Exploring the Strategies for Indicating Research Gaps Used by Authors in English Education Research Article Introductions

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Abstract
The trend of topics in language education research is affected by how authors convince readers about the issues being discussed. However, the persistence of the topic is not based on the number of scholars who have conducted the research, for instance, collaborative writing topics, but it focuses more on the newness to be contributed to the advancement of knowledge by indicating research gaps. Therefore, this qualitative study, which is specified into genre analysis, aims to describe the strategies for indicating research gaps and the area of gaps that are still needed to be fulfilled in the research of collaborative writing. A corpus consisting of 20 research article introductions (RAIs) published in highly reputable journals with high-impact factors was compiled and subjected to analyze, respectively (i.e., using the frameworks of Lim, 2012 and Ewijk, 2018) the types of research gap strategies and the areas of gaps that have been focused on by the authors. The findings show that the strategy of stating the absence of a specific area in the research of collaborative writing is employed in a vast majority (45.45%). Besides, the area of impact is found as the promising area of gap (occurred 24 times) that the authors tend to focus on. The pedagogical implications of this study are also discussed in this article.

Keywords: area of research gap, collaborative writing, niche, research gap

INTRODUCTION

Collaborative writing becomes one of the recent topics in language education. This is in line with Zhang (2019) and Abbas & Fathira (2022) who state that collaborative writing is one of the topics in language education that has been discussed in the past few years. Lei & Liu (2018) in their bibliometric analysis found that collaborative writing is a topic that is noticeably but not significantly increased from 2005-2016. Based on a preliminary meta-analysis, it is found that collaborative writing is still accepted as a trending topic published in highly reputable journals in 2019. However, the number of studies related to collaborative writing is not as many as other topics, such as multilingualism, language ideology, language policy, and social class, which can be said to significantly increased topics in language education. It indicates that the space for collaborative writing issues needs to be reexplored by researchers. It will be more meaningful and helpful if further studies focused on investigating the persistence and acuteness of gaps in the topic of collaborative writing presented in the introduction section of a research article (RA).

Previous studies focusing on genre analysis have been done by some scholars and they focused on comparing moves and steps of the introduction section across writers (Farnia & Barati, 2017; Khany & Tazik, 2010; Mirahayuni, 2002), finding emergent steps in the section (Yayli & Canagarajah, 2014), comparing the rhetorical styles across disciplines (Afshar et al., 2018), and identifying persuasive appeals in the section (Wang & Yang, 2015. However, few studies focusing the authors' research gaps in the section (Robinson et al., 2011; Suryani et al., 2015; Chen & Li, 2019). It needs further studies focused on investigating the process of authors' gaps. And, investigating the gaps in the RA introductions related to the collaborative writing topic could give inspiration for future studies to conduct other issues on it.

The previous scholars claimed that the statements indicating research gaps are important to indicate in the RA introductions, and the gaps affect the future contributions to certain fields (Arianto et al., 2021; Arianto & Basthomi, 2021; Lim, 2012; Suryani et al., 2015). However, what is missing from the research conducted by Robinson et al. (2011) is that they only investigated the types of research gaps without giving a clear explanation of the process of how research gaps are derived. It is similar to the research study conducted by Suryani et al., (2015) in which they only indicated the types of research gaps from the linguistic features employed by authors. Furthermore, Chen and Li (2019) focused on the types of identifying research gaps, but they did not focus on the introduction section.

Another significant aspect of showing the positionality in the research is that the authors must emphasize something which can impress readers in indicating research gaps. Concerning collaborative writing in the language education context, it is also important to investigate which areas (Ewijk, 2018) that had been explored by previous scholars so that we could see other potential issues to investigate or further studies. As such, the research questions of this research are formulated as follows.

1. What are the strategy types for indicating research gaps employed by authors in collaborative writing research?
2. What is the most prominent area of research gaps that the authors have focused on in the research of collaborative writing?

METHOD

Five journals had been selected as the source of data in this research study. Those are the *International Journal of Instruction, Journal of Second Language Writing, Language Learning and Technology, ELT journal,* and *System*. The journals had been selected based on several considerations. First, the journals are categorized as right (not predatory) journals (Renandya, 2014). Besides, they have good impact factors according to the bibliometric analysis (Lei & Liu, 2018). Moreover, the research on collaborative writing has been published as the current issue. So, representativeness, reputation, and accessibility (Amnuai, 2019) have been fulfilled in selecting the source of data. Looking for topics related to collaborative writing published in the journals, finally, twenty articles were analyzed by using a content analysis design.

Content analysis was used in this research. The process of analyzing the data in was done in several stages. First, the introduction sections were isolated to different documents. Second, the data was gathered through the process of extracting words, phrases, and sentences (Patriana et al., 2016) that are indicated as research gaps. The in depth-analysis was done to code and interpret the types of the research gap. The categorizations of research gaps can be identified through the realization of linguistic features indicating research gaps (Table 1).

Table 1. The Categories of Gaps and Linguistic Features Indicating Each Type of Gap (Lim, 2012)

No	Types	Linguistic Features
1	The absence of research	- …remains largely a mystery…, - None of ….; - No systematic…; - …have not been…
2	Insufficient research	- Little attention…; - Limited information…; - …relatively unexplored…
3	Previous research limitations	- …is largely ignored…; - …does not sufficiently…; - …failed to find…
4	Contrast evidence	- …ambiguity…; - …mixed evidence…; - …inconsistent results…

Besides, the same process of analyzing the data in identifying the types of research gaps was also done to identify the areas of research gaps that have been focused on by the authors. To identify the areas of research gaps, the indicators proposed by Ewijk (2018) are adopted (Table 2).

Table 2. The Five Areas of Gaps (Adopted from Ewijk, 2018)

No	Types	Indicators
1	Objectives	Focusing on the improvement of strategy, approach, models, strategies, and so on
2	Impacts	Focusing on the effects of strategy, approach, models, strategies, and so on to several aspects that are investigated
3	Audience	Focusing on students, teachers, or anything about the subject, such as age, learning style, characteristics
4	Content	Focusing on the process or anything happens in certain strategy
5	Institutional context	Focusing on a certain school, university, class, and so on

Based on the two kinds of indicators (i.e., Lim, 2012; Ewijk, 2018), this present study can reveal the types of research gaps employed by the authors in their research article introductions. It can also reveal the prominent areas of research gaps in collaborative writing topics that had been focused on by the authors who published their articles in highly reputable journals.

FINDINGS AND DISCUSSION
Types of Strategies for Indicating Research gap
Based on the results, it was found that five types of indicating research gaps are used by the authors whose focus is collaborative writing issues. The frequency and percentage of using each type of research gap can be seen in the following table.

Table 3. Strategy Types for Indicating Research Gaps in Collaborative Writing Topics Applied by the Authors in Their RA Introductions

No	Types of Research Gaps	Frequency	Percentage
1	Stating controversy among previous specific related research	2	6.06 %
2	Stating limitations or shortcomings in previous specific related research	3	9.09 %
3	Stating inadequacy of previous specific related research	10	30.3 %
4	Stating the absence of a specific area in research	15	45.45 %
5	Stating suggestions from previous researchers	3	9.09 %
	Total	33	100 %

Based on the table above, it can be concluded that authors use stating the absence of a specific area in research as the type of research gap which is mostly used in collaborative writing topics (45.45 %). The absence of research can be established when the authors think that no research is possessed by anyone. It is a full negative (Swales & Feak, 2004) which can be indicated as a newness. It is different from the result conducted by Chen and Li (2019) that stating the inadequacy of previous research studies is the type that has been found in most Chinese academic papers. The difference may be due to the research issues that are focused to be conducted. There are some variables, methods, or contents related to collaborative writing that is needed to be examined, investigated, explored, or explained in the form of research studies.

Moreover, it is also clearly seen that authors rarely used the statement indicating controversy among related findings (6.06 %). The controversy might be due to the different results among previous research findings. The ambiguity and inconsistent evidence from previous research findings (Lim, 2011) turn into gaps for further research studies. In this case, the authors whose research studies are related to collaborative writing presented the type only two times. It means that it still needs to observe more issues related to collaborative writing to be compared among the studies and as found in the table above, it can be claimed that issues in collaborative writing topics are still worth investigating.

Stating controversy among previous specific related research
This strategy is derived from the contradictory evidence from previous research studies, especially in the findings. It means that after the authors present several results from the existing research study and find contradictory results or conflicts between the research studies, the type of gap will be presented.

Data 1

...the *few studies* conducted in L2 writing contexts have produced *contradictory results*. *For instance*, Meraji (2011) observed a positive effect of *pre-task planning* on all aspects of L2 writing.

Data 1 above indicates that the authors derive the research gap from the contradictory evidence. The contradictory results from previous research studies lead to unclear results on whether **pre-task planning** can give a similar impact on the students' L2 writing aspects. The use of **'contradictory'** as the linguistic feature indicating controversy is also presented in the sentence. This finding confirms the study conducted by Lim (2012) that the controversial issues can be indicated by how authors express their ideas in the form of sentences especially putting the noun phrases, such as *'inconsistent results', 'debate in literature', or 'ambiguity'*.

Previous research findings may give different results leading to confusion about whether certain variable gives a better effect or not. Stating controversy among previous specific research can be closely related to experimental research in which some manipulations only give better for certain conditions. The controversy can be started by presenting the topicality (Lindeberg, 2004), in this case, out-of-class, which potentially gives a novel contribution to the topic of collaborative writing. Moreover, the type of gap can be strengthened by the voice of previous researchers, such as what the authors have done in the example (i.e. suggestion from Arnold & Ducate, 2006).

Stating limitations or shortcomings in previous specific related research

Fundamentally, there is no perfect research report. There must be some weaknesses or limitations after conducting research. Readers can find the shortcomings of the results or the conclusion sections.

Data 2

While **these studies** have improved our understanding of the L2 writing and learning process, they have *left out* analyses of the collaboratively written text itself.

The phrasal verb **'left out'** indicates that the authors have criticized previous studies and found weaknesses in the results. The thing that the previous researchers did to indicate limitations or shortcomings, in this data, is based on the assumption that **'these studies'** ignore the collaboratively written text to investigate. Moreno & Swales (2018) have also found that the words which have a function to give a signal such as *'lack'* can be indicated as the expression of authors toward the previous research limitations. Lim (2012) has also proposed negative verb phrases, such as 'have not been considered', 'has not demonstrated', 'has not sufficiently explained', etc.

Showing the shortcomings of previous studies might open possible contributions to the body of knowledge. In the area of research, a critical evaluation is needed if authors use and present sources in their papers (Yuqin & Lin, 2018), and the shortcomings from previous studies are closely related to the ability of authors in evaluating the existing research studies. Moreover, Hunston and Thompson (2000) claim that the evaluation can be referred to as the authors' judgments, and Hyland (2013) has also proposed the evaluative stance to be used, such as *'unfortunately', 'interesting', 'good', 'bad'* or any personal judgments.

Stating inadequacy of previous specific related research

The inadequacy is usually used as the type of identifying research gap. It functions to identify the area which can be extended to a certain topic. The extension of research can be indicated by issues which still inadequate to be discussed. In other words, the research topic is still claimed as new research or it is underway to be well-established research.

Data 3

Few studies have investigated *planning in L2 writing*, and most explored the effect of individual planning, rather than collaborative planning, on writing (Ellis & Yuan, 2004; Kroll, 1990; Mancho´n & Roca de Larios, 2007; Ojima, 2006).

The use of the quantifier **'few'** followed by the noun **'studies'** in the statement indicating as a research gap is believed that the topic of **'planning in L2 writing'** needs to be extended. The authors put the statement indicating the inadequacy of an issue, in this case, is planning, from the voices of previous researchers (i.e. Ellis & Yuan, 2004; Kroll, 1990; Mancho´n & Roca de Larios, 2007; Ojima, 2006). This result also confirms the claim of Lim (2012) that the insufficient number of research indicating inadequacy can be detected from the words such as *'little research', 'sparse knowledge', 'seldom been studied'*, etc. by the authors in their statements of gaps.

The statements indicating inadequacy may be used as the initial steps to establish a research niche. As Swales (1990) has claimed that the quantifiers, such as few, little, etc. can be used as the opening sentence and it can be followed by the list of previous research studies that have been evaluated by the authors in their introduction. The quantifier words indicating quasi-negative can be rarely used by authors because the sense of rhetoric is close to the weak gap (Swales & Feak, 2004). The logical reason is that the authors only assume that the number of research related to the issues is not many but others may assume that those issues are widely investigated.

Stating the absence of a specific area in research

This type is used when authors find the missing thing from the issues which are going to research. They may claim the absence of variables from the previous related research which can give better results if is going to be conducted for future research. The missing or absent things from previous research studies can be found in the entire sections of research articles that are reviewed.

Data 4

To the best knowledge of *the researchers*, however, studies on collaborative task performance are *scarce* and need further investigations; this is while collaboration seems to be an obvious function of communication and *hard to be overlooked*.

From the data above, it is clear that the authors conclude the previous researchers' voices leading to a statement of the absence of a specific area. The word **'scarce'** is derived from the claims of **'the researchers'** who said that none of the previous research studies focus on the **'collaborative task'**. The absence of research is indicated when the authors believe that there is no previous research related to the issues that they want to conduct. The statements of no studies are noticeable can be used as the type of research gaps and the editorial team of the publication will be impressed by the statement because it indicates novelty.

Novelty can be indicated as the research has not been published by anyone. However, it is not only about putting 'full negative' words (Swales & Feak, 2004), such as 'has not been investigated, nonetheless, 'remains largely a mystery, has not examined' (Lim, 2012), but it also about deriving the 'no research' from evaluating previous research studies. So, the detection of a certain issue must be in the form of research studies evaluation. It means that to claim that no research has been examined yet, authors must present the gap based on the research world.

Stating suggestions from previous researchers

The authors may find gaps in what has been suggested by previous research authors. This type can be used as research gaps because the voice of previous authors is believed to be valid statements. The statements which are derived from previous research studies indicating suggestion proves that it still needs some research to be conducted.

Data 5

Despite this gap in the research literature, *many* *textbooks* *suggest* the use of collaborative writing tasks to pre-and in-service teachers *(Ferris and Hedgcock, 2013; Peregoy and Boyle, 2012)*.

The word *'suggest'* indicates that authors also receive suggestions from *'many'* writers of the *'textbooks'* that pre-and in-service teachers should also be impacted by the use of collaborative writing tasks. In this case, to make a strong argument, the authors bring the statement from the previous researchers (i.e. Ferris and Hedgcock, 2013; Peregoy and Boyle, 2012). It can be used as the type of research gap when authors avoid criticizing previous research studies. However, this type is claimed to be a weak gap because of a lack of critical review from the authors of previous research studies.

Avoiding criticizing previous works of others may happen when authors think that they have no right to criticize previous researchers who have a higher capacity than them (Burgess, 1997). Another reason is feeling afraid of invalid and unacceptable critics (Khany & Tazik, 2010) after they review previous research findings. Sheldon (2011) also found that Spanish authors ignored to criticize previous researchers' works because they feel that they are small in the community where they stand. However, in this research, this type is categorized as the rare type of research gap used by the authors in their RA introductions. It means that criticizing previous research findings is very important for authors to avoid positive justification and only listen to the previous researchers' suggestions.

The Areas of research gaps in the topics of collaborative writing research

Based on the result concerning the areas of gaps, it was found that objectives, impact, audience, and content are claimed as the potential areas of collaborative writing issues on which the gaps are based on. The proportion of each area that is becoming the focus of establishing research gaps can be seen in the Table 4.

Table 4. Areas of Research Gaps Found from the Topic of Collaborative Writing

No	Areas of Research Gaps	Frequency	Percentage
1	Objective	1	3.03 %
2	Impact	24	72.72 %
3	Audience	4	12.12 %
4	Content	5	15.15 %
5	Institutional context	-	-
	Total	33	100 %

Based on the Table 4, it can be noticed that authors tend to establish their research gaps by focusing on the area of impact. The impact can be closely related to the treatment as in experimental research and also mixed-method design. The research gaps focusing on impacts can be as promising directions (Ewijk, 2018) for further studies on the topic of collaborative writing (occurred 24 times). It can be assumed that authors focused more on experimenting with the aspects of collaborative writing which can be affected or impacted the students' writing quality. It is also supported by the evidence on the types of strategies for indicating research gaps (Table 3) that the absence of specific related research in collaborative writing becomes the types of strategies used by authors to propose the aspects such as the revision stage on collaborative writing (Hanjani, 2015), peer feedback in collaborative writing (Alshuraidah & Storch, 2019), and technology in collaborative writing (Bikowski & Vithanage, 2016)

Moreover, it is surprising to see from the table that the objective is the area that is rarely focused on by collaborative writing research authors (3.03%). Content areas, such as developing methods in collaborative writing (Wette, 2015), and audience areas, such as students' perception (Chen & Yu, 2019) also are also appeared in a small number of areas to propose as future research. However, due to the little research evidence on perceptions and method or strategy development in collaborative writing, those can be criticized to find gaps for further research studies. At least authors may concern with giving a wider description of the students' perceive helpfulness toward the implementation of collaborative writing in some situations. Besides, based on the data, it seems that institutional context is avoided as the potential area to establish research gaps. A research article is disseminated to give contributions and benefits to a wider community (Tarkang, Kweku, & Zotor, 2017). It can be logically concluded that if authors only aim to give a contribution to a certain institution, the contribution may not be impacted by the others.

Objective as a Research Gap

The objective is the area in which authors present their gaps. The gaps can be based on the limitations or shortcomings of the objective of certain issues. The biased information can be indicated by the wrong objectives that had been proposed by previous researchers. Besides, it can be about the missing objectives which have not been investigated by the previous research studies.

Data 6

However, as implied in Storch (2013), *this model* fails to factor in the fluctuating nature of learners' *dyadic interaction*. That is, this model *does not capture* the situation in which learners demonstrate various collaboration patterns when discussing different aspects of a *CW task*.

Based on the Data 6, it can be noticed that the objective as the area of the gap is not only about promoting strategy to readers (Ewijk, 2018) but in this case, it is also about the failure of the method so that the objective of the research studies cannot decently reach the objectives. It can see from the data above that Zhang (2019) who is the author of the article, has criticized the model proposed by Storch (2013). She claims that the model cannot capture the various situations. The failure of the previous model can give impact the objective of research studies so she tries to rebuild the revised model which is suitable for various situations.

Impacts as Research Gaps

In establishing research gaps, authors can come up with the variable 'x' that can give a significant effect on 'y'. Authors may conduct experimental research to see the impact of collaborative writing or do any other design with the purpose is to see the impact of collaborative writing on certain issues in writing.

Data 7

It was *unclear* whether *out-of-class collaboration* could achieve a similar *effect*, and, if so, in which *L2 writing aspects*. *Arnold and Ducate (2006)* suggest that the collaborative learning experience can be *affected* by context.

From the data above, it can be seen that the authors propose another situation (i.e. out-of-class collaboration) to see its impact on the students' L2 writing aspects. Moreover, the proposed issue is also supported by the voices of previous researchers (i.e. Arnold & Ducate, 2006). It can be concluded that collaborative writing still has a trend to be investigated in the form of examining effects as long as authors have something new to experiment. Moreover, it can give a strong gap if authors also cite the same argument. Readers can also accept the logic gap if more than one authors agree to experiment and see the effect of a certain variable.

Furthermore, concerning impacts or effects, Hanjani (2015) claims that few research studies focused on examining the area of writing which are potentially affected by collaborative writing revision. Besides, peer feedback in collaborative writing can also support the quality of writing (Alshuraidah & Storch, 2019). On the other hand, to compare with an individual from another group, collaborative planning can also possible to conduct (Neumann & McDonough, 2015). Moreover, to be more specific on the product of collaborative writing, it needs to examine the effect of collaborative writing on the accuracy and fluency of texts (Li & Zhu, 2017).

Audiences as Research Gaps

The audience, in this case, is students. Anything about students can be indicated as research gaps that can be investigated or examined in future research studies.

Data 8

No research has been published to date, however, focusing on the possible *individual* English language learning gains via *technology* enhanced *collaborative writing projects*.

The data above shows that the authors also investigated the perceptions of students toward the use of technology in a collaborative writing project. In the audience area, researchers can see the point of view of students after giving treatments and they may focus on the characteristics, age, gender, or anything about the sample that they want to investigate (Ewijk, 2018). In this collaborative writing, in the data above, the authors focus on students' perceptions of the quality of collaborative writing projects via technology.

The other research gap on the topic of collaborative writing focusing on the audience is about how students negotiate their tasks in wiki texts (Li & Kim, 2016). Besides, it would be better for conducting research focusing on students' interactions in L1 and L2 during collaborative writing (Zhang, 2018). Moreover, students' perceptions and attitudes and the factors which affect the pattern of interaction during collaborative

activity are also important to investigate (Chen & Yu, 2019; Wigglesworth & Storch, 2012).

Contents Research Gaps

Concerning the content, authors can also find the research gaps related to specific aspects of collaborative writing which may be the potential to focus on. In this research, the authors focus to investigate the aspects of collaborative writing which can be evaluated or improved.

Data 9

However, little research to date has investigated what *interaction dynamics* may occur when small groups of students work across writing tasks and what *factors* may account for dynamic interactions during *collaborative wiki writing*.

Based on the Data 9, it shows the authors clearly stated that they investigated the pattern of interaction that occurred in small groups across writing tasks. Authors can do an in-depth analysis to see the pattern of interaction in collaborative writing done by students. In other disciplines such as curriculum or syllabus development, the other aspects of contents that can be claimed as research gaps can be about evaluating the method, courses, roles of strategies, etc. (Ewijk, 2018) but in this case, authors focused on how the interaction is done. Besides, they also combined with the other area called the audience (i.e. students) to see the factors which also contributed to the dynamic interactions.

Moreover, concerning the content as the area of research gap, it is also important for future research to investigate the methods or best practices in which collaborative writing is involved (Wette, 2015; Leki et al., 2008; Hinkel, 2011). The pattern of interactions during collaborative activities can also be the focus of investigation (Cho, 2017; Storch, 2013). Moreover, Li & Zhu (2017) also suggest seeing the connection between peer interaction and the products of collaborative wiki writing.

CONCLUSION

To produce novelty in a research article, authors must indicate research gaps from previous studies. They have to present previous research studies, discuss, and criticize what the existing studies have done. This current study has verified the applicability of Swales's model (1990) focusing on the step of indicating a research gap. The linguistic features used to identify the statements indicating research gaps successfully revealed the five types of research gaps in the topic of collaborative writing. Although the authors have presented their gaps in various ways, the absence of a specific area in collaboration has been found in most. It can be indicated that there are still many things that future researchers can do to contribute to the advancement of knowledge, especially in collaborative writing topics. In this study, it was found that the topic is underway to be developed as well as established research. The authors might not be able to contradict or present conflicts from previous research findings. It is also proved that stating controversy among previous studies of collaborative writing is found in a vast minority. This study provides the areas of gaps that have been focused on. The findings can be adapted to inform future researchers that previously existing studies had been focused more on examining the impact of collaborative writing on a certain variable of writing products. On the other hand, the institutional context is avoided in the area of research gaps presented by the authors in a collaborative writing topic. It can be indicated that they tried

to make the result more applicable to the wider community by not stating the needs of their institutions. It suggests to other authors that the advancement of knowledge can be done if authors avoid stating the names of institutions that they want to conduct in their RA introductions.

This study also provides important pedagogical implications. Generally, investigating RAs following genre analysis can shed some light on writing research articles for publications. It could be integrated to the language teaching or teaching English for academic purposes curriculums in which students have to accomplish academic writing. Students have to be aware about the rhetorical conventions in research article writing which can be understood by readers. In addition to that, the results of analyzing research articles could give additional information for doctoral students, specifically in Indonesian context, have to publish their RAs to reputable journals indexed by a reputable database namely Scopus. Therefore, teachers need to encourage the students to understand the rhetorical moves and the linguistic markers that are realized in each move. This study could give an additional reference to non-native authors to understand how to indicate research gaps in the introduction section. They may consider several strategies for indicating research gaps to show their positionality in the introduction section. Besides, in an academic writing course, lecturers may explain to their students about how propose the topics being studied in the introduction section. The have to lead their students to not only introduce the research topics, but also discuss and review the related studies, so that they can indicate their research gaps about the topics being proposed. Another important thing to consider in indicating research gaps is considering the areas of gaps. Teachers may explain several areas of gaps to the students so that the students can understand which areas are better to focus on and potential to reach the attention of gatekeepers of publications.

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