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The Development of Academic Vocabulary in International Foundation Students' Assessed Academic Writing

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ABSTRACT

Despite the extensive research into academic vocabulary in university student writing, little is known about academic vocabulary in international foundation-level students' assessed academic writing. Considering that academic vocabulary is regarded as a key element of academic writing style and that written assignment is one of the main forms of assessment in university contexts, this is an important omission. This study addresses the gap by employing a corpus-based approach to investigate the development of academic vocabulary in assessed academic writing produced by international students ($N = 193$) in a foundation (gateway) program over an academic year in the context of a British university based in England and its overseas campuses in the United Arab Emirates and Mauritius. The findings show an increase in the usage of academic vocabulary over the course of the foundation program and highlight the impact of the assignment topic and brief.

Keywords: academic vocabulary, academic vocabulary development, academic writing, International Foundation Programme, international foundation students

Due to internalization, the current U.K. higher education climate is characterized by a heterogeneous student body constituting both local (i.e., British) as well as international (i.e., non-United Kingdom) students. In the academic year 2018–2019, for instance, there were 485,645 international students in U.K. higher

education institutions, representing approximately 20% of the total student population (Higher Education Statistics Agency [HESA], n.d.). This diversity in the social, ethnic, and linguistic composition of the student body inevitably leads to varying levels of preparedness for academic study in terms of the students' academic literacy skills, referring to a range of abilities that students must acquire to be able to communicate competently in academic settings (Wingate, 2018). Out of these literacy skills, it is academic writing that "has been at the top of the language agenda in expanding higher education contexts" (Lillis & Scott, 2007, p. 9). The reason for this is that writing is one of the main modes of demonstrating knowledge and understanding in university contexts, whereby written assignments constitute one of the principal forms of assessment. Writing is hence regarded as a "high stakes" activity in university education as students need to demonstrate the required standard of academic writing if they are to succeed in their university studies (Flowerdew, 2016; Lillis & Scott, 2007).

The importance of academic writing in turn emphasizes the vital role of academic vocabulary, referring to words frequently used in a wide range of texts across various academic disciplines (Baumann & Graves, 2010; Coxhead, 2000; Nation, 2001; Townsend & Kiernan, 2015). As these vocabulary items account for a considerable number of words in academic texts, this type of vocabulary represents high-frequency words in academic settings (Nation, 2001), which is hence important for both comprehension and production of academic texts (Coxhead & Byrd, 2007). This makes academic vocabulary a vital learning goal for university students who need to learn to follow various academic conventions, including the usage of appropriate vocabulary, in order to respond to the demands placed upon them by their academic contexts. Furthermore, as academic vocabulary is regarded as a key element of academic writing style (Hyland & Tse, 2007), insufficient knowledge of these vocabulary items has been associated with a lack of academic success (Coxhead, 2000; Gardner & Davies, 2014; Townsend & Kiernan, 2015). Therefore, novice students who often possess very little or no prior experience with the type of academic language required in university settings need to acquire academic vocabulary and deploy these vocabulary items in their language production.

However, due to the diversity in the student population at U.K. universities, students' preparedness for the literacy requirements of university varies considerably (Tribble & Wingate, 2013), with academic writing reported as one of the challenges that international students at various levels of study often face at English-medium universities (e.g., Campell & Li, 2008; Coates & Dickinson, 2012; Eldaba & Isbell, 2018; Elturki et al., 2019; Martirosyan et al., 2015; Park, 2016; Ravichandran et al., 2017; Singh, 2015; Wu & Hammon, 2011). The issue of preparedness for academic study is addressed by foundation-level (i.e., pathway) courses in the United Kingdom, including International Foundation Programmes (IFPs), which aim to prepare international students for undergraduate study by helping them develop the necessary English language and academic skills, such as academic writing. IFPs can thus be seen as playing an important role in students' academic achievement at a tertiary level of education. Despite the importance of foundation-level provision and the vital role of

academic vocabulary in academic writing, there is little knowledge about the usage of academic vocabulary in assessed academic writing produced by international foundation-level students at U.K. universities.

LITERATURE REVIEW

Academic vocabulary research has been assisted by academic word lists containing the most frequently occurring vocabulary in academic texts. Recent decades have seen the creation of several compilations of academic vocabulary, such as the Academic Word List (AWL; Coxhead, 2000), which has replaced the University Word List (UWL; Xue & Nation, 1984). Other compilations include the Academic Keyword List (AKL; Paquot, 2010), the New Academic Word List (NAWL, Browne et al., 2013), or the new Academic Vocabulary List (AVL; Gardner & Davies, 2014). Despite their common goal of providing a list of the most frequently occurring academic vocabulary in a variety of texts across disciplines, significant differences exist between them. These can be found primarily in their size, age, organizing principle, and methodologies used for their compilation, meaning that each of the word lists possesses several potential limitations, reviewed by Therova (2020).

Out of the various available word lists, the vast majority of studies into academic vocabulary in learner writing have drawn on Coxhead's (2000) AWL, comprising 570 academic word families identified on the basis of approximately 3.5 million words representing four disciplines (science, arts, commerce, and law) with fewer studies utilizing Gardner and Davies's (2014) AVL, containing 3,015 academic lemmas extracted from a corpus containing 120 million words of academic texts comprising nine academic disciplines (humanities; social sciences; history; education; law and political science; science and technology; medicine and health; business and finance; and philosophy, psychology, and religion). These studies used the AWL and AVL for exploration of academic vocabulary in learner writing in various contexts, such as secondary English learners (Cons, 2012), advanced college-bound learners of English (Brun-Mercer & Zimmerman, 2015), fifth-grade students (Olinghouse & Wilson, 2013), or in university settings (e.g., Coxhead, 2012; Csomay & Prades, 2018; Durrant, 2016; Knoch et al., 2014, 2015; Masrai & Milton, 2017, 2018; Nadarajan, 2011; Storch, 2009; Storch & Tapper, 2009; Xudong et al., 2010).

Some studies conducted in university contexts have investigated academic vocabulary from a longitudinal perspective. Storch and Tapper's (2009) study, for example, measured academic vocabulary (based on the AWL) at two times (Week 1 and Week 10) in the context of an English for Academic Purposes (EAP) course for postgraduate international students at an Australian university. Their study reported an increase in the usage of academic vocabulary by Week 10 of the course and partially attributed this increase to the students' exposure to academic texts and to the EAP course that the participants attended, which focused on academic vocabulary in seminars, in teaching materials, and in the feedback that students received on their writing. Similarly, the changes in the deployment of AWL items in international university students' writing at an Australian

university were investigated in Storch's (2009) study over a comparable period (12 weeks). Contrary to Storch and Tapper's (2009) findings, Storch (2009) reported no change in the percentage of the academic vocabulary deployed in the students' writing after 12 weeks and speculated that the period of 12 weeks may be too short for students to demonstrate improvement in the usage of academic vocabulary. Xudong et al. (2010) also explored changes in the usage of AWL items over a similar period in international graduate students' writing at a university in Singapore and reported a slight increase in the deployment of academic vocabulary, which was not found to be statistically significant, however.

Academic vocabulary research over a longer period has been reported by Knoch et al. (2014), who explored international students' writing development at an Australian university over one year. Their study showed no change in the percentage of AWL items after one year. This study formed part of their larger study (Knoch et al., 2015), carried out over a three-year degree study at the same Australian university, which also reported no significant changes in the usage of AWL items. Knoch et al. (2014) hypothesized that the lack of improvement in the usage of academic vocabulary over an academic year could be attributed to the fact that the students did not have an opportunity to write about a discipline-related topic, which may have resulted in the higher usage of AWL items.

Although these longitudinal studies focused on academic vocabulary in international students' writing, little is known about the usage of academic vocabulary in international foundation-level students' writing. This highlights the gap in the current body of academic vocabulary research, which lies in the development of academic vocabulary in international foundation students' assessed academic writing. The present study, therefore, seeks to address this important omission by answering the following research questions:

1. Does international foundation students' usage of academic vocabulary in their assessed academic writing develop over the duration of the foundation program?

2. What impacts the development of academic vocabulary in international foundation students' assessed academic writing?

It is noteworthy that definitions of what constitutes "development" in writing research vary and "have been in a state of flux over the past fifty years" (Camp, 2012, p. 93). Writing development can hence refer to various phenomena with contemporary applications of developmental theory leading to "some shared assumptions about growth that can guide our efforts to foreground development in the assessment of writing" (Camp, 2012, pp. 93–94). This development is often "inferred from the observation of changes in concrete samples of L2 production collected at different times, such as essays or other writing samples in the case of writing production" (Bulté & Housen, 2014, p. 46). In this study, therefore, the notion of development refers to the growth in the usage of academic vocabulary over the duration of the IFP.

METHOD

Context

The present study is set in the context of an IFP at a British university (henceforth 'University') with its main campus in the southeast of England and two overseas campuses based in the United Arab Emirates and Mauritius. The IFP is targeted at international students who intend to pursue undergraduate study at the University, but who do not meet the requirements for direct entry to the University's degree programs in terms of their English language and/or academic qualifications. The goal of the IFP is to prepare these students by helping them develop a range of skills necessary for study at a degree level, such as academic writing. The IFP is delivered over a period of approximately six months, and due to its generic (as opposed to discipline-specific) nature, successful completion of the program enables students to pursue a discipline of their choice at an undergraduate level within the University.

Participants

In total, 193 students (110 female and 83 male) aged 16–26 ($M = 19$, $SD = 1.71$) across the University's three campuses located in the United Kingdom, the United Arab Emirates, and Mauritius agreed to participate in the study between 2014 and 2018, with the vast majority of the participants having progressed to business, law, computer, and psychology courses on completion of the IFP. The largest proportion of the participants (113 students; 58.5%) was formed by the U.A.E.-based students. The Mauritius-based students accounted for less than a third of the participants (55 students; 28.5%) and the U.K.-based students represented the smallest proportion of the sample (25 students; 13%). The participating students came from various linguistic, educational, and ethnic backgrounds, representing approximately 54 nationalities and 55 language backgrounds. This heterogeneity of the participants can be seen as representative of the international scene characteristic of higher education in the United Kingdom.

Collected Data

The collected data comprised the first and last written assignment completed by individual students on the Academic Writing module aimed to develop the students' academic writing skills. These assignments were submitted to the University for assessment purposes and were selected for the purpose of the present study with the aim of gaining insights into the development of academic vocabulary in the students' assessed academic writing over the duration of the IFP. The collected assignments were classified in accordance with Nesi and Gardner's (2012) taxonomy of university student writing, adopted in the current study as it offers a comprehensive categorization of university writing genres

based on relatively recent British university student assessed academic writing. Accordingly, the collected assignments were classified as essays comprising finer-grained genres of exposition essays (E1s, the first assignment) and discussion essays (E2s, the last assignment). Although representing two different writing genres, the exposition and discussion essays belong to the same genre family and can thus be regarded as suitable for comparative purposes for examining academic vocabulary development in the context of this study as they share the same purpose of demonstrating the ability to construct a coherent argument. Further characteristic that the essays share is the development of an argument in three stages: an introduction containing a thesis, followed by a sequence of arguments leading to a conclusion stating the final position or thesis (Nesi & Gardner, 2012).

All submissions were included regardless of the awarded mark, with the exception of submissions that were found to be plagiarized on the premise that extensively copied sections of texts do not reflect the students' language production. The collected assignments form a corpus of IFP student writing comprising 386 texts (two assignments from each of the 193 participants) representing a range of topics (Table 1) and totaling 386,439 running words (tokens), with a token defined as a single occurrence of a word form in a text that is counted each time it occurs in any given text (Brezina, 2018).

Table 1: Overview of Collected Assignments

Assignment	Topic/subcorpus	Number of texts	Size (tokens)	Average tokens per text
Essay 1 (E1): Exposition essay	Learning styles	42	33,789	800
	Multiple intelligences	38	35,326	900
	Fake news	113	77,163	700
Essay 2 (E2): Discussion essay	Social media and crime	42	55,815	1,300
	Social media for academic purposes	38	51,355	1,400
	Surveillance society	113	132,99	1,200

Procedure

The academic vocabulary items were identified based on the AVL (Gardner & Davies, 2014), selected as it constitutes an advance on the AWL in terms of the size of the source corpus, representativeness of disciplines, and currency (Therova, 2020). Further strength of the AVL can be seen in its

organizing principle based on lemmas (i.e., all inflectional forms related to one stem and belonging to the same part of speech) compared with the word family principle used as a unit of counting in the AWL (with a word family containing a headword with all its inflected as well as derived forms). The difference between these two organizing principles can be seen from the word family "proceed" subsubsuming the following members: *proceed* (verb), *proceeds* (verb or noun), *procedural* (adjective), *procedure* (noun), *procedures* (noun), *proceeded* (verb), *proceeding* (verb), and *proceedings* (noun). According to the lemma principle, however, the following members would be counted separately: *proceedings* (a noun meaning records or minutes); *procedure* (a noun meaning technique) and its inflected plural form *procedures*; and *procedural* (an adjective meaning technical or routine; Gardner & Davies, 2014). This example illustrates the drawback of the word family principle which often brings together word forms with very diverse meanings resulting from the inclusion of derivationally related forms. The collapsing of word forms with unrelated meanings can be further seen from the AWL word family *react* subsuming the following members: *reaction*, *reactive*, *reacted*, *reactions*, *reactivate*, *reacts*, *reactionaries*, *reactivation*, *reacting*, *reactionary*, *reactor*, and *reactors*, showing the differences in meanings between *react* (i.e., respond), *reactionary* (i.e., strongly opposed to social or political change), *reactivation* (i.e., to make something happen again), and *reactor* (i.e., a device or apparatus; Gardner & Davies, 2014), or the word family *constitute* subsuming *constituting*, *constituent*, and *unconstitutional* (Durrant, 2016). The aim of using lemmas for the creation of the AVL was hence to achieve a more accurate assessment of word forms, functions, and meanings (Gardner & Davies, 2014), as inflections do not change the part of speech of the word to which they are attached, unlike most derivational suffixes (Nation, 2001).

As the AVL's organizing principle is based on lemmas, the collected texts were lemmatized first using TagAnt (Anthony, 2015), followed by identification of academic vocabulary using AntWordProfiler (Anthony, 2013). To address the varying length of the exposition and discussion essays, I considered the identified academic vocabulary items in terms of the proportion of academic vocabulary relative to all words, calculated as a percentage of academic tokens (i.e., all academic words) per all words. This was intended to provide insights into the composition of the students' texts in terms of the coverage that academic vocabulary accounts for in relation to all words, commonly used to measure academic vocabulary (Nation, 2001).

Next, I conducted the Shapiro–Wilk test of normality (Shapiro & Wilk, 1965) to establish whether the data were normally distributed, and I obtained the following measures: mean, standard deviation, coefficient of variation (*CV*), range, and 95% confidence interval for the mean. To establish whether the differences between E1 and E2 were statistically significant, I conducted a paired sample *t*-test. I then used a one-way analysis of variance to determine whether there were statistically significant differences in the usage of academic vocabulary between the two essays (E1 and E2) as well as among the subcorpora of the two essays (Table 1), followed by a *t*-test with Bonferroni correction to establish between which subcorpora the differences lay.

Next, I explored the changes (i.e., increase and decrease) in the usage of academic vocabulary with an initial focus on students showing the highest increase and decrease in academic vocabulary. I further explored these changes by investigating how they were impacted. This led to an examination of the effect of the assignment brief on the changes in the deployment of academic vocabulary between E1 and E2 by considering the percentage of academic vocabulary items drawn from the assignment brief per all academic tokens in E1 and E2. Then I explored the potential impact of the assignment topic on the changes in academic vocabulary by analyzing paired subcorpora separately to establish whether certain topics prompted the higher usage of academic vocabulary than others. Specifically, the following subcorpora were formed by a paired sample of students: learning styles and social media and crime; multiple intelligences and social media for academic purposes; and fake news and surveillance society (Table 1). I used a paired sample *t*-test to establish whether the differences in the usage of academic vocabulary between the paired subcorpora were statistically significant.

Although the deployment of academic vocabulary is often associated with academic success, the current study did not investigate a potential link between the students' awarded grades and the deployment of academic vocabulary in their written production, as the assessment criteria with which the students had been provided prior to completion of the essays did not explicitly state the usage of academic vocabulary as one of the marking criteria. It can thus be assumed that the students were not drawing explicit attention to the integration of these vocabulary items in their written assignments when addressing the assignment instructions.

RESULTS

There was an overall increase in academic vocabulary usage from E1 ($M = 13.20\%$) to E2 ($M = 16.23\%$), shown in Figure 1.
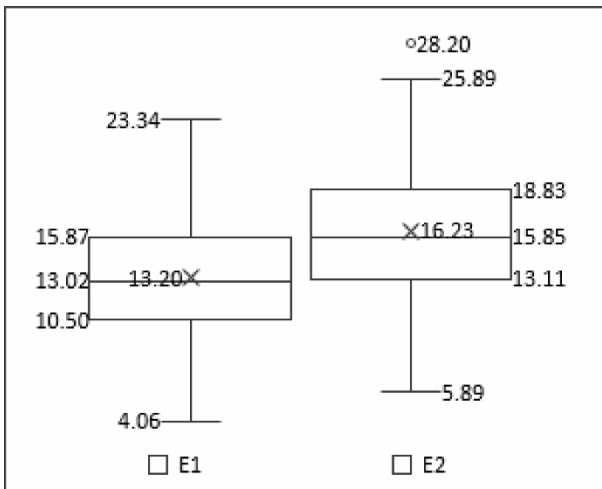

Figure 1: Academic Vocabulary Development.

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A paired sample *t*-test confirmed that the difference was statistically significant with a large effect size: $t(192) = 9.98$, $p < .00001$, $d = 0.78$. A closer examination showed that over three-quarters of students (149 out of 193; 77.2%) deployed more academic vocabulary in E2. This increase in academic vocabulary usage ranged between 0.13% and 16.49% ($M = 4.63\%$). The 44 students (22.8%) whose usage of academic vocabulary did not increase showed a decrease between 0.2% and 8.73% ($M = 2.4\%$).

The highest increase in the deployment of academic vocabulary was from 7.96% in E1 to 24.45% in E2 (an increase of 16.49 percentage points). Further examination of this student's essay revealed that the number of academic vocabulary items deployed in both E1 and E2 could be traced back to the assignment brief. Further exploration of this student's essays showed that 22.22% of all academic tokens in E1 were formed by academic vocabulary drawn from the assignment brief, compared with 33.55% in E2 (an increase of 11.33 percentage points in the usage of academic vocabulary items contained in the assignment brief). The second highest increase in academic vocabulary was from 9.93% in E1 to 24.6% in E2 (an increase of 14.67 percentage points). An examination of this student's essays showed that the increase was also impacted by academic vocabulary items drawn from the assignment brief; these academic vocabulary items formed 15.44% of all academic tokens in E1 and 31.88% in E2 (an increase of 16.44 percentage point).

The biggest decrease in academic vocabulary usage was from 23.34% in E1 to 14.61% in E2 (a decrease of 8.73 percentage points). A closer examination of this student's essays showed that although the student demonstrated the highest decrease in academic vocabulary, there was a slight increase in the deployment of academic vocabulary contained in the assignment brief: In E1, these academic vocabulary items formed 13.98% of all academic words compared with E2, where these vocabulary items formed 16.57% of all academic tokens. Hence, the overall decrease in the usage of academic vocabulary in the student's E2 was not impacted by a lower usage of academic vocabulary items drawn from the assignment brief. The second highest decrease in academic vocabulary was from 15.98% in E1 to 8.23% in E2 (a decrease of 7.75 percentage points). Similarly, despite a decrease in the deployment of academic vocabulary, an examination of the student's essays showed that the usage of academic vocabulary items contained in the assignment brief per all academic items increased from 5.38% in E1 to 12.36% in E2.

The changes in academic vocabulary usage exemplified by the students with the highest increase and decrease of academic vocabulary show that this was, to some extent, achieved by the higher usage of academic vocabulary items contained in the assignment brief. Thus, the assignment brief as a potential factor impacting academic vocabulary deployment in the students' writing production was investigated for the whole sample with the aim of examining whether drawing on academic vocabulary items contained in the assignment brief was a general trend in the IFP students' assessed writing. Table 2 shows the percentage of academic vocabulary items drawn from the assignment brief per all academic

tokens in each subcorpus of E1 and E2 as well as overall, and indicates whether there was increase (↑) or decrease (↓) from E1 to E2.

Table 2: Impact of the Assignment Brief

Essay 1	% of academic tokens	Essay 2	% of academic tokens	↑↓
Learning styles	17.63	Social media and crime	24.13	↑
Multiple intelligences	16.61	Social media for academic purposes	29.28	↑
Fake news	8.83	Surveillance society	15.16	↑
Average (M)	14.36	Average (M)	22.86	↑

As can be seen from Table 2, the proportion of academic tokens formed by academic vocabulary items drawn from the assignment brief increased overall (from 14.36% in E1 to 22.86% in E2) as well as in each subcorpus. This result hence points to the important role that the assignment brief played in the deployment of academic vocabulary in novice writers' assessed academic writing, appearing to be a contributing factor impacting the changes in the deployment of academic vocabulary and leading to increased usage of academic vocabulary in the students' written assignments. This finding thus suggests that over the duration of the IFP, the students developed the strategy of integrating the academic vocabulary contained in the assignment brief in their written assignments with an increased frequency. It also has to be noted that all E2 assignment briefs contained a higher number of academic vocabulary items than titles under E1 (Table 3).

Table 3: Academic Vocabulary in Assignment Briefs

Writing genre	Topic/ sub-corpus	No. of academic lemmas in brief	% of academic lemmas from brief per academic tokens	% of academic lemmas from brief per all tokens
Essay 1	Learning styles	26	17.63	2.95
	Multiple intelligences	22	16.61	2.33
	Fake news	18	8.83	1.03

Writing genre	Topic/ sub-corpus	No. of academic lemmas in brief	% of academic lemmas from brief per academic tokens	% of academic lemmas from brief per all tokens
Essay 2	Social media and crime	41	24.13	3.91
	Social media for academic purposes	49	29.28	6.21
	Surveillance society	32	15.16	2.12

It is thus reasonable to assume that the higher number of academic vocabulary items contained in the assignment brief impacted the higher usage of these academic vocabulary items in E2, supporting the link between a higher number of academic vocabulary contained in the assignment brief and the higher usage of these vocabulary items in the students' assessed academic writing.

Further investigation into the changes in the deployment of academic vocabulary between E1 and E2 showed that more than half of the students (92 out of 149; 61.74%) who demonstrated an increase in the usage of academic vocabulary were those who completed E1 on fake news and E2 on surveillance society, followed by a quarter of students (37 out of 149; 24.83%) whose E1 was on multiple intelligences and E2 on social media for academic purposes. Only a small proportion of students (20 out of 149; 13.42%) whose E1 related to learning styles and E2 to social media and crime demonstrated an increase in the deployment of academic vocabulary. The higher number of students from the fake news and surveillance society pair of subcorpora is perhaps unsurprising considering that these two subcorpora were formed by the biggest group of students (113) compared with the other two subcorpora (formed by 42 and 38 students). However, further examination showed that among the students who demonstrated an increase in the usage of academic vocabulary of at least 10% were students predominantly from the multiple intelligences and social media for academic purposes subcorpora (9 out of 11 students). It is also interesting to note that texts from the learning styles and social media and crime subcorpora all demonstrated an increase no higher than 7%, and only three students demonstrated an increase above the average increase of 4.63%. The significantly lower number of students demonstrating an increase in the usage of academic vocabulary from the learning styles and social media and crime pair of subcorpora prompted the question of the impact of the assignment topic on the changes in the deployment of academic vocabulary. This was hence further investigated by comparing pairs of subcorpora completed by the same students (learning styles and social media and crime formed by 42 texts; multiple intelligences and social media for academic purposes comprising 38 texts; and fake news and surveillance

society containing 113 texts), with the following results: learning styles and social media and crime: $t(41) = -0.72$, $p = .476$, $d = 0.12$; multiple intelligences and social media for academic purposes: $t(37) = 11.73$, $p < .00001$, $d = 2.25$; fake news and surveillance society: $t(112) = 9.02$, $p < .00001$, $d = 0.92$.

These results show that the usage of academic vocabulary decreased in the first pair of subcorpora, while a statistically significant increase with large effect sizes was found in the two other pairs of subcorpora. This supports the above finding relating to the highest increase in academic vocabulary usage in the multiple intelligences and social media for academic purposes pair of subcorpora. This is particularly interesting in the case of the E2 on social medial and crime and social media for academic purposes essays considering the topical similarities between these two subcorpora (i.e., the focus on social media). This indicates that even subtle topical variations may impact the deployment of academic vocabulary. Hence, this finding suggests that some topics prompt higher usage of academic vocabulary items than others.

In sum, the analysis of the development of academic vocabulary over the duration of the IFP has shown that there was an overall increase from E1 to E2 with more than three-quarters of students demonstrating an increase in the usage of academic vocabulary. A closer investigation showed that in all subcorpora the increase was achieved, to some extent, by increased usage of academic vocabulary items drawn from the assignment brief. Further examination of individual subcorpora showed that only two out of the three pairs of subcorpora showed an increase in academic vocabulary. This suggested that some topics prompted the higher usage of academic vocabulary than others. These findings are discussed next together with their implications for pedagogy.

DISCUSSION

The analysis of the development of academic vocabulary in the IFP students' assessed academic writing over the duration of the foundation program showed an increase in the proportion of academic vocabulary items in the students' texts. The increase in the usage of academic vocabulary over time broadly matches Storch and Tapper's (2009) finding of growth in academic vocabulary tokens in international postgraduate student writing over a period of 10 weeks, as well as Xudong et al.'s (2010) result showing a slight increase in the use of AWL tokens in international graduate students' writing over a similar period. However, this study's finding is contrary to other studies, which have found no changes in academic vocabulary tokens over 10 weeks (Storch, 2009), one year (Knoch et al., 2014), and three years (Knoch et al., 2015).

While some researchers have attributed a lack of improvement in the usage of academic vocabulary in students' writing to a relatively short period of study (e.g., Storch, 2009), this study has shown that the period of six months (i.e., the duration of the IFP) is sufficient for novice student writers to develop their productive knowledge of academic vocabulary. It can thus be said that the IFP in this study met one of its objectives—that is, to prepare international foundation

students for undergraduate study by helping them develop academic writing skills as one of the literacy skills required at a degree level.

Further finding concerned the role of the assignment brief, which was found to impact the increase in the usage of academic vocabulary in the students' written assignments. The reliance on vocabulary items contained in the assignment prompts has also been reported by Milton (2001), whose study showed that the least proficient students relied particularly heavily on the vocabulary items from the assignment guidelines. It can thus be reasonable to assume that the reliance of the IFP students on the vocabulary items contained in the assignment brief may be a compensatory strategy of novice writers. However, it also needs to be acknowledged that the students are expected to demonstrate that they are following the instructions set out in the assignment brief to meet the assignments' requirements, and integrating academic vocabulary from the assignment brief achieves this. Thus, drawing on the academic vocabulary from the assignment brief may be not only a strategy deployed by less proficient students but also a way of addressing the assignment instructions by explicitly referring to the vocabulary items contained in the assignment brief, which in this study led to the higher usage of academic vocabulary items in their final written assignment.

This finding thus highlights the importance of the assignment brief in the process of completing written assignments, where in addition to providing instructions and requirements of a writing task, it also serves as a vocabulary repository providing students with appropriate vocabulary to integrate in their writing and as a strategy of explicitly addressing the assignment instructions. Practitioners thus ought to be aware of the role that the assignment brief plays in student writing production and should draw the students' attention to the different purposes that the assignment brief can serve as well as to the ways in which they can utilize the assignment brief. Accordingly, practitioners should consider the wording of the assignment prompts carefully and should include such vocabulary in the assignment brief that the students would be expected to deploy in their written assignments.

An exploration of the differences between individual subcorpora forming the final assignment showed that the increase in the usage of academic vocabulary was identified in two out of three subcorpora only. This finding highlighted the impact of the topic on the deployment of academic vocabulary in the students' written assignments, suggesting that some topics may prompt the higher usage of academic vocabulary. The impact of the assignment topic hence emphasizes the importance of knowledge of topic-specific vocabulary in writing production as "each texts has its own topic vocabulary which occurs because of the message the text is trying to convey" (Nation, 2001, p. 208). The effect of the assignment topic on academic vocabulary deployment was also reported in Olinghouse and Wilson's (2013) study and corroborated by Knoch et al. (2014, 2015), who theorized that the lack of improvement in the deployment of academic vocabulary in their studies could be explained in relation to the assigned topic, which may have allowed for a limited range of vocabulary.

Hence, practitioners ought to introduce topic-specific vocabulary necessary for completion of a written task prior to writing production, as learners are likely

to produce more apt language if they are given the opportunity to meet relevant topic-related vocabulary prior to language production (Nation, 2001). This could be done through exposure to suitable reading materials or explicit teaching of the relevant vocabulary items, for instance. However, practitioners (particularly those involved in the delivery of generic program) need to find a balance between helping learners develop topic-related vocabulary necessary for a specific task and more general academic vocabulary (not topic- or discipline-specific) commonly used in various academic contexts. In terms of writing production, practitioners need to be aware that not all topics may give students an equal opportunity for academic vocabulary integration and hence need to consider the topics with which the students are presented. This is particularly important in settings where academic writing is a high-stakes activity and/or in contexts where student writing is assessed in relation to deployment of academic vocabulary based on an academic word list.

CONCLUSION

This study investigates the development of academic vocabulary in international foundation-level students' assessed academic writing from a longitudinal perspective and the factors that impacted the development of the students' productive academic vocabulary deployed in their written assignments. The findings showed an overall increase in the usage of academic vocabulary over the course of the IFP, suggesting that the period of an academic year (equaling six months in the current study) is sufficient for international students at a foundation-level of study to develop their productive academic vocabulary. Moreover, among the factors identified as having impacted the increase in the deployment of academic vocabulary were the assignment brief and topic. The pedagogical implications of these findings lie in IFP practitioners being aware of the important role that both the assignment brief as well as topic play in the process of completing written assignments with regard to the integration of academic vocabulary in student writing production.

However, one of the limitations of the present study lies in the sample being limited to one university and based on the context of a generic (as opposed to discipline-specific) IFP, meaning that the findings may not be generalizable to discipline-specific IFPs. Another limitation could be seen in drawing on a preexisting list of academic vocabulary, potentially omitting other vocabulary items that the students may have developed over the course of the IFP. Further weakness of this study relates to the corpus-based methodology focusing solely on the writing product. Future research would, therefore, benefit from studies on the development of academic vocabulary in foundation-level students' assessed writing at a greater number of universities and on discipline-specific IFPs. It might also be useful to explore other factors potentially contributing to the students' development of productive academic vocabulary through interviews, conducted with participants after every completed piece of writing, which would be particularly insightful in longitudinal studies.

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