

ORIGINAL ARTICLE

Investigation into the research on doctoral writing: A synthesis of recent research (2010-2019)

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Abstract: Doctoral writing has been concerned by linguistic scholars and the practitioners of English for academic purposes. This review explores the literature on doctoral writing which got published in peer-reviewed international journals of English between 2010 and 2019 to examine three questions: (1) From which perspectives do the recent researches adopt when examining doctoral writing of the ESOL students? (2) What methodology do the authors apply to research doctoral writing? (3) What kind of text or resource was analyzed by the authors? The goal of the review is to provide the pedagogical suggestions to the future teaching of doctoral writing and viable supports for the writing practice of doctoral students by a comprehensive analysis of the current research. After the overall search on *Scopus*, 210 titles and abstracts have been searched out through a combination of search terms. The inclusion and exclusion criteria have been used to identify the qualified articles for this study and disqualify the possibly irrelevant articles from the included. Ultimately, 82 articles have been confirmed to be further reviewed for the solution of research questions. This review indicates the relationship between doctoral writing and pedagogical and social context is complex, and thus necessary supports from inside and outside of doctoral community need to be given to improve the writing competence of doctoral students.

Keywords: doctoral students; doctoral writing; systematic review; Scopus

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1. Introduction

Over the past few decades, the number of multilingual doctoral students has been increasing globally. Even though the doctoral students have different language background, a growing number of doctoral students are being required to publish their research outcomes in English, and even write their doctoral dissertation or thesis in English. Surely, the dissertation written in English and the publications on top journals of English provide a way for doctoral students to engage themselves into the academia, thus enhancing career opportunities. For English to Speakers of Other Languages

(ESOL), however, writing in English for dissertation and publication is quite a unique challenge. Therefore, exploring doctoral writing from various perspectives is very critical for helping enhance the writing competence of doctoral students. This decade has been witnessing the research on doctoral writing has been conducted deeper and wider, and some changes have emerged as new trends in facilitating the scholarly development of doctoral students (Morton, 2019: 15-23; Ma, 2019: 72–79; González-Ocampo, 2018: 387–401). This review is thus to examine how the literature characterizes the construction of the overall research on advanced academic writing of doctoral students. Such a synthesis is helpful for understanding the fruits of previous studies and figuring out the possible gaps for future study.

Specifically, the present review examines a more updating range of relevant studies about doctoral students' writing, including different aspects concerning writing practice, and pedagogical approaches, and institutional supports for achieving better writing outcomes. The research goals would be set as follows. First, it aims to provide an overview of the studies ranging from 2010 to 2019 about doctoral students' writing. Second, based on the review, some constructive suggestions will be hopefully given to improve the writing practice of doctoral students and the pedagogical approaches. Therefore, this article is constructed for achieving these two research goals. The data selection and collection have been first described in the Method section. Then, the results of the reviewed 82 articles are coded into the four categories, namely, key themes, theoretical perspectives, methodology, resources for analysis, and what the literature said has been specifically explicated in the discussion section. Finally, future research has been discussed after the limitation of this review has been stated.

2. Method

2.1. Search strategy

The research method of systematic review emphasizes selecting studies systematically for analysis and analyzing studies with transparent criteria (Cheng, 2019: 36–47). This subpart includes the description of the search process, inclusion criteria, exclusion criteria and the reasons for these criteria in order to help evaluate the findings from this systematic review more effectively.

The systematic review procedure was developed to locate studies for consideration. The literature search was conducted via the Scopus since “Scopus is the largest abstract and citation database of peer-reviewed literature: scientific journals, books and conference proceedings.” (<https://www.elsevier.com/solutions/Scopus>). Multiple configurations of the content search terms have been used, *doctoral writing*, *academic writing*, *writing for academic purposes*, with the population search term: *doctoral student*, *PhD student*, and finally this search yielded 210 titles and abstracts (The last visit was on June. 4 2019). The 210 titles and abstracts were downloaded in the format of PDF.

2.2. Inclusion and exclusion criteria

The following inclusion criteria for identifying the articles have been established: (a) published in a peer-reviewed international journal of English between 2010-2019, (b) focused on doctoral students and their writings in English for academic purposes, such as for publication or for degree, (c) examined some certain aspects of writing activities and outcomes, and all that related to writing process, and (d) specified research for supporting doctoral student's writing. These criteria have

been applied to the 210 titles and abstracts, and resulted in 156 unduplicated abstracts (See **Table 1**).

Table 1. Inclusion and exclusion criteria

Criteria	Definition
<i>Inclusion</i>	
Published in a peer-review journal	In order to be included, the study limited the scope of review to the journals. Book publication or book chapters or conference papers were excluded.
Focus on doctoral students	In the review, only doctoral students will be examined. Master students, bachelors, and other groups of students were excluded.
Focus on academic writing	In this review, articles must be closely related to academic writing. Narrative writing / creative writing / medical writing were excluded
<i>Exclusion</i>	
Just mentioned doctoral writing	Studies examining the general writing, just mentioning doctoral students in the discussion part were excluded.

Citations would be excluded if they discussed *doctoral students*, but no substantial research about academic writing has been involved. For instance, through the consultation of full articles, quite a lot articles are found to be about medical writing or writing prescription by medical students, which probably results from the search term doctoral student. In such cases, the articles would be excluded. Besides, there are two duplicate abstracts because they both appear in proceedings of conferences and journals, so they were excluded. Finally, 82 articles in total met these abovementioned criteria and they were included in this review. All 82 studies were published in English. The PRISMA flow diagram of screening the literature was shown in **Figure 1**.

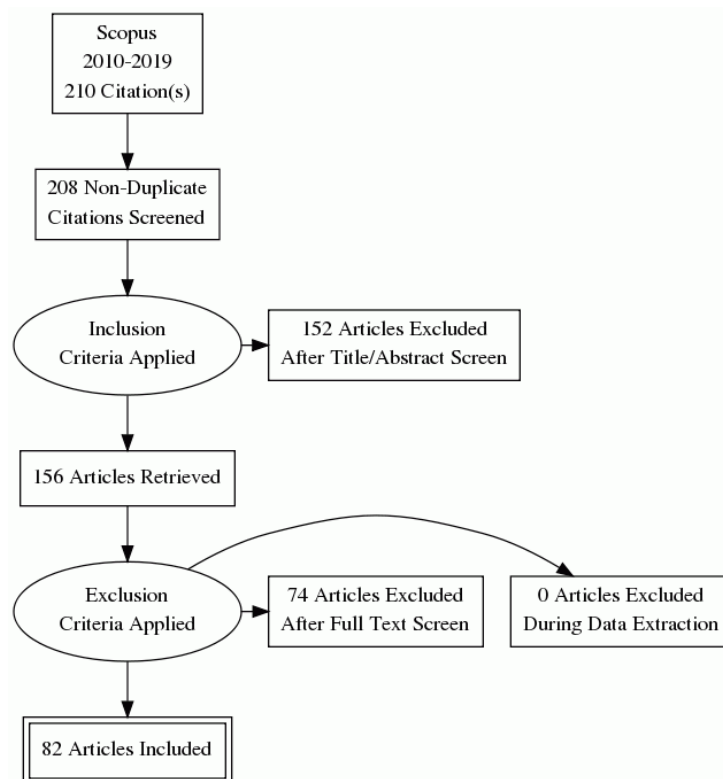


Figure 1. The PRISMA Flow Diagram of screening the literature

2.3. Research questions

The following three questions were addressed in this systematic review.

- (1) From which perspectives do the recent researches adopt when examining doctoral writing in English for advanced academic purposes?
- (2) What methodology do the authors apply to research doctoral students' academic writing?
- (3) What are the resources or texts collected by the authors for research analysis?

These questions are aimed to profile the common scope of the literature and the specific topics the literature discussed, will contribute to a better understanding of how the research on doctoral writing has been theorized and approached over the past ten years, highlighting what strength the existing studies have and what the studies have possibly overlooked. In general, the three questions have been aimed to achieve a wider coverage of the existing research of doctoral writing in the ESOL field.

2.4. Analysis procedures of the articles

The data has been analyzed by using conventional content analysis to address the research questions and possibly obtain insights into doctoral students' academic writing development. First, each article has been read in order to gain an overall mastery of the investigation. Second, the purpose of each study, research methods, major findings, have been examined. Two independent reviewers, who are English majors in their second year of postgraduate program, determine if the research questions listed above were discussed or answered in the studies. When there is a certain study addressing one of three questions, the two independent reviewers recorded the finding of that study and a citation. If there were disagreements between them, they resolved those disagreements by face-to-face discussion. Likewise, the author conducted another comprehensive analysis, and compared her own analysis with that of the two independent reviewers for avoiding the possible bias. We discussed together to confirm the results we have found in order to increase the reliability of the analysis.

3. Results and discussions

The 82 articles were investigated by using the coding method and accordingly drawn out themes from the data (Creswell 2013). Information about the theoretical perspectives adopted by the articles, the methodology of each study, and the texts selected by the authors, were recorded manually. Specifically, methodology refers to the qualitative and/or quantitative method, and the tools or approaches for data analysis; texts or resources have a broader sense in that it includes the digital text or corpus. See **Table 2** for the example of codes.

3.1. The overall research between 2010 and 2019

Doctoral education would be aimed at providing the prospective research platform for the academic and teaching personnel, future experts and researchers. Writing competence of doctoral students for advanced academic purposes is essential for their future research career. That's reason why researchers have been exploring into the nature of writing competence of doctoral students by conducting the macro or micro investigation. In terms of the overall situation indicated in the

Table 2. Examples of codes

Authors	Year	Title	Theoretical perspective	Methodology	Type of text analyzed	Findings
Lei, J., Hu, G	2019	Doctoral candidates' dual role as student and expert scholarly writer: An activity theory perspective	An activity theory perspective	Qualitative; Yamagata-Lynch's approach	The students' manuscript drafts and related artifacts (comments on manuscripts, or correspondence with journal editors).	The students dealt with this tension concerning the students' dual role as student and expert scholarly writer. These findings point to a deep-seated structural tension in doctoral education could also enable them to acquire the skills of the trade to publish and to be socialized into their disciplinary communities.
Inouye, K., McAlpine, L	2019	Developing academic identity: a review of the literature on doctoral writing and feedback	A systematic review perspective	The systematic search; code	Abstracts; full articles	The literature draws primarily on sociocultural perspectives of examining writing and feedback through the lens of the practices of the groups. Two gaps are highlighted. The first is the lack of attention to individual variation. The second is the potential influence of feedback on critical thinking.
Negretti, R., McGrath, L	2018	Scaffolding genre knowledge and metacognition: Insights from an L2 doctoral research writing course	Scaffolding; metacognition	Inter-disciplinary approach; qualitative	An account of writing context; genre visualization; a record of interview	The metacognitive tasks elicited an integrated view of genre and encouraged students' conceptualization of this knowledge as a tool for writing.
Okuda, T., Anderson, T.	2018	Second Language Graduate Students' Experiences at the Writing Center: A Language Socialization Perspective	A language socialization perspective	Case studies; Braun and Clarke's phases of thematic analysis; qualitative	Records of Semi-structured interviews; records of student-generated written narratives	Students spend considerable time and effort seeking out writing support, but only the master's students make full use of the writing center tutorials due to her strategic socialization of the tutor.

existing studies, the number of documents about doctoral students' writing has been growing steadily during the ten years. In the year of 2010 were 3 articles about doctoral writing published, but it came to 17 related papers published in the year of 2018 (See **Figure 2**). According to the documents by countries or territory provided by *Scopus* statistics, the number of authors from English speaking countries has been much more than authors from non-English speaking countries. The result indicates that it is quite a demanding task for authors of ESOL to publish academic papers in English, and that writing dissertation or writing for publication in English brings heavy pressure to doctoral students of ESOL. This might partly explain that research on how to provide efficient supports for doctoral writing has been apparently increasing.

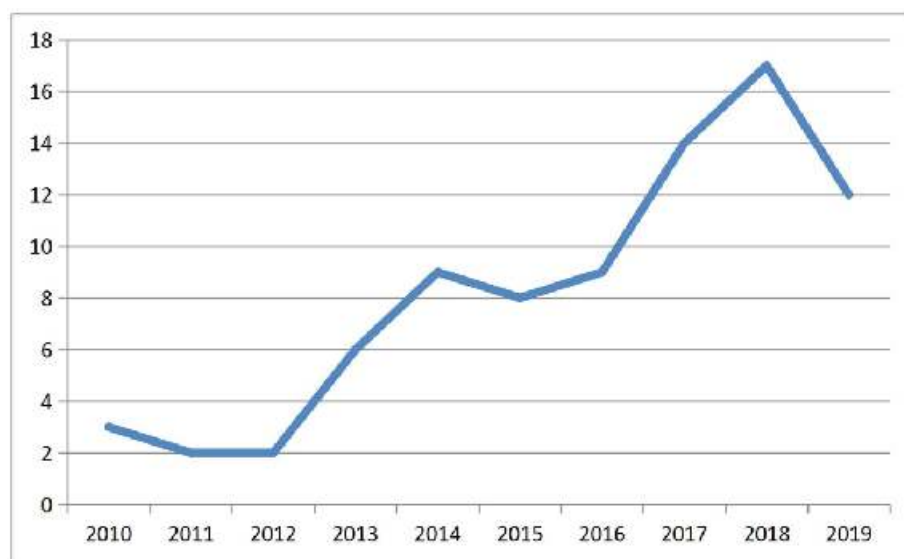


Figure 2. The documents published between 2010 and 2019.

3.2. The findings about the three questions

During the period of 2010-2019, the research of doctoral writing hasn't evidently manifested a new trend or a radical change of orientation, but undoubtedly, the investigation has been becoming much deeper and more comprehensive based on a relatively larger population of doctoral students and a longitudinal timespan of study. Interdisciplinary or cross-discipline study has been flourishing during the ten years, partly because learning at doctoral level is interdisciplinary in nature. Therefore, the methodology adopted by the researcher could possibly integrate the research methods of language teaching and learning with those of other disciplines rather than simply from the field of linguistics, and the text or resource collected for analysis has been multifaceted. The results of the review are presented in **Table 3**.

At the ranking of occurrences of the same *key theme*, the number of research on feedback and supervision was ranked as the first place. The result coincidentally matches the finding of Inouye and McAlpine's research in that they ensure the relevant studies have the centrality of feedback on doctoral writing (Inouye and McAlpine, 2019: 13). Pedagogical research has focused on the classroom activities of doctoral students in narrow sense, and in broader sense, on the research of performance and activities of doctoral students, so 18 researches were pertinent to the theme. Authorial identity has been concerned by many researchers in the field of doctoral writing. The

importance of an authorial voice in doctoral writing has been widely acknowledged, so the related studies have been much deeper than ever. All studies, no matter what specific aims they struggle to achieve, share a similar objective to support doctoral writing in a more effective way. The analyses of doctoral dissertation and journal articles have been conducted by many researchers for digging into the doctoral writing. Research on academic literacy development has been relatively scant during the ten years. Nevertheless, the academic literacy development has been considered and discussed by researchers in their specific studies. Admittedly, although the key themes could not be clear-cut but inevitably overlapping in the existing researches, the themes have been categorized into the six subtopics in accordance with the focus of each individual study. The theoretical perspective and methodology listed in Table 3 would be further discussed in the following part. The section below would specify the texts or resources collected for analyses.

Table 3. The results of reviewing the existing research between 2010-2019

Key themes	Occurrences (Total=82)	Theoretical perspective	Methodology	Text or resource collected for analysis
1. Pedagogical research	18	(1) activity theory perspective;	General methodology of qualitative and/or quantitative: (1) Case study; (2) Person-centered approach; (3) semi-structured in-depth interview; (4) systematic review; (5) specialist software, NVivo; Confirmatory factor analysis (CFA); LISREL, etc. (6) Structural Equation Modeling	(1) tutorial record; (2) reflective journals; (3) web-based corpus; (4) the collection of writing tasks;
2. Supervision and feedback	20	(2) auto-ethnographic theory;		
3. Authorial identity or voice or stance	12	(3) Review theory;		
4. Support from universities or institutions	15	(4) language socialization perspective;		
5. Academic literacy development	2	(5) system theory;		
6. Analysis of dissertation or journal articles	15	(6) a text-linguistic perspective; (7) Positioning theory; (8) Goffman's theory of Stigma		

3.3. What the literature said specifically

With regard to the research of the doctoral writing published in the year of 2010, The studies were characterized by exemplifying the experience of doctoral students (Evan and Stevenson, 2010: 239–250), or pointing out the difficulties experienced by doctoral students when writing (Castelló et al., 2010: 521–537). During that period, researches were mainly about the degree dissertation, which is quite interesting. Probably, publishing hadn't been so significant as that in the present time. Coincidentally, one article, entitled as *Starting to publish academic research as a doctoral student*, may partly explain the situation ten years ago, and it presented some opinions, views and advice that graduate students might consider in order to assess and improve their success as new scholars (Stoilescu and McDougall, 2010). Back to the year of 2010, researches were mostly performed in a retrospective way by describing the situation then or reflecting upon the situation. Though topics about internalization and cross-disciplinary structured programs have been becoming popular in 2011 (Bastalich, 2011; Magyar, 2011), it seemed that the trend didn't influence the research of doctoral writing which still remained within a specific discipline. The qualitative and quantitative method had been adopted in a research for doctoral students' perceptions and attitudes toward written feedback for academic writing. This study investigated social science doctoral students' perceptions and attitudes toward written feedback about their academic writing and

towards those who provide it. An explanatory model was established in the study to describe the complex relationships between what the students have responded to the feedback and other relevant factors. Structural Equation Modeling analysis was applied into the questionnaire analysis and the explanation of the complex relationships about feedback practices relating to doctoral students (Can and Walker, 2011: 508–536).

In the year of 2012, five articles concerning doctoral students' writing got published. Paltridge & Starfield examined the overall organization patterns of doctoral theses, and the texts that students submit as part of examination; and compared the patterns of organization with those of more established doctoral dissertation (Paltridge and Starfield, 2012: 332–344). More theoretically, a text-linguistic approach to advanced academic writing was put forward to compensate a typical corpus approach to explore lexico-grammatical patterns at the sentence level. The study discovered that effective authorial stance-taking plays an essential role in effective academic argument based on a stance corpus. Computer corpora tools and contextual examples would help L2 academic writers (Chang, 2012: 209–236). At a relatively micro level, Lei investigated the linking adverbials in the academic writing of Chinese doctoral students, and the results indicated that the doctoral students had preference to use a limited set of linking adverbials than the professional writers did (Lei, 2012: 267–275). Carter illustrated by the record of his own experience that academic writing can be regarded as a form of action research as writing makes individuals more competent in academic research and accumulates knowledge for favorable changes (Carter, 2012: 407–421).

The year of 2013 witnessed the diversity of research about the writing of doctoral students. As interdisciplinary research becomes increasingly common in universities, Guerin has proposed that multidisciplinary doctoral writing groups could bring researchers together, and that the cross-discipline connection and cooperation will benefit students in the current research environment. (Guerin, 2013: 137–150). In order to measure doctoral students' understanding of academic writing, Lonka created the writing process questionnaire to analyze 669 Ph.D students from a major Finnish university in terms of their ideas of academic writing. Their study covered scales for measuring six distinct theoretical constructs: Blocks, Procrastination, Perfectionism, Innate ability, Knowledge transforming, and Productivity. The quantitative analysis tools of CFA (Confirmatory factor analysis) and LISREL were adopted to verify the construct and the writing scale (Lonka et al., 2013: 245–269). In order to examine if the diversity in collaborative research communities could promote doctoral students' writing, Guerin C et al. investigated an academic developer and eight members of a writing group of a Discipline of Public Health through their experiences of cooperation in a multicultural, multidisciplinary group of thesis writing. Since doctoral projects are interdisciplinary in nature, the findings of their research confirmed that students with diversified backgrounds can build an inclusive, dynamic research community through collaboration (Guerin, 2013: 65–81). With regard to the review process, supports of peer-reviewers and editors would help authors a lot to produce their best work, and thus Wisker explored the entire review process in which doctoral students, researchers, teachers, other academic practitioners were involved (Wisker, 2013: 344–356). And system theory was utilized to examine non-native English-speaking student writing for publication through the data of field interviews, semi-structured and text-based interviews.

Writing support still seemed to be a common concern in 2014. Murphy, et al. conducted a study of a writing support group composed of graduates in a research-based university in Canada and adopted a self-study to investigate how the support group helped them to guide the process of

their dissertations' writing, and the results revealed the supportive role of writing group is very important in developing the identity of researcher and their writing (Murphy et al., 2014: 239–254). Colombo stated that the problem of low graduation rates at the graduate level has been linked to the challenges of dissertation work, and thus discovered that the emotional, financial, economic, and academic support offered by social ties was necessary, based on the qualitative study of in-depth interviews (Colombo, 2014: 81–96). Chang presented a more comprehensive perspective to investigate doctoral students' knowledge of authorial stance and the relationship of conceptions to the participants' epistemic beliefs (Chang, 2014: 525–542). Hakkarainen examined that the social shaping of practices of collaborative authoring in doctoral programs (Hakkarainen, 2014: 11–29). Maher established a socialization and supervisor pedagogy framework and exposed challenges encountered by students in the writing process based on the narratives of faculty (Maher, 2014: 699–711). An exploratory mixed methods approach was adopted to discover doctoral students' preferences and needs concerning written feedback on academic writing (Can, 2014: 303–318). Basturkmen examined the supervisors' on-script feedback comments on drafts of dissertations and set up descriptive frameworks which may be valuable for supervisors (Basturkmen, 2014: 432–455). Dressen-Hammouda paid attention to how the voice of a scientific writer changed after the PhD dissertation through a longitudinal exploration of experienced writers in geology (Dressen, 2014: 14–25). In EAP writing, the ability to combine content and language contributes to the participants' academic researches in the future, and integrating thinking patterns and cultural awareness in academic writing would be important for writers (Gao, 2015: 113–123). Mandell et al. presented a course for Social Work PhD students called Writing for Publication, and they reported the study of evaluating its success in supporting students to develop and submit a paper for a refereed journal (Mandell, 2015: 197–212). Bartkowski et al. outlined a series of strategies for doctoral students to achieve the objective of publishing in academic journals and addressed the role of academic mentors in fostering their students' research productivity (Bartkowski, 2015: 99–115). Maringe et al. examined the experiences of international doctoral students in their academic writing by utilizing Harré and van Lagenhove, 1999 Positioning theory and Goffman's theory of Stigma (Maringe et al., 2015: 609–626)

There were 9 articles about doctoral writing in the year of 2016, the authorial voice or author identity was the big concern in the research field (Chiu, 2016: 48–59; Thompson, 2016: 139–157; Chang, 2016a: 49–79; Chang, 2016b: 175–192; Eastman, 2016: 355–372). Thompson explored how three doctoral students of ESOL used personal and impersonal forms of self-representation and evaluative stance to construct authorial voices in the introduction sections of their written PhD Confirmation Reports. Chang rendered explicit linguistic resources for stance-taking and engaged ESOL doctoral students in exploring stance expressions in published research. Publication pressure on doctoral students or challenge has still brought out some academic discussion (Li, 2016: 545–558; Habibie and Hyland, 2019). Li suggested that the focus on “publishing SCI papers or no degree” should be shifted and the EAP-qualified language training should be undertaken. What's more, analysis of the feedback could provide useful ways for doctoral students to acquire a higher level language awareness (Stracke, 2016: 122–138) and also relieve their pressure of doctoral writing. When it came to the recent two years, the related research appeared to be more methodological and to be conducted from various dimensions (Inouye, 2019: 1–31; Ma, 2019: 207–222; Lei and Hu, 2019: 62–74; Danvers, 2019: 32–46; Tusting, 2018: 401–422; Odena, 2017: 572–590; Burford, 2017: 17–32; Levchenko, 2017: 28–40; Okuda, 2018: 391–413; Negretti, 2018:

12–31; Lam et al., 2019: 111–128).

3.4. What is possibly unsaid in the literature

To summarize, the findings in the literature confirm that a wide coverage of topics has been investigated among the existing research, and the methodologies adopted by the researchers range from that within the linguistic field to interdisciplinary fields. Resources collected for the research or analysis of doctoral writing have been more diversified during the ten years. Evidently, the existing studies make great contribution to the nature of doctoral writing. Nevertheless, the future studies could have been improved by shifting away from the focus on the applicability to the focus on the theoretical exploration. The fruits of Cognitive Linguistics and Construction Grammar during these decades may bring some insights into the research of doctoral writing, for example, the Event-domain Cognitive Model could help get close to the nature of doctoral writing by mapping the process of doctoral writing onto the domain of writing event. The conception of construe in cognitive linguistics may better explain the stance or authorial identity or voice in doctoral writing. Construction Grammar has developed greatly since 1970s and provided more insightful ideas into the nature of language. One of the tenets of construction grammar is to assume that construct is the fundamental unit of language and construct is a pair of form and meaning. What if we hypothesize the entire text of doctoral writing as a construct? What could we discovery about the process of doctoral writing based on the concept of the construct? In response to the perceived gap or deficit of the existing studies, we might enhance the research in the field of doctoral writing by virtue of the most updating development of linguistics and other disciplines.

4. Conclusion and future research

Although this review is aimed to give a systematic analysis of the research on doctoral writing, it has still an obvious limitation which should be overcome by future research. Because the review has been restricted to articles written in English, some relevant studies published in other languages hadn't been included, for example, articles in Chinese from *cnki.net*. Likewise, the review hasn't included books and conference papers, and only the literature of peer-reviewed journals has been collected in this review, so some other valuable research on doctoral writing were not encompassed. Besides, some relevant English-language articles could be possibly filtered out by the search term employed in this study, and the single search database of *Scopus* could not get all the relevant literature included. Because the review focuses on the research which should be primarily about the doctoral students and their writings, some relevant discussions about doctoral writing could possibly be neglected.

It has been noted that the Ph.D student quality has substantially dropped (Strokova, 2018). Knowing what may increase the quality of PhD students will enable to improve upon current pedagogical practices. The pedagogical practices should be aimed to build up doctoral students' confidence in writing since confident writing for research or publication and overcoming obstacles of writing are crucial to step into the academic circle. Research about how to improve doctoral writing for publication should be deeply explored in the future. Doctoral students will become novice writers or junior scholars after they gain their Ph.D degree, and as newly initiated academics, they do need supports to overcome the pressures of research and publication. Scholarly publication on top journals or by top publishers definitely brings the full sense of achievements to the novice

scholars. It's a really huge and complex task or process for doctoral students or newly scholars to get the research published, and the process involves very complicated factors if we view from various perspectives, for example, perspectives on scholarly publication itself, perspectives of authors, perspectives of mentors, perspective assessors (Habibie & Hyland 2019). Also, Tonks and Williams identified seven key areas in doctoral research: (1) quality of scientific writing, (2) general presentation of thesis, (3) statistics /data analysis, (4) understanding / critical appraisal, (5) experimental design, (6) English language and (7) supervision (Tonks A J & Williams, 2018). The research of academic writing of doctoral students or young scholars may be only just starting. Some questions still remained further exploration. For example, the allocation of attention while novice scholars do their research, is it more effective to focus on one specific research topic in years till the desirable outcome would be eventually achieved? Or is it more practical to keep relatively wide concerns on several research topics in case they would get bored? The research of development of expert scholars from a newly to a senior scholar may be very helpful for the starter scholars if the research would be conducted from a longitudinal perspective based on a bit large samples. As with the empirical research and theoretical exploration, the existing literature in the field of doctoral writing paved way to the future research, but there are still some topics waiting to expose.

Conflict of interest

No conflict of interest was reported by the author.

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