

Publishing and learning writing for publication in English: Perspectives of NNES PhD students in science

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Abstract

Publication in international journals has become a prerequisite to PhD graduation. This study thus provides a framework for understanding the learning of writing skills and publishing practices of nonnative English-speaking PhD students by investigating their perceptions of publishing and learning to write for publication. Findings show that these students regard themselves as disadvantaged due to their limited proficiency in English. However, many of them are not motivated to remedy the situation due to (1) their opinion that English plays only a secondary role in scientific research, (2) their lack of confidence in the writing curricula, and (3) their perspectives on the imbalanced power relations between them and their advisers. This framework offers an important insight: The nonnative English-speaking PhD students' disinclination to learn to write for publication is influenced by many factors other than perceived language incompetence. To empower and motivate prospective NNES scholars, the study offers several suggestions to journal gatekeepers, EAP professionals, and academic advisers.

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1. Introduction

Since English is the dominant medium of international academic journals and publication in journals a main criterion of scholars' academic achievement, researchers have investigated the challenges faced by NNES (nonnative English-speaking) scholars in peripheral countries, from different facets (e.g., Braine, 2005; Salager-Meyer, 2008).¹ The first facet relates to the written products and publication outcomes. Analyzing the textual similarities and differences between articles written by NES (native English-speaking) and NNES scholars, these studies suggest that variation (if any) may result from cultural preferences or the textbooks from which NNES writers have learned (Cmejrková & Daneš, 1997; McEnery & Kifle, 2002; Melander, Swales, & Fredrickson, 1997; Yakhontova, 2002). However, some disparities in writing might be regarded as the NNES scholars' language deficiency, causing them to fall short of the reviewers' expectations (Curry & Lillis, 2004). Studies which investigate the publication rate of

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¹ Kachru (1985) categorizes countries into three circles in terms of the use of English: the inner circle (e.g., U.S.), the outer circle (e.g., Singapore), and the expanding circle (e.g., Taiwan). Based on Kachru's categories, I define the countries in the outer circle and the expanding circle as "the periphery" and refer to the countries in the inner circle as "the center."

countries show a disproportionately higher contribution from central countries compared to that of peripheral countries (Benfield & Howard, 2000; King, 2004; Link, 1998). The reasons for the disproportion, as Man, Weinkauff, Tsang, and Sin (2004) suggest, are English proficiency and national research spending, which are significantly correlated with journal publication rate. In other words, not only the lack of English ability but also nonlanguage-related problems can hinder NNES scholars' success in publication (Canagarajah, 1996, 2002).

Other studies exploring the process of writing for publication specifically examine how NNES scholars have coped with challenges and how different professionals have revised the papers for them (Burrough-Boenisch, 2003; Flowerdew, 2000; Gosden, 1995; Li, 2007; Lillis & Curry, 2006). The results reveal that, to overcome difficulties in writing, NNES scholars often resort to published texts and the help of professionals, such as disciplinary or language experts. In addition to journal gatekeepers, these experts seem to play a significant role in shaping NNES manuscripts.

Still other studies seek to understand NNES scholars' publishing practices from the perspective of the participants involved in the publishing process. On behalf of journal gatekeepers, Mišak, Marušić, and Marušić (2005) identify a variety of language problems commonly found in NNES manuscripts and offer suggestions to mitigate the problems. Similarly, most of the journal editors in Flowerdew (2001) show understanding and sympathy for the challenges faced by NNES scholars. Journal reviewers' comments and revisions are also examined by researchers. For example, Gosden (2001, 2003) analyzes both reviewers' comments and the corresponding replies of NNES authors, and suggests that NNES scholars should be taught to interpret and make appropriate correspondences. Benfield and Feak (2006) present the different effects of revisions made by language and disciplinary professionals.

On the other hand, some studies probe the perceptions of NNES scholars (Cho, 2004; Curry & Lillis, 2004; Flowerdew, 1999a, 1999b; Tardy, 2004). Research on this aspect reveals that NNES scholars regard English as the most important language for publication. Nonetheless, the scholars' lack of English proficiency subjects them to great pressure and contributes to their perception of being disadvantaged.

In general, previous literature has described how particularly demanding it is for peripheral NNES scholars to publish in English (see an exception, Wood, 2001). The challenges can be either discursive (language-related) or nondiscursive (nonlanguage-related) (Ferguson, 2007). The difficulty in meeting the standards of international journals tends to put NNES scholars at a disadvantage vis-à-vis their NES counterparts when they compete for publication space.

Inexperienced NNES scholars might find it even tougher to publish in English journals, as unfamiliarity with the language is compounded by their novice status. Research focusing on novice NNES scholars who are pursuing or have just finished their PhD degree has uncovered the challenges and problems they encounter throughout the publishing process (Casanave, 1998; Cho, 2004; Flowerdew, 2000; Li, 2002, 2006a, 2006b, 2007; Li & Flowerdew, 2007; Tardy, 2004). For example, Casanave (1998) shows that novice Japanese scholars face twofold pressure: On the one hand, they need to publish in English to gain recognition in the international community; on the other, they also have to publish in Japanese to establish local networks. Furthermore, when scrutinizing the publishing practices of NNES PhD students from China and Hong Kong, Li (2006a, 2006b, 2007) and Li and Flowerdew (2007) discover that, being unfamiliar with conventions of publication, these students tend to borrow textual structures from published articles, focus on "hot issues," and conform to the revisions made by professors and language professionals.

Other studies, drawing on interviews and questionnaires, ask NNES PhD students about their standpoints on journal publication; the students' replies somewhat confirm the results stated above (Cho, 2004; Li, 2002; Tardy, 2004). Almost all the participants refer to language problems as additional obstacles to publication, regardless of the contexts in which they are situated. However, NNES PhD students in the U.S. seem more confident than those in peripheral countries, mainly because of their close connection to center scholars (e.g., being able to co-author with an NES scholar) (Cho, 2004; Tardy, 2004). Unlike the NNES PhD students who have more access to NES scholars, the students in China admit that they lag in the English language, although they are generally confident about having their manuscripts published (Li, 2002). In sum, the interplay of the pressure of publishing in English, the perceived high standard of writing quality which seems difficult to meet, and the perceived disconnected position causes the NNES scholars to feel disadvantaged (Curry & Lillis, 2004; Flowerdew, 1999a, 1999b).

These studies have contributed to the knowledge of the additional challenges faced by NNES PhD students who seek publication; overlooked, however, is the direct impact of university curricula and advisers on these students' learning to write for publication. Although previous research examines the strategies applied by PhD students during the publishing process, it seldom looks into the writing curricula provided by universities. For instance, Li (2006a, 2006b, 2007) conducts a series of studies on the challenges encountered and the strategies used by Chinese PhD

students, yet she rarely discusses the writing courses offered by universities. The first thing that must be done is to check if the particular university does offer writing courses. If the students have taken the courses but still struggle, it would be important to examine the effectiveness of the courses. If the students have not taken them, it would be imperative to ascertain why not.

Advisers can also have a decisive effect on PhD students' publishing practices and academic performance, according to Swale's (2004) review of case studies on the experiences of PhD students in writing dissertations. Blakeslee (1997) uses Lave and Wenger's (1991) situated learning theory to suggest that the adviser-advisee relationship can hinder the students' learning of journal publication due to "the location and distribution of authority in practitioner/newcomer relationships, which may inhibit newcomers as they struggle to acquire and establish their own authority by making original contributions to their fields (p. 125)." To better equip prospective scholars with the abilities they need to participate fully in academia, the role of advisers needs to be understood. Nevertheless, very few studies have addressed this issue. The few studies that investigate the adviser-advisee relationship are mostly based in the U.S. (Krase, 2007). Further exploration in different contexts is needed to understand what influences the learning or publishing practices of NNES PhD students, especially those in peripheral countries (Braine, 2002).

The purpose of this study is, therefore, to investigate the perceptions of NNES PhD students as regards publishing and learning to write for publication in English. Particularly, a grounded theory approach is used to provide a comprehensive framework with which to gain an insight into the perceptions of Taiwanese science PhD students on their NNES status, the university writing curricula and impact of advisers, and the relationship between these perceptions and their learning to write for publication. Although the focus is on students, information from advisers is also obtained for verification and data triangulation. With a clear picture of how NNES PhD students position themselves in the global scientific community and the extent to which the university writing curricula and advisers help them learn to write for publication, EAP practitioners can empower the students by minimizing their limitations and accentuating their strengths.

2. Methodology

In the current study, a grounded theory approach is adopted as the research design. A grounded theory is defined as one that is generated through the process of data collection and analysis, in order to understand a phenomenon of actions or interactions (Creswell, 2007). The purpose of the grounded theory is to "generate theories that at least fit the immediate problem(s) being addressed as well as promising wider application" (Dey, 1999: 3). Since my intention here is to provide a general framework for the current learning and publishing practices of novice NNES scientists in Taiwan, a grounded theory approach that explains the phenomena with both width and depth would best fit the study.

2.1. Participants and sites

Eleven PhD/Post Doc students and three professors in scientific disciplines participated in this study (Table 1). They came from eight disciplines and ten academic institutions, and all had experience in writing or advising students on writing conference papers and journal articles. Although my initial intention was to recruit an equal number of males and females, it was difficult to recruit females because relatively few studied in scientific disciplines. Therefore, the disproportion of male and female participants might roughly reflect the proportion of males and females studying in scientific disciplines in Taiwan, if at all.

2.2. Data collection

Data were obtained from their responses to interviews, my observations during the interviews, and my reflective notes.² All participants were interviewed once; the duration ranged from 30 minutes to one hour, depending on their availability for the interview. Whenever there were unclear issues, clarification was made through e-mail. The interview was semi-structured and composed of questions adapted from Flowerdew (1999b) and Cho (2004), allowing

² Quotations from my participants are identified by the source. For example, (Interview: 122, 124) means that the quote is taken from lines 122 and 124 in the interview transcript. My own observation and reflective notes are incorporated into the themes, so there is no explicit identification unless some notes are to be emphasized.

Table 1
Demographic information for participants.

Participants ^a	Gender	Disciplines	First-authored journal articles ^b	Occupation	Educational context
Hank	Male	Photonics	1~2	PhD student	Only in Taiwan
Charlie	Male	Photonics	1	PhD student	Only in Taiwan
Chuck	Male	Biophotonics	2~3	PhD student	Only in Taiwan
York	Male	Biophotonics	1~2	PhD student	Only in Taiwan
Murray	Male	Physics	3	Post Doc	PhD and Post Doc in the U.S.
Yuan	Male	Physics	4~5	Post Doc	Only in Taiwan
Frank	Male	Physics	2+	Associate Research Fellow	PhD in the U.S., Post Doc in France
Leon	Male	Physics	n/a	Assistant Professor	PhD in Germany
Wayne	Male	Electronics Engineering	3	Engineer (Just graduated from PhD)	Only in Taiwan
Kevin	Male	Applied Mechanics	1	M.S. (Just graduated)	Only in Taiwan
Derek	Male	Material Science	15~16	Post Doc	Only in Taiwan
Chris	Male	Material Science	4	PhD student	Only in Taiwan
Yu	Male	Computer science	6+	Professor	PhD in the U.S.
Lynn	Female	Industrial Engineering	1	PhD student	Only in Taiwan

^a All the names are pseudonym.

^b Only first-authored articles were counted. Besides, the information was obtained from the participants. When they did not provide the information, I searched for their profiles on the websites of their affiliated institutions. Because the websites might not show the latest record, I put a plus sign behind it to indicate there might be more articles.

the participants to answer my questions and address other unexpected but important concerns. Most of the interview questions were open-ended, such as “Could you describe your first publishing experience?” or “What suggestions, if any, do you want to give to future PhD students? (See Appendix)” All the interviews were conducted in Chinese, audio-taped and transcribed. Because the participants used their first language, they seemed comfortable and expressed their opinions accurately. Moreover, because the participants and I shared a common language and cultural background, I was able to catch the nuances of their words and the hidden meanings between the lines.

2.3. Data analysis

The data were coded according to the guidelines in [Strauss and Corbin \(1998\)](#) and [Dey \(1999\)](#), and were analyzed recursively. The process took place “through open, axial, and selective coding to the selection of a core category around which to organize the analysis” ([Dey, 1999: 95](#)). First, I closely examined the data line by line and categorized a number of salient phenomena. At this stage, categories such as “attitudes toward writing courses” had emerged. Second, I tried to connect these categories in terms of conditions, actions/interactions, and consequences. For example, the participants’ attitudes might have been the reason that they did not take the writing courses; their diverse attitudes could be attributed to their individual publishing and learning experiences. Finally, I chose a central theme that was stable enough to be recurrent and complex enough to allow for variations and theoretical implications. I constantly went back to the data to validate the established categories, as well as try out other possibilities for creating new categories or new relationships between categories. Finally, the central theme emerged: The students lacked the motivation for learning to write in English even though they felt disadvantaged due to language problems.

To further validate my coding, I asked the participants for member-checking ([Creswell, 2007](#)). My initial analysis was sent to five randomly chosen participants, who confirmed most of the themes and offered suggestions. Accordingly, a minor revision was undertaken based on their responses.

2.4. Theoretical saturation

[Strauss and Corbin \(1998\)](#) defined the categories as saturated when no more new information had been discovered, when the categories had been developed thoroughly, and when their relationships had been validated. In spite of the limited number of participants, I found that my data and the established categories qualified for the criteria of theoretical saturation. Although new information could emerge with more participants, the responses of the homogeneous group showed such a high degree of similarity that the occurrence of great variation was unlikely.

3. The cultural context of the participants

The participants of the study had several shared characteristics, which could be illustrated in terms of the four cultural dimensions proposed by Flowerdew and Miller (1995).³ On the dimension of ethnic and local culture, I discovered that the students often showed deference to their advisers, and the teachers perceived their role as akin to a “father,” who took care not only of their students’ academic achievement but also of their personal life. Besides, while the universities required a minimum number of journal publications for graduation, it was often the advisers who decided when the students could graduate. In other words, if their advisers so required it, the students would have to publish more articles to graduate, even if they had already met the graduation criteria. As for the target journals, the universities stipulated that students submit their work to SCI (Science Citation Index) or EI (Engineering Index) journals, which had higher impact factors—a scale that helped calculate the scholars’ achievement in the academic culture (Dong, Loh, & Mondry, 2005).

In terms of the scientific disciplinary culture, two phenomena are worth mentioning. First, all of the participants worked closely with a research team and conducted research in a laboratory, where they spent most of their time. Second, the research tradition that required evidence for claims seemed to influence their responses. Most of the participants appeared cautious when answering my interview questions, often responding with “I only know what happens in my field” or “This is my own opinion, but I don’t have any evidence.” Due to their prudent attitudes, it became particularly remarkable that almost all the participants had similar responses regarding their perceptions of publishing and learning to write for publication.

4. Publishing and learning to write for publication

The Taiwanese PhD students viewed English as a lingua franca and necessary tool for scientific communication. However, they felt that, unlike their NES counterparts, their lack of language proficiency placed them at a disadvantage—a problem that was often commented on by journal gatekeepers. Nevertheless, the situation did not impel them to learn or improve their English writing skills. The lack of motivation appeared to correspond to their attitudes toward the role of English in science, the writing curricula, and their advisers. In the following sections, I illuminated: (1) how the students viewed themselves as NNES writers, (2) their perspectives on the role of English in science, (3) the effects of writing courses, and (4) the impact of the adviser in relation to their lack of enthusiasm about learning research writing.

4.1. Publishing in English as NNES writers

All the students felt they were at a disadvantage compared to their NES counterparts when writing in English, and the negative perceptions came not only from their awareness of their nonnative speaker status but also from reviewers’ unfavorable comments on the language.

All the students felt disadvantaged because “English was not their first language” and they believed they could never achieve native-level proficiency. For example, when I asked Hank whether Taiwanese students could get on equal footing with American students, he smiled and answered, “Of course not! Because English is their first language, they are surely at an advantage (Interview: 122, 124).” The other participants had similar opinions, saying they not only read and wrote much more slowly in English but also made far more grammatical or stylistic mistakes than NES students.

The PhD students’ perceptions of disadvantage also seemed to be induced by reviewers’ comments. Six out of 11 students received “criticism” on language from reviewers, as Derek put it. He told me, “Even if they accept the article, they still criticize your English (Interview: 83).” The criticism involved various comments such as “poor English,” “not understandable,” or “consult with native speakers.” York told me that he had to send his manuscripts to an editing company (an editing business usually owned by NES speakers) because reviewers almost always required him to do so. Similarly, Wayne complained that reviewers’ comments helped the NES speakers “earn”

³ Flowerdew and Miller (1995) develop a cultural framework for analyzing L2 lectures. It includes four dimensions: ethnic culture, local culture, academic culture, and disciplinary culture. Although my study focuses on writing for publication instead of lectures, I have found it equally useful to provide the cultural context of the study based on their cultural dimensions.

a fortune from NNES scholars. He cited the comments he received from one reviewer as further proof of his disadvantaged status:

The reviewer rejected me intentionally, because the reviewer listed more than 90 questions. How absurd...The reviewer criticized that this sentence was problematic and that sentence was problematic, but the sentences had the same grammatical error. The reviewer could have simply mentioned this error once, since that was only about grammar...I knew that my English was poor. I could revise it; there was no need for the reviewer to make such a long list. (Interview: 390–394)

On the other hand, the five students who had not received comments on language attributed the effort to the manuscript “shapers” (Burrough-Boenisch, 2003). Charlie and Kevin both believed that they received no criticism on language due to the help of their advisers. In addition, Lynn and Chuck mentioned that many PhD students would send their articles to editing companies even though the editors sometimes misinterpreted and distorted the original meanings. In other words, when there were no negative comments, it was the advisers and the editors who had remedied their language problems.

Again, their statements confirm that a limited command of the language leads to NNES scholars’ perceptions of being disadvantaged (Curry & Lillis, 2004; Flowerdew, 1999a, 1999b; Li, 2002). However, it should be noted that these NNES students do not mean that their language problems would bring about the rejection of manuscripts, which Flowerdew (2001) tries to argue against. What they are saying is that their language would often be criticized regardless of reviewers’ decisions. They feel disadvantaged because even when the manuscript is comprehensible (since the manuscript is accepted) they still receive criticism on language or are requested to “consult with native English speakers.”

4.2. Learning to write for publication from University Curricula

Only three out of eight students reported that they had enrolled in courses offered by their universities. The reason seemed that many of the PhD students considered laboratory experiments much more important than learning writing skills—a perception that was influenced by their attitudes toward the role of English in scientific publication and the writing courses.

4.2.1. The role of English in scientific publication

Six of the students agreed that English played only a secondary role in scientific publication. Murray quoted a saying in his academic field: “No matter whether your English is excellent or horrible, good physics is good physics.” (Interview: 190–191) Moreover, Wayne told me, “The key point is your content. As long as your key content is emphasized, your research would be appreciated.” (Interview: 141–142) Therefore, obtaining good data was much more important to them than writing good English. As Hank suggested, “...Doing experiments is the main theme in PhD education...No data, no writing.” (Interview: 337–338, 342)

The other five students held that good English writing skills were as significant as experimental data. They believed that experimental data could only be presented to the international scientific community if written in English, and that language problems might have a negative impact on journal publication. Yuan told me that one of his articles was rejected by one reviewer, whose statement about his results was totally wrong. Reflecting on this experience, Yuan told me, “Maybe, from the beginning, he/she thought [my] English was poor, so he/she didn’t want to read it at all.” (Interview: 86)

The students who gave English a secondary role to scientific research seemed more enthusiastic about obtaining good data than learning to write in the language, even though they acknowledged their writing problems. However, some of the students who admitted the importance of English behaved inconsistently with their perceptions. For example, Kevin mentioned that his decision to take writing courses would depend on the time left after conducting experiments. When asked if he had taken the extra effort to learn English writing, Charlie confessed that he did nothing to improve it during his spare time.

4.2.2. Attitudes toward writing courses

The students had various attitudes toward the writing courses, depending on their learning and publishing experiences. Two of the three students who had taken English courses found them ineffective. In his master's program, York had enrolled in a course on how to write abstracts. He told me that the course was not helpful for him because at that time, he had had no research writing experience nor had he decided if he should pursue his PhD. Charlie took a course on research writing during his PhD, but he did not find it effective because the teacher had overly emphasized grammar. He told me that he did not need a course to learn what he already knew.

Students who had not taken writing courses could be further divided into two groups. The first group, consisting of four students, did not take any writing courses for either of two following reasons: the courses had not yet been available or they had already had enough publishing experience. They all agreed, however, that taking a course on research writing would be useful. Nevertheless, Derek doubted whether many students would bother with a course that required a tremendous amount of time.

The second group did not take writing courses for varied reasons. Murray and Kevin doubted the courses would be effective if the instructors had scant knowledge of science; and Chuck said he preferred to have his articles edited instead because it would be more "effective." Many of the students cited the need to prioritize the experiments, as the work load in labs and the study load of the academic courses were both heavy. Hank, for one, told me he did not take the English writing course because the study load was "too heavy." It seemed that many students spent most of their time and energy on experiments, and had little to spare for the writing courses.

The students rarely take pains to improve their English writing probably due to their perception that the quality of data outweighs the manner of presentation. In addition, unsuccessful learning experiences and doubts about the effectiveness of the writing courses further discourage the students from squeezing in time and effort for the courses. Thus, they can only rely on their advisers for publication.

4.3. Learning to write for publication from advisers

As mentioned above, advisers had a great impact on their students' publishing practices; their attitudes determined their students' success in journal publication, as well as their date of graduation. Intimidated by the dominance exerted by their advisers in decision-making and badly lacking in writing skills, the students' autonomy was gradually eroded until they lost ownership of their manuscripts. Without a sense of ownership, they consequently lost the motivation to improve writing skills.

4.3.1. Adviser-advisee relationship

The laboratory where the students did their research belonged to their advisers, and to some extent, they helped advance their advisers' research. Usually, in return for their contribution to the research, they received a certain amount of scholarship, depending on their advisers' budgets. As a result, the adviser-advisee relationship was akin to that of an employer-employee relationship, as the equipment and funds that students used were supplied by their advisers. With this as the background, it was not difficult to understand why almost all the students called their teachers "boss." In addition, even though the students did their own research and wrote their manuscripts, they had to ask their advisers to approve the manuscripts since their advisers would always be the corresponding authors. As Chris described the "academic ethic" in his field:

It is impossible for you (a student) to submit a paper to journals on your own. If you do so, you will "break some rules." Because it is *you teacher* who provides you the resources you need for your research, whether or not you are going to publish your result has to, *ethically*, be approved by your teacher. (Interview: 144–146, emphasis my own)

In other words, when a research article was published, both the students and advisers would benefit from it since their names were on the list of contributors. The more research articles the students published, the sooner the advisers could be granted tenures.

In addition, the Chinese culture in Taiwan also emphasized students' deference to teachers. Professor Frank told me he considered his first attempts at revising manuscripts a failure because of students' total compliance:

Although most of the teachers want their students treat them as friends, most of the students are still unable to do so. As a result, when we try to discuss and revise a paper together, the only word that my students respond with is “yes, yes, and yes.” They still have to reread those revisions when they go home. (Interview: 103–105)

Several additional examples helped illustrate how the advisers’ powerful positions and attitudes could hinder their students’ participation in the academic community. Yuan recalled that his adviser once told him to “ignore” an e-mail from a foreign scholar, who had asked Yuan for help on some research problems. Yuan confessed that he should have replied to that e-mail instead of heeding his advisers’ instruction. Hank said that his adviser had refused a visit from a research team from China. Moreover, the students’ participation in international conferences depended on their advisers, who controlled the funding. Professor Frank told me he was undecided on whether or not to keep sending students to international conferences because students who lacked listening proficiency might not fully absorb what they heard in conferences.

The adviser’s powerful role in the adviser-advisee relationship is rather obvious, and for this reason, the students often find themselves unable to assume full control of and responsibility for their work. They thus lose the enthusiasm to learn and improve the research writing skills needed to polish their manuscripts.

4.3.2. *Perceptions of teacher power*

All the students and even some professors believed that the advisers’ attitudes could significantly influence their students’ publication. For example, Chuck told me that whenever he and his adviser differed in the way they explained a result, it would inevitably be his adviser’s version that would be used in the final draft because his adviser “insisted” on it. York had similar experiences, saying that it did not matter what he wrote in the drafts, since everything would eventually be “different” after being revised by his adviser. Furthermore, several students mentioned that it was not uncommon for advisers to ghostwrite several parts of or even whole manuscripts; Professor Leon confirmed the statement when he confessed to writing some difficult sections for his students. According to Professor Yu, there were worse cases than mere ghostwriting: Some advisers took over some parts of the manuscript and put themselves as the first authors even though the research was done by their students. The influence of the “boss” and its consequences were explained by Derek:

The attitude of the boss absolutely influences (how students submit journals). For example, in the past six years I finished eight research proposals...I set up and fixed the equipment and conducted the experiments. Suppose I (wrote 17 articles but) was only placed as the first author in three articles. Do you think I would have the energy to write more? If I could write optimally 25 articles, do you think I would write as many? (Interview: 203–205)

Further, Derek explained how the imbalance of power between advisers and students influenced student autonomy and the will to learn:

The PhD students in Taiwan have very low autonomy, as far as I am concerned...Why? Because since the boss always dogmatically controls everything, it means that the students under the boss have no power. No power means no responsibility...Power and responsibility are mutual, so when [the boss] deprives the students of power, they don’t have responsibilities any more...Because the boss makes all the decisions, the boss would take on that responsibility of failure. Then what do the students need to take on? All they do is to follow the boss, right? This is a serious problem. (Interview: 226–231)

It should be noted that a few students do feel they benefit from their advisers. My intention here is to underscore the potential consequences of the imbalance of power in the relationship between advisers and advisees, especially when students feel their advisers take over most of the responsibility in the process of publication. Because advisers hold the cultural and political privilege to decide the timeline of the students’ publications and graduation, and control the channels for interaction with international scholars, students are reluctant to confront them and ask for more responsibility in writing for publication. As a result, students do not feel the need to make additional efforts to master writing skills for publication; they believe their “bosses” would make every decision anyway. Therefore, rather than learning to write for publication, they prefer to spend their time and energy conducting experiments in the laboratories.

5. Discussion

Judging from the interviews, the participants feel disadvantaged even when their research is accepted. Such perception might largely be attributed to reviewers' negative comments on language. Unaware of the hardship that novice NNES scholars experience, reviewers in science tend to have low tolerance for the lack in language proficiency. Besides, the review process in most scientific journals is "anonymous" instead of "blinded" (Gosden, 2001).⁴ It is possible for novices to regard the negative comments as "bias" that places them at a disadvantage. Although the native/non-native dichotomy has been questioned (Brutt-Griffler & Samimy, 1999, 2001; Swales, 2004), NNES novices might still attribute the challenges of publication to the stereotype of "nonnative speaker" when finding themselves vulnerable in the process of review. Similarly, journal reviewers might unconsciously fall into the dichotomy that influences their judgments upon recognizing authors' nationality and language problems. With the myth of the standard of native proficiency, NNES scholars might always have "the nonnative English speaker inferiority complex" (Liu, 2004: 9). This sense of inferiority might also account for the phenomenon that NNES PhD students would rather spend most of their time conducting experiments than improve their writing skills. However, they need to be made aware that language is one of the criteria for publication, as *Applied Physics Letters* (2007) explicitly indicates that manuscripts can be rejected for language problems.⁵

The perceived imbalance of power distribution is another factor contributing to students' loss of autonomy and motivation for learning to write for publication. This result is in line with the findings of Aguinis, Nesler, Quigley, Lee, and Tedeschi (1996), who suggest that there is a strong and positive correlation between students' perceptions of their advisers' power and the students' compliance with the requests of the advisers. Because these NNES PhD students recognize their advisers' power and expertise, they tend to conform to their advisers' revisions (Li, 2006b). However, too much compliance might result in students' lack of a sense of responsibility for improving their writing skills as well as manuscripts.

University policies that require PhD students to publish a minimum number of English articles in SCI/EI journals prior to graduation may have been forged from good intentions. Published articles boost a school's prestige, help students learn publishing practices, and increase the exposure of both students and advisers in the international community. However, when advisers are too keen on pursuing their own careers, they may be so preoccupied with the results of publication that they overlook the need for the students to learn by being given more autonomy in the preparation of their manuscripts. Being both deferent to the advisers and cognizant of their relatively powerless positions, PhD students often leave most decisions to their advisers. Meanwhile, they fail to acknowledge the urgency and significance of learning to write for publication.

6. Implications

In the study, I provide a framework for understanding the learning and publishing practices of NNES PhD students. This framework shows that many intertwined factors are behind the PhD students' reluctance to learn to write for publication even though they feel disadvantaged as a result of insufficient writing skills. The framework is significant in that it provides a comprehensive picture of the struggles and difficulties perceived by these PhD students when writing for publication. Researchers who are interested in this line of research can develop this framework further by investigating other possible variables that might affect the students' motivation.

In terms of practical implications, several suggestions are offered to journal gatekeepers, EAP professionals, and disciplinary advisers. First, journal gatekeepers should provide supportive, not discouraging, feedback on language. They should carefully consider and choose their words so that NNES novices would not feel they are being "criticized" because of their lack of language proficiency. Moreover, when encountering a NNES scholar's manuscript that is comprehensible but unconventional, whether reviewers should still insist that the author conform to the writing

⁴ Gosden (2001) refers to the review process as "anonymous" if the reviewers know the authors' names, and as "blinded" if neither party knows the other. He also explains, "As is common practice in many scientific fields, referees would know the identities of the authors and their affiliations from the submitted manuscripts and covering letter (p. 7)."

⁵ The journal is one of the target journals of my participants. In the General Editorial Policies section, it states, "Manuscripts must be written in correct American English. This is the responsibility of the authors, not the editors. Papers that are judged to be below the standards for APL will be returned to the authors for rewriting and can be rejected for the language reason alone. Such problems may be avoided and publication expedited if the manuscript is edited by an English-speaking colleague or a professional editing service before the initial submission."

conventions rooted in English rhetoric, or whether they should allow more language variation needs further investigation (e.g., Mauranen, 2003, who calls for more corpora to regulate patterns of English as a lingua franca, as another variety in addition to the native English standard).

Second, EAP practitioners need to raise novice NNES scholars' critical awareness of the NES/NNES dichotomy (e.g. Brutt-Griffler & Samimy, 1999). NNES novices need to perceive their challenges along the axis of skills instead of "nativeness." They should also be taught to negotiate with journal gatekeepers if they find the comments unreasonable. Only when NNES PhD students are cognizant of the myth of this dichotomy and of the strategies for defending themselves can they feel empowered and confident in competing for publication in the international scientific community.

To improve their writing skills, NNES PhD students with limited proficiency would need to rely on the explicit instructions of teachers as mediators (Karpov, 2003). In response to their negative and doubtful attitudes towards courses and instructors, an effective curriculum should be carefully designed by both EAP practitioners and disciplinary professionals. A successful example of the collaboration of the two professional groups is provided by Cargill and O'Connor (2006), who organized a research writing workshop in China. More research is needed for developing effective curricula and for investigating the effectiveness of the existing writing courses.

With regard to the role of advisers, workshops or conferences should be provided to advisers to help them recognize students' perceptions of power distribution in the adviser-advisee relationship and offer more student-centered instructions to mediate learning. Meanwhile, advisers can lessen students' workload in laboratories and ask them to take research writing courses. With more responsibility for writing up research and more time for learning, NNES PhD students would feel empowered and more motivated to learn.

7. Conclusion

The study investigates the perceptions of NNES PhD students in scientific disciplines on publishing and learning to write for publication in English. Despite the perception of being disadvantaged because of reviewers' harsh comments on language, they take little action to remedy this situation. Many of the NNES PhD students not only consider English insignificant in scientific research, but also regard writing courses ineffective. Besides, they take little responsibility for writing publishable manuscripts because of the perceived power relationship between them and their advisers. However, this finding is based on a small number of participants in a single country. More studies, especially those from countries where publication is a PhD graduation requirement, are needed to validate this research by exploring the effects of the writing curricula and the adviser-advisee relationship on NNES PhD students' publishing practices.

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Appendix. Sample interview questions:

1. Can you describe your educational/working background?
2. Could you describe your first publishing experience?
3. Do you find any difficulties writing English articles? If yes, what are they?
4. How did you cope with these difficulties?
5. What kinds of comments do you usually receive from reviewers?
6. What are the comments about language, if any?
7. What do you think of the reviewers' comments?
8. Do you think Taiwan PhD students can have an equal footing with American PhD students in terms of journal publication? Why or Why not?
9. Do your university offer courses on research writing? Have you taken these courses?
10. Why did you choose to (not) take the courses?

11. How did you think of the courses?
12. If the university offered a research writing course, would you like it to be a required or elective course? Why?
13. What are your opinions of the effect of the adviser's attitude on students' publishing practices?
14. In what language do you prefer to publish and why?
15. What suggestions, if any, do you want to give to future PhD students?

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