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Research Article

## Challenges, Strategies, and Digital Media Use in Writing Research Articles: A Study of EFL Postgraduate Students

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### KEYWORDS

Challenges;  
 Strategies;  
 Digital Media;  
 Research Articles.

### A B S T R A C T

Many universities in Indonesia require their students to conduct research article writing and publish it in reputable journal. Although, writing a research article in English is challenging, however, students must have an effective strategy to solve those challenges. In addition, the appearance of digital media might be very useful for students to conduct writing scientific research. This study aims to identify the challenges faced by four EFL postgraduate students while writing the research article and to explore the strategies and digital media used by them. An in-depth interview through narrative inquiry approach was employed to collect the data from the participants' experiences. The findings of this study show that the participants find some challenges in writing a research article, there is the lack of language proficiency, the difficulty in finding the relevant respondents and references, and time management. However, it can be solved by strategies, such as, cognitive strategy, metacognitive strategy, social strategy, and affective strategy, and digital media used by them. This study might be used to provide additional information relating to the strategy and digital media to support research.

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## INTRODUCTION

Writing and publishing research articles are ones of the graduation requirements at some universities in Indonesia. A research article is one of the academic writing types that academicians, including university students commonly conduct. In addition, this is reality that conducting research and publishing research are not only for those working in research-focused universities, but also for those in teaching-intensive universities (Board of Editor, 2012). English as Foreign Language (EFL) postgraduate students in many universities in Indonesia are required to conduct the research and

provide it into article or thesis form using English in the second year to complete Master of English Education in annual program and in the fourth semester, this regulation also applies in some foreign universities such as in Nepal, Kazakhstan, Tanzania and other countries (Hajar, Ait, & Mhamed, 2021; Komba, 2015; Tiwari, 2019). Therefore, the skills required to write a research article is not only science-based but also language-based (Crissman, 2009) In addition, for university students of English as Foreign Language (EFL), English is the crucial language to be mastered.

In writing a research article in English, EFL students might find some challenges. The challenges may vary,

such as lack of academic writing skills (Komba, 2015), language mastery, writing style, research topic, research methodology, and individual matters (Erbay Cetinkaya & Yilmaz, 2017). Furthermore, issues arose in one Indonesian university settings. According to the previous study of Sa'diah, Rukmayadi, Shofiyah Tanjung, Puji Lestari, and Rizki (2023), students have difficulty obtaining the topic and developing it into an up-to-date title, they are confused in implying the research questions, they struggle in determining the research method, they have difficulty arranging the sentences cohesively and comprehensibly, they do not provide their understanding after describing the theory, and they have a lack of relevant information or argument to support the theories.

Besides that, some writing strategies play the important role in order to make the students easier to conduct the research and report the research result. There are some strategies commonly used by researchers or writers while conducting research. Writing strategies which under the umbrella of language learning strategies, have actually been applied broadly for decades. Oxford (1990) has categorized strategies of writing into cognitive strategies, metacognitive strategies, social strategies, and affective strategies. Cognitive strategies refer to the application of specific abilities to complete specific writing tasks, such as writing a research article. Cognitive strategies are variations in self-consistent modes among individuals in preferred ways of perceiving, organizing, or recalling information and experiences that are referred to as direct strategies (Olson & Land, 2007). It can be defined that cognitive writing strategies involve purposeful mental processes that writers employ to tackle specific writing tasks. These strategies utilize cognitive abilities to plan, brainstorm, self-regulate, revise, and edit content. They are influenced by individual preferences in perceiving and processing information. Examples include outlining to structure ideas, brainstorming for generating concepts, self-regulation for goal-setting, revising and editing for refining content, chunking to simplify information, metacognition for self-awareness, visualization for clear structure, problem-solving to overcome challenges, analysing audience and purpose for tailored content, and using mnemonic devices for remembering key points.

These strategies collectively enhance the quality and the effectiveness of written communication. Metacognitive strategies, in a nutshell, are the abilities, attitudes, mindsets, and behaviours that learners employ to govern their cognitive and learning processes (Yusuf, Fitriasia, & Tan, 2016). Metacognitive methods such as organizing, planning, monitoring, and assessing are all directly tied to the writing process (Sulistyo, Mukminatien, Cahyono, & Saukah, 2019). Affective strategy is not academic in nature, but it is a critical aspect in writing papers in

English because it is related to motivation and emotion management, which help students write successfully. Social strategy refers to a style of social communication in which other people who play a significant part in the completion of research article writing are involved (Marhaban, Mukminatien, Widiati, Sulistyo, Suhastyanang, Puspitasari, & Muslem, 2021).

Regarding to those strategies, students may use digital media to support them to conduct academic writing. Although utilizing technologies in writing research papers such as research articles, theses, and dissertations was unpredicted in 1073 (Turabian et al., 2018), however, in today's academic trend, employing technology or digital media is possible and helpful. This has been proved by (Rapp & Kauf, 2018; Strobl, Ailhaud, Benetos, Devitt, Kruse, Proske, & Rapp, 2019). Digital media in this research refer to the digital platforms that students use in the process of writing research article.

In line with the fact that English has become an international language used around the world, non-native English speakers can face some obstacles in writing reports. Especially if they want to convey their thoughts (Sükan & Mohammadzadeh, 2022). In relation to academic writing, several studies (Erbay Cetinkaya & Yilmaz, 2017; Komba, 2015; Peng, 2018), the challenges of writing research paper among graduate and undergraduate students. It was found that the majority (over 50%) of participants whose papers were peer-reviewed faced many problems in writing academic paper, such as the inappropriateness in displaying different chapters of the reports and the lack of academic writing skill. Furthermore, the recent study by Erbay Cetinkaya & Yilmaz (2017) describes how Bachelor's degree students realized the process of writing a thesis and the possible challenges they faced. It is concluded that graduate students struggled with the problem relating to language, writing style, research topic, research methodology, and individual matters.

In addition, another research is conducted to explore common dissertation/thesis writing difficulties perceived by graduate academic advisors (Peng, 2018). The results of the study indicated that the overall difficulty of theses/dissertation writing presented by research students was related to review of narrative literature and lack of conceptual framework.

Other challenges in conducting research are insecurity, time management, and motivation. Insecurities may develop while pursuing a research degree. Postgraduate students, for example, are often mature, experienced professionals with high standing in their respective professional contexts. When they enter academia, such students may feel insecure about their new identities as

researchers and academics (Paltridge & Woodrow, 2014). This relates to the sentiments of inadequacy that some students have about their perceived competency as a researcher. In addition, the data from the journals also revealed time management concerns. Time management in a research degree might be difficult because there can be so many unpredictability factors to investigate. For example, a student may need to delve into a body of literature that he or she is unfamiliar with, or it may take a lengthy time to obtain approval from an ethical committee (Hajar et al., 2021). Combining school, employment, and family takes careful negotiation to ensure that one of these areas does not suffer as a result of the others. Students may struggle to sustain motivation in dissertation writing due to the project's size and complexity, as well as the limited number of extrinsic motivators, such as tests or due deadlines. The majority of inspiration must come from within the student, who must sustain persistence and interest if they are to complete their dissertation. Negative emotions such as self-doubt and waning interest are common dissertation writing concerns (Cryer, 2000).

The existing research (Marhaban et al., 2021) has revealed that some doctoral students in Indonesia used cognitive strategies, metacognitive strategies, affective strategies and social cognitive strategies in process of writing their dissertation. On the other hand, another research (Stander, 2020) has shown the strategy to avoid plagiarism in research article, with explanation that translation from the original English source text to the home language and back to English is the intervention strategy to avoid plagiarism in research article. Study of the use of the digital media in research has been conducted by Strobl et al. (2019). It is argued in their research that the technologies needed in academic writing are formatting device, spelling and grammar checker, pagination, thesauri, synonym finders, outline tools and index generators.

Although extensive studies have been carried out on the strategies used in conducting academic writing and the technology to support research, no single study exists with the explanation of both strategies and digital media used to support the process of writing research article in much detail. Furthermore, the main purposes of this study are to identify the challenges faced by postgraduate EFL students and the strategies used by them while writing a research article in English, and to explore the digital media used by them in process of writing a research article. In addition, this study offers some important insights into academic writing trend in this era.

Based on the purposes of the study, more specific research questions will be introduced in:

1. What challenges are faced by EFL postgraduate students in writing research article?
2. What strategies do they use to cope with the challenges in writing research article?
3. How do they use digital media to support writing research article?

## METHOD

### *Research Design*

The present study employed qualitative method. This study aimed to explore the strategies used by EFL postgraduate students in Indonesia while writing a research article and the digital media used by them to support their research through their life story and experience. Regarding to the purpose of the present study, the researchers conducted this study by using narrative inquiry approach. Barkhuizen, Benson, & Chik (2014) states that narrative inquiry is an appropriate method to be applied in conducting research in field of language education including learning strategies. In addition, narrative inquiry is the first and foremost a way of understanding and making meaning of experience through conversation, dialogue and participation in the ongoing lives of research participants (Clandinin & Caine, 2013).

### *Participants and Instrument*

The participants in this study were carefully chosen and had a common experience with a specific phenomenon. Purposive sampling, it had been argued, giving the finest data for establishing how precisely a phenomenon was being perceived. The current study included four participants ranging in age from 25 to 32 years. All of them were postgraduate students of a university in Banten, Indonesia, who were conducting research in English as a partial requirement for their master degree.

At the meeting, the researchers explained in simple terms the importance and the purpose of their research. Four of the students who met the criteria set by the researchers expressed an interest in participating in the study. The criteria for participant selection in the study were postgraduate students of English education department, were actively engaged in writing scientific articles for their final semester project. Those should have attended a meeting where the research's importance was explained and expressed their willingness to participate. They were expected to possess a grasp of the research's significance, a commitment to completing study requirements, and language proficiency. The researchers were particularly aware of the need for anonymity given the confidential information being disclosed. Pseudonyms were used to protect the privacy of participants. Participant profiles are

shown in Table 1. This also includes the interview number, the age of the participants, and the methodology currently used in the study.

**Table 1.** Data of The Participants

No	Name	Age	Current Research Method Used
1	Aisyah	27	Quantitative
2	Khodijah	29	Qualitative
3	Fatimah	32	Qualitative
4	Hamidah	25	Quantitative

### *Data Collection and Analysis*

All the data in this research were collected through the in-depth interview. Proper ethical procedures regarding confidentiality were followed to obtain informed consent from the participants. At the beginning meeting, participants were asked to talk about themselves, their previous language learning experiences, and why they chose their research topic. They were allowed to use the language they felt most comfortable with. After the data of participants' personal information are collected, to get in-depth data, in the next meeting the researchers conducted the one-by-one interview. To get deep information and better comprehension, the interview was conducted in Indonesian language through video conference application. Furthermore, to ease the researchers analysed the data, it was recorded with the permission of the participants.

Data analysis was based on the model of thematic analysis by Braun & Clarke (2013) to organize participants' perceptions in writing their research article into themes. Researchers familiarized themselves with the data by reading and re-reading interview transcripts "actively, analytically, and critically" (Braun & Clarke, 2013). After the onboarding process, the data were coded to generate an initial code relevant to the purpose of the research question. A selected reading approach was used for this purpose. As researchers read the transcripts, statements were highlighted that captured the impact of various contextual factors on participants' experience of writing their research articles in English, including the use of strategies and digital media.

Researchers continued to work with participants throughout the data collection process to verify the accuracy of the descriptions. Several validations (Creswell & Creswell, 2018) practices such as interviewee validation, triangulation between data sources, and search for conflicting evidence helped determine the accuracy and reliability of this narrative and the report.

## **RESULTS AND DISCUSSION**

The present study confirms the findings about the EFL students' strategies and the use of digital media to cope with challenges while writing research article in English. The findings were classified into three stages of writing research articles which include challenges, strategies and digital media use in each stage. The stages are determining research topic and finding the relevant references, collecting and analyzing data, and writing each section of the article (Marhaban et al., 2021). The findings show the challenges faced by EFL postgraduate students while conducting research article writing are the lack of language proficiency, the difficulty in discovering the relevant respondents and references, time management, and creating the instruments of data collecting. The findings also indicated that there were four important strategies used by the participants in conducting the research article. The strategies were cognitive strategy, metacognitive strategy, affective strategy, and social strategy. In addition, the participants utilized some kinds of digital media and technology in the process of conducting the research. Those digital medias help students to find out the relevant references, collect and analyze the data, decrease the plagiarism percentage.

### *Strategies and the Use of Digital Media To Cope with Challenges in Determining the Research Topic and Finding the Relevant References*

This is the initial process of conducting the research article. In determining the research topic that will be conducted, the participants share their reason in choosing the topic, some challenges they face, and strategies and media they use in process of determining the research topic and seeking the relevant references. In summary, the findings can be seen in Table 2. Furthermore, the detail finding will be displayed in this study.

**Table 2** Challenges, Strategy, and Use of Digital Media in Determining the Research Topic and Finding the Relevant References

Stage	Challenges	Strategies	Use of Digital Media
Determining research topic and finding relevant references	<ul style="list-style-type: none"> <li>Lack of knowledge</li> <li>Time management</li> <li>Determining relevant instrument</li> </ul>	<ul style="list-style-type: none"> <li>Searching more references</li> <li>Reading more journal articles or books (cognitive &amp; metacognitive)</li> <li>Discussing with friends or lectures (social)</li> </ul>	National Library (Pusnas) Online PDF Drive Google Scholar

The challenges while choosing the topic for the research articles are faced by the participants in this study. The problems currently found in determining the topic of research are determining the relevant instruments and respondents that relate to the topic. The ensuing statements have been provided by each participant within this study. Khodijah, Aisyah, Fatimah, and Hamidah refer to each participant, and S refers to the number of statements or data.

S1: *“I think problem in determining research topic is determining the instruments and respondents, because I have to consider the relevance of each other. But, this can be overcome if I get some relevant references through journal articles”* (Aisyah)

S2: *“I got something new in determining the topic. But sometimes when I am interested in a topic, I do not comprehend the material much. To solve this problem, I realize that I have to read more articles or books relating to my topic”*. (Khodijah)

S3: *“I have problem in time management. in determining the research topic, I need to read some references from many resources, but sometimes I am confused how to manage my full daily schedule”*. (Fatimah)

S4: *“I am confused of determining the appropriate method for my topic”*. (Hamidah)

In addition, the other problems indicated the lack of knowledge about the topic that will be researched and time management in conducting the research. This finding is in line with Hajar et al. (2021). Time management in a research’s step might be difficult because there can be so many unpredictability factors to investigate. For example, a student may need to delve into a body of literature that he or she is unfamiliar with, or it may take a lengthy time to obtain approval from an ethical committee. However, the data indicate that reading more references related to the chosen topic will

help the researchers much in process of determining the research topic

Furthermore, the researchers have dug the information regarding to the reason of choosing the topic for their ongoing research articles. The data can be shown at S5 and S4

S5: *“My recent research is about the influence of YouTube on students’ writing skill, I choose this topic because I see that nowadays many students are interested to access YouTube. So, I think that it may be better if their interests in watching YouTube are used to improve their English skills”*. (Aisyah)

S6: *“.....when I choose a topic for my research, I usually follow the trend in education.”* (Khodijah)

Data of S5 and S6 indicate that the participants mostly determine the topic of their research based on the current trends and the purposed participants’ interests. For example, in S5, a participant said that she was conducting research about the influence of YouTube on students’ writing skill. The reason she selected that topic is because many students around her are interested to access YouTube almost every day and YouTube.

The participants applied several strategies in determining the topic, such as, social strategy and metacognitive strategy.

S7: *“If I got stuck in determining the research topic, I share my problem and my mind to such a student-researcher community in Twitter, they will respond my question and giving suggestion. The very clear solution may not be found directly, but at least I got some ideas through discussing with friends who have experiences in conducting research”*. (Aisyah)

S8: *“.....I did discussion with friends or lecturers, also I read relevant articles and books”* ( Khodijah).

S9: *“If I get problem in determining the research topic, I usually share and discuss it to friends or lecturers”* (Fatimah)

S10: *“I search and read more article which the method is related to my topic, even though the focus of the article is different”*. (Hamidah)

In these data, social strategy represents the discussion and sharing information with friends in community or lecturer through face-to-face discussion or using social media. Hence, the metacognitive strategies shown in mentioned data are searching and reading more articles with the similar method.

In addition, talking about digital media, the findings of this study show digital media that the participants use to help them to determine the research topic.

S11: *“I often access Google Scholar to search the relevant references or other online libraries, for example National Library (Pusnas). If the references I need is not available digitally, I visit offline library directly”.* (Aisyah)

S12: *“I usually explore free-access online library, like PDF Drive, Google Scholar or other web-based resources to search the relevant studies, so, I can get the idea for my research topic.”* (Khodijah)

S13: *“I find many references for my research through online library, such as PDF Drive, Google Scholar and other online websites.”* (Fatimah)

S14: *“I usually search the references through google, I type the keyword that I need, so google will guide me to some online libraries.”* (Hamidah)

The findings show that participants used some digital media, for example, Google Scholar, online library provided by National Library, PDF Drive and other web resources to find out some references and determine the research topic. The data also indicate that the participants are facilitated by digital media in the process of discovering the relevant references, hence, in determining the research topic.

**Strategies and the Use of Digital Media To Cope with Challenges in Collecting and Analyzing Data**

The stage of collecting research data is challenging to the participants, it is shown by the data S15 to S17.

S15: *“..... to me, the challenging one in collecting the data is creating the instrument and getting the relevant respondents”.* (Aisyah)

S16: *“Sometimes, I am confused of finding the participants. Sometimes, I found the interesting research topic and I comprehended well the material but the participants are not available around me”.* (Khodijah)

S17: *“I think, the most difficult challenge in collecting the data is arranging the instrument and creating the effective questions to dig the information deeply”* (Hamidah)

All the participants of this research agree that the lack of respondents and arranging the instrument for their research are the main problems in collecting the data. However, to solve those problems, the participants have their own strategies. The finding showed that social strategy, cognitive strategy, and metacognitive strategy

are the essential in the process of collecting data, those can be seen at S18 to S20.

S18: *“Discussing with friends who understand my problem and have the same interests in research is the best strategy to overcome the problem in collecting the data. We often share out thought each other, and sometime they help me to find the purposive respondents”.* (Aisyah)

S19: *“..... looking for other participants or discussing with my friends or lecturers, I will get some ideas or inspiration through them”.* (Khodijah)

S20: *“I do the easiest way. That is adopting the suitable instrument from the previous study.”* (Hamidah)

Social strategy meant in this finding is discussing with friends who understand about research and also lecturers. In addition, the participants probably got the help and inspiration through discussion. The cognitive strategy is searching the information relating to the stage of data collection and analysis. The metacognitive strategy refers to the effort of understanding the process of collecting and analyzing data.

In addition, Digital media used by participant in collecting and analyzing data of their research are various. S21 and S22 indicate the digital media used to the stage of collecting and analyzing research data

S21: *“To collect the data I often use Google Form, I do surveys through Google Form. And for analyzing the quantitative data I usually use SPSS, but when I analyze the qualitative data, I do it manually, because I have not found the digital media to analyze qualitative data”.* (Aisyah)

S22: *“As long as I conduct the research, I usually collect and analyze the data manually”.* (Khodijah)

**Table 3** Challenges, Strategies, and Use of Digital Media in Collecting and Analyzing Data

Stage	Challenges	Strategies	Use of Digital Media
Collecting and analyzing data	Difficulty in finding participants and arranging the instruments	<ul style="list-style-type: none"> <li>• Discussing with friend in community or lecturers (social)</li> <li>• Searching information and comprehending the process of data collecting and analyzing (cognitive &amp; metacognitive)</li> </ul>	Google-Form SPSS

The classification of strategies as cognitive or metacognitive is determined by the nature of the mental processes they entail. For instance, "Searching information" falls under cognitive strategies as it involves direct cognitive functions like identifying and selecting relevant data. On the other hand, "Comprehending the process of data collecting and analyzing" is categorized as a metacognitive strategy because it necessitates a higher-order awareness of the steps and strategies linked to effective data collection and analysis, reflecting a deeper understanding of these processes beyond their surface-level execution.

The data from the interview show that Google Form is helpful to collect the needed data and SPSS is to analyze the quantitative data. Despite that, the participants have not found the digital media to support analyzing qualitative data.

**Strategies and the Use of Digital Media To Cope with Challenges in Writing Each Section of the Article**

Finally, in process of research article writing in English, the participants often obtain some problems. For example, English language proficiency, plagiarism, time-management and discovering reputable journal articles are the problems faced by participants. Regarding that, the data also show the strategies and use of digital media can support them to complete their research article. It can be seen in Table 4.

**Table 4** Challenges, Strategies, and Use of Digital Media in Writing Research Article

Stage	Challenges	Strategies	Use of Digital Media
Writing each section of research article	<ul style="list-style-type: none"> <li>Limited English language proficiency</li> <li>Plagiarism</li> <li>Time management</li> <li>Discovering related reputable journal article</li> </ul>	<ul style="list-style-type: none"> <li>Searching information relating to the implementation of digital media to help them in writing a research article (cognitive &amp; metacognitive)</li> <li>Asking support from closest people (affective)</li> </ul>	Grammarly Paraphraser.io Mendeley

In much detail, the statements of S23 to S26 represent the challenges faced by students in writing each section of research article

S23: *“Because I am not a native-English speaker but I have to write papers in English, therefore, sometimes I*

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*get problem in arranging the good sentences. And when I got some ideas to be written in my article, unluckily, it was detected as plagiarism”.* (Aisyah)

S24: *“I often get the problem in improving ideas and finding references from reputable journals”.* (Khodijah).

S25: *.... “of course, I get the challenge from the language aspect, because English is not our mother tongue, so I have to struggle with that to provide the good writing. Another challenge is the time management, I have to manage my time well, to conduct my research, to take care of my children and to complete my tasks as a teacher”* (Fatimah).

S26: *“for me, making the description of my finding is the most challenging one”.* (Hamidah)

Regarding to the time-management, when working on research, both native and non-native English speakers have time management issues (Paltridge & Woodrow, 2014). This could be due to a variety of factors, such as selecting an unfamiliar research topic and thus need more time to delve into the related literature, taking longer than expected to obtain ethics committee approval before beginning to collect data, having difficulty balancing study, work, and family responsibilities, and sometimes underestimating the time needed to complete their research (Hajar et al., 2021).

Furthermore, Strategies used by the selected participants in process of article writing are cognitive strategy and metacognitive strategies which refer to the knowledge and the implementation of digital media in research article writing. In addition, the affective strategy in this research is used to get the support from the closest people around the participants. On another hand, they need the support from others to conduct the research, because to conduct the research students must have the strong intension and deep comprehension. According to Paltridge & Woodrow (2014), students may struggle to sustain motivation in scientific research writing due to the project's size and complexity, as well as the limited number of extrinsic motivators, such as tests or due deadlines. The majority of motivation must come from within the learner, from intrinsic sources. Students must be persistent and sustain their interest if they are to complete their research writing.

Furthermore, digital media is used during the process of displaying the research finding into writing. Some websites and applications are commonly used by participants in this stage, and it can be seen at S27 to S30

S27: *“..... to solve some problems in article writing, I use some application such as Grammarly for anticipating the grammar error, paraphraser.io for reducing the*

*plagiarism high-level through paraphrasing, and Mendeley for reference manager*". (Aisyah)

S28: "I use reference manager application which is similar with Mendeley but it is web-based, but I forgot its web address". (Khodijah)

S29: "because I have the big problem in time management, to solve it I make the time-table. And I think the support from others are helpful too". (Fatimah)

S30: "..... to paraphrase the sentences that I want to cite, I use synonym finder web to make it easy". (Hamidah)

The technology used by the participants are *Grammarly* for anticipating the grammar error, *paraphraser.io* for reducing the level of plagiarism through paraphrasing, *Mendeley* for reference manager and other web-applications.

## CONCLUSION

This study aims to identify the challenges faced by EFL postgraduate students while writing the research article and to explore the strategies and digital media they used. In summary, the findings of this research provide additional information about the challenges faced by EFL postgraduate students and strategies and digital media used by them while conducting research article writing. The challenges faced by the participants during conducting the research are various, such as, the limited language proficiency, the difficulty in finding the relevant respondents, seeking the respondents and references, time management, and creating the instruments of data collecting. However, the strategies used by the participants in this study to overcome the mentioned problems are social strategy, cognitive strategy, affective strategy, and metacognitive strategy. Furthermore, the digital media used by them are the tools of spelling and grammar checker, paraphraser, referencing manager, data collection, data analysis and online library. However, this study has some limitations. The findings, while insightful about the challenges, strategies, and digital tools used by EFL postgraduate students in research article writing, might not be widely applicable due to the specific context and participants involved. Also, relying on participants' memories for information could introduce biases or inaccuracies. Furthermore, the study focuses more on identifying challenges and strategies than on evaluating how effective these strategies are or how digital tools impact the writing process. These limitations suggest that caution is needed when interpreting the findings, and future research could explore these aspects more comprehensively. Further research on exploring

strategies and digital media used in research might extend the explanation of the tutorial of using some application to support research

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