institution lead to expand research networks. Numerous research have been investigated on the research collaboration (Katz, & Martin, 1997). Collaboration in research brings and provides multiple benefits among individuals or institutions. Katz & Martin (1997) argued some requirements dealing with research collaborations. Those were that the concept of research collaboration well are comprehended; aligned with same phenomenon either collaboration between individual, groups, institution, and others; can gauge the level of collaboration to determine research process and output; and the more collaboration gather better both for the expertise of knowledge and research relations. Research collaborations is proposed to extend knowledge in order to achieve more comprehensive research process and outputs. This embodies and strengthens in how research can be conducted in terms of determining topics, observing and analysing research gap due to the previous relevance researches results, collecting the data, investigating and measuring the data, interpreting the results, providing discussion topics and stating conclusion. Those whole process can increase the knowledge advancement of researchers during their research. Avoiding misperception and ambiguity in analysing research to extract the finding should be obviously considered. Therefore, the role of research collaboration is to maintain on how research progress is coherent and comprehensive from the beginning until finishing.

Research writing cannot be done by autodidact. However, it could be done by training time to time. It is because it has strict rules within. Hence, collaborators could be peer-checkers whether they recognize some mistakes, they could sign those mistakes and provide various recommendations to correct them. The relevancy of peer-checker is to disaggregate those mistakes to achieve better progress and findings. These are required to also support other author in investigating the research phenomenon. Collaborators, in this context, can bestow advices and insights, even be active participants. Their roles in research can be vary from negligible until can be substantial and significant participants. Some are listed as co-authors. Thus, the challenging factor in collaboration research is in how decide and specify the collaborator based on their research interest and expertise. Katz and Martinz (1997) embraced some proposes of collaboration research. The first, it is caused funding. Research funding with more than one author can change research funding patterns. Those authors can fund together for research. The second, regarding the willingness of authors is to increase their scientific popularity. Thus, the probably expects that they research papers can be cited as many as possible and they gain wide networks access for their research. The third, it is caused by more complex factors including research instruments. Research instrument is needed. If the author has collaborators, those shape them easier to access and build research instruments in order to achieve more valid and reliable data. The fourth, it is for evolving research specialisation. The research specialisation could be enhanced through collaboration working with others research because they will receive more insightful advices within. The more insightful advices receive, the better their research progress and results. This point of views stress on the importance of research collaboration. The fifth, it is required as scientific advancements where it requires more knowledge inputs to advance research significant and demand to be met the sixth. The sixth, the obligation of current research professionalism trends rises up solemnly. It is more important for not only researchers' knowledge but also their career grades. The seventh, the need of researchers is to gain more experiences and trait other researchers effectively. The eight is the desire to obtain more knowledge and experience cross-multidisciplinary research scopes. The ninth, it is to learn other knowledge as well as skill tacitly.

4. CONCLUSION

Scientific research writing could not be done autodidact, it is by rehearsal. Therefore, it is required to be trained solemnly. This paper aimed at finding to observe further important of scientific writing for undergraduate student. The results pointed out that the research writing can advance the critical thinking of students, gaining more knowledge as well as experience, and gather more collaboration with other researchers. The suggestions are provided for educators in terms of students, lecturers and curriculum makers. For students, they have to learn on how scientific writing is written from the beginning until finishing. For lecturers, they have to guide their students in applying scientific writing in order to enhance their students writing ability. For curriculum maker, it is needed to add lesson about scientific writing for undergraduate students.

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