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Teaching Second Language Vocabulary: the Role and Application of the AWL

Ge Yan*

The Hong Kong University of Science and Technology, Hongkong, 999077, China

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ABSTRACT

This paper focuses on the role and application of AWL in science-related subjects, namely the issue of whether or not students in science-related majors is advantaged or disadvantaged in using the Academic Word List (AWL) in their academic writing assignments as the imbalance of word frequency in AWL. Participants (n=18) are obliged to answer the Questionnaire. Furthermore, if needed, a brief interview would be arranged on some uncertain questions. Results show that learning and acquiring academic vocabulary would benefit participants in research articles, while AWL is inadequate for students in science-related disciplines in their academic writing. We claim that students in science-related majors may be disadvantaged than other majors' students in using Coxhead's Academic Word List, and a wordlist screened out from science-related corpus perhaps more suitable for ESP students. Meanwhile, AWL, as a role of reference, would aid language learning or acquisition.

1. Introduction

With the high demand of academic communication and publication, non-native English speakers (NNES), especially for those who want to achieve academic purpose, admitted that specialized vocabulary used in academic writing plays an irreplaceable role for them in their academic writing assignment. However, there exist big challenges for NNES to contribute vast academic reading experience to writing academic research paper in foreign language while their proficiency level of foreign language may be poor. Therefore, academic words seem the primary problem for NNES' foreign language acquisition from the perspective of academic purpose. For pedagogical purposes, academic vocabulary is regarded as one of

the four sub-area of vocabulary, which is high frequency words, academic vocabulary, technical vocabulary and low frequency words (Coxhead & Nation, 2001)^[1]. As a written academic corpus-based study, the Academic Word List which screened out 570 word families based on the corpus in four discipline areas- Arts, Commerce, Law and Science- with nearly 3500,000 running words has been regarded as a list with a fairly high-frequency and wide text coverage and distributions, which is seen as a crucial teaching instrument in ESP contexts.

Scholars have studied the role and application of the AWL for many years, especially on the positioning of the AWL whether a generality-oriented wordlist or a specificity-adapted wordlist. Coxhead (2000) indicated the different frequencies in arts, commerce, law and science texts, which are 9.3%, 12.0%, 9.4% and 9.1%

*Corresponding Author:

Ge Yan,

Correspondence address: The Hong Kong University of Science and Technology, Hongkong, 999077, China;

E-mail: 17854120943@163.com.

respectively, analyzing that commerce students gain slightly advantages. As Coxhead (2011) mentioned that the AWL is able to help EAP teachers in their classrooms for their students' vocabulary learning, while teachers are supposed to raise their awareness of specialized meaning in their subject area. Nevertheless, whether the AWL is suitable for English for Specific Purpose (ESP) courses as the AWL is list which mainly offers a general academic vocabulary rather than academic vocabulary in different specific disciplines. The study of using different corpora to study academic vocabulary applauded by Hyland and Tse (2007) that though the AWL provide guidelines for teaching purposes, we are supposed to put emphasis on the usage of the specific features in specific discourse in particular courses and vocabulary ought to be taught in considering the specific target context for students' need. In addition, Martinez et al. (2009) agreed the necessity of field-specific academic word list when it comes to agriculture science. Meanwhile, Zhang (2013) who do research for Information Engineering undergraduates recommended a special word categorization methodology to solve the dilemma about academic vocabulary of subject's specificity. Seeing the certain imbalance of the coverage of the science section in the AWL, Ward (2009) proposed a word list for foundation engineers with a low proficiency of English which could help them do academic reading and writing to all engineering disciplines. As for medicine disciplines, Chen (2007) accused that as for the unbalance in light of subject discipline, the AWL is far from represent the high-frequent academic words in medical research articles. And thereafter, it is in urgent need to establish a medical academic word list (MAWL) for ESP learners who have difficulties using proficient academic vocabulary in their medical research articles. Acknowledge that there is a relatively limited number of studies examining the role of application of the AWL for upper-intermediate to advanced language learners who are in their Mphil/PhD stages in the school of science, the present article on preliminary findings from a questionnaire-based research involving Putong Hua-speaking learners of English^[2].

2. Research Question

At two key comprehensive universities in Hong Kong and mainland China, the present research explored whether the AWL is suitable for ESP students in science-related majors, focusing on the perspective of the students, especially advanced ESP learners in their Mphil/Phd stages. For this purpose, the following research questions were formulated:

Is the AWL adequate for students in science-related

majors to be used in their academic writing?

Is the meaning of words in the AWL normally equal to the usage in their academic writing?

Do participants think acquiring academic vocabulary will help them write better in their academic assignment? Do participants think knowing the AWL will help them write better in their academic writing assignment?

Study was designed to answer questions. Regarding (1), if the AWL inadequate for students in their academic writing, the words in wordlist chosen from the AWL will seldom or never contained in their academic writing^[3]. I predict that participants would distinguish these words as they are regarded as advanced learners in their domains. However, these words cannot guarantee academic writing assignments in their domains, and the meanings of these words contained in the AWL may not in frequent use in their academic writing. Hyland and Tse (2007) argued that the meaning of words in the AWL would be differentiated when it comes to different research domain or subject area. That is to say, meanings covered in the AWL may not be the same as the meaning in participants' academic writing. As for (2), it is predicted that knowing and acquiring academic vocabulary underpins participants' academic writing while the AWL may not help them response or write academic assignments considering the relative limited coverage of words in the AWL in their domains^[4].

3. Methodology

3.1 Participants

The participants in this study were 18 Mphils/Phds in the research-oriented postgraduate programs in School of Science who had already published one or more than one academic paper and now are doing research either in Hong Kong University of Science and Technology (HKUST) or Harbin Institute of Technology (HIT). 8 of them were from Mathematics programs, 6 of them were from Physics programs (3 in physics and 3 in Nano Science & Technology), 4 of them were from Chemistry programs. Participants whose first language (L1) is Putong Hua had never gone to abroad for study or had previously been in an English-speaking country for more than two weeks before. Their proficiency level was upper-intermediate to advanced based on IELTS/TOEFL/ELPA proficiency test scores^[5].

3.2 Instruments

For collecting the data, research instrument here is a questionnaire contained one construct measured by 10 items, which was chiefly based on Coxhead (2000, 2011).

Participants were asked to response the Questionnaire by choosing the most appropriate option of each question in their own understanding and experiences. In Questionnaire, I chose 30 words from the AWL based on the criteria 10+n/ 20+n/ 30+n (n=sublist1-10, sublist 10=0)^[6]. In order to meet the demand of randomness, the words would be selected in positive sequence when it comes to the odd number's sublists, while even number in inverted order.

In addition, interview would be added if participants halt between two opinions for some distinctive questions in Questionnaire. Interview was used to obtain a more comprehensive insider view of their true opinion about the role and application of academic vocabulary in their domains. Participants who cannot participate in the face-to-face interview would have access to online interview and videos or transcripts would be stored as well. Most interviews would take place in Mandarin as it was easier for the them to express themselves in this language as English perhaps was used infrequently for some of the participants.

3.3 Procedure

Began with questionnaire, participants will be asked to fill the form in five minutes. After questionnaire, they will be obligated to interview if needed, which is related to their own experiences or understanding. During the interview, I will ask some related questions based on the questionnaire^[7].

3.4 Data Analysis

Interviews will be stored as video materials or transcripts. After transcribed, I will check the results according to the materials, and the results are subject to a thematic content analysis. The primary purpose is to analysis whether the AWL is a necessity for students in science-related majors rather than an ESP wordlist based on specific genres.

4. Results

Questionnaire illustrated that due to participants' proficiency level, most of participants in their stage haven't had problems in distinguishing the selected words. As I mentioned in Methodology part, words here are in random selection. Hence, participants in this study would not encounter the problem when they read their academic materials. Regarding research question (1), students in science-related majors may be disadvantaged considering the relatively limited coverage of academic vocabulary in science discipline. For nearly 88.9% participants contended that they did not often bump into

these 30 words in their domain, and 72.2% participants told at most 50% of these words that they would read in academic researchers in their domain, which provide further evidence to the claim that the coverage of word occurrence in the AWL exists a momentous inequality in different faculties (Chen, 2007)^[8]. Furthermore, I selected two words "globe" and "layer", which is widely used in arts, commerce and science, in these 30 words with utterly different technical term meaning hinged on different genres in disparate faculties. Data did not express obvious clues about the word "layer", but when it comes to the word "globe", approximately 83.3% participants choose the meaning offbeat from the general meaning in the AWL and in daily communication. That is to say, the lack of the familiarity of the AWL words with technical sense perhaps would bring about more difficulties for students studied in School of Science. Therefore, stood on the findings in Questionnaire, I conclude that the AWL would inadequate for students in science-related majors to be used in their academic writing, and the meaning of words in the AWL may not equal to the usage in their research papers. In light of research question (2), 100% participants in this study totally agreed that acquiring academic words play an indispensable part in their stage. Meanwhile, 77.7% participants supported that they would deliberately focus on and accumulate vocabulary those which are able to be used in their academic writing. Accordingly, I extol the indispensable assistance of acquiring academic words for students in upper-intermediate to advanced level to achieve their academic purpose. In view of the proficiency level of participants in this study that students who had already published one or more than more academic writing would be selected as our participants, I affirm that this result is reasonable for me to arrive at a conclusion. The last three questions in Questionnaire concentrate on the application of the AWL for students in science-related majors. As for the common use of these words in their research assignment, 50.0% participants insist a comparatively low frequency (being inferior to 30%) of these words using in their academic assignments, while other participants profess 50.0% to 80.0% usage of these words in their writing. In order to gain a better understanding of participants' thoughts, I interviewed that are these words only used less than 5 times in your writing or in high-frequent usage. 88% admitted that these words were not in common usage in their academic writing before, and they guessed that they won't use these words frequently in future. Considering the limited sample size of words and limited number of participants, we cannot observe an obvious result for whether the imbalance frequency of word occurrence would lead to imbalance

scientific payoffs in different disciplines. Notwithstanding, as Hyland and Tse (2007) challenged the effectiveness of the AWL in ESP courses and accentuated the significance of contextual environments for learning of academic vocabulary, I speculate words contained in the AWL enjoying high academic status, but students in science-related disciplines may at a disadvantage when it comes to the specific meaning and usage of words in different genres. Though participants applauded the importance of acquiring academic vocabulary, most of them deny that they would gain great profits for knowing the AWL because of the imbalance of distributions, coverage and frequency.

5. Conclusion

As the results from the answers of participants, this research reveals that due to the lowest frequency in the AWL, students in science-related majors may be disadvantaged than other majors' students. Therefore, they may not gain benefits in their academic writing from the AWL. As for the solution to this dilemma, Zhang (2013) proposed that combined with subject-oriented corpus, language teachers and learners are available to enhance awareness at micro-level of acquiring academic vocabulary for target linguistic features. Chen and Ge (2007) also applauded a wordlist which built on text's rhetoric and offered useful words to construct science argument. To sum up, a wordlist screened out from science-related corpus perhaps more suitable for ESP students.

Conclusions that can be drawn on the basis of this must be a tentative research, as this experimental study is limited in the sample size and the number of participants. This research only contains the Questionnaire as the main research method, as we could see former researches on the role and application of the AWL primarily used corpus-based method to illustrate their findings. In addition, the proficiency level of the learners was upper-intermediate to advanced, so they would not own large amount of problems about academic vocabulary than other proficiency levels. Therefore, future researches are supposed to testify whether the AWL would be beneficial to learners in contrasting proficiency levels in divergent faculties. As Coxhead (2011) mentioned that one of the use of AWL is for test. Hence, future researches have abilities to determining the appropriate role for AWL in EAP/ESP courses. That is to say, EAP/ESP students would at an advantage whether the AWL as a method of teaching or as a method of testing.

Regarding implications for pedagogy, Coxhead (2011) praised subject-specific vocabulary list using AWL as a base list and pedagogically oriented work using AWL as

a testing method. Meanwhile, Nation (2011) stated that the comprehensive use of AWL benefit from the resources within touch at your fingertips for AWL has already available in diverse range of formats for free. Our results suggest that AWL is an effective method for learners who want to achieve general academic purpose, which would appropriate for EAP students whose proficiency level are upper- elementary to low-intermediate, since their academic purpose chiefly around reading research articles rather than academic writing. In consideration of learners who want to achieve academic purpose like academic writing assignments and research articles, I congratulate a genre-based wordlist or a discipline-based wordlist. For ESP teachers, it is worthwhile to cater for students' need of major-based English, and the AWL, as a role of reference, would aid language learning or acquisition.

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Appendix

Questionnaire

Wordlist

constitute/ establish/ indicate reside/ perceive/ impact
 core/ exclude/ layer
 professional/ occupy/ implement draft/ facilitate/
 mental

neutral/ initiate/ fee differentiate/ globe/ isolate
predominate/ infrastructures/ drama odd/ enormous/
adjacent

1. Do you KNOW these 30 words?
 - A.0
 - B.1-10
 - C.11-20
 - D.21-30
2. Do you OFTEN read these words in your domain?
 - A. 80%-100%
 - B. 70%-80%
 - C. 50%-70%
 - D. 30%-50%
 - E. 0-30%
3. Do you think you can use these words accurately in your writing work?
 - A. always
 - B. usually
 - C. sometimes
 - D. seldom
 - E. never
4. Do you think acquiring some academic words are important for your academic writing in your major?
 - A. Yes
 - B. No
 - C. I am not sure.
5. Will you deliberately focus on and accumulate vocabulary that can be used in academic writing in your domain?
 - A. always
 - B. usually
 - C. sometimes
 - D. seldom

6. What is the frequent usage of the meaning of “layer” in your domain?

- A. thickness of some material laid on or spread over a surface.
- B. The protocol(s) operating at a particular level within a protocol suite.
- C. I don't know

7. What is the frequent usage of the meaning of “globe” in your domain?

- A. Relating to the whole world; worldwide.
- B. Pertaining to an entire document, file, or program rather than to a restricted segment of it.

8. Do you ever use these words (30 words) in your academic writing?

- A. 100% (=30)
- B. 80% (≥ 24)
- C. 50% (≥ 15)
- D. 30% (≥ 9) E. 0-29% (< 9)

9. Are these words (30 words) necessary in your academic writing? A. 80%-100%

- B. 70%-80%
- C. 50%-70%
- D. 30%-50%
- E. 0-30%

10. After studying these words (30 words), do you think it would help you a lot in your academic writing?

- A. 80%-100%
- B. 70%-80%
- C. 50%-70%
- D. 30%-50%
- E. 0-30%