



**An Exploratory Study of the Non-Conventional Use of
English Structure in the Writing of Thai Academics**

Michael Guy Currie

**A Thesis Submitted in Fulfillment of the Requirements for the Degree of
Doctor of Philosophy in Teaching English as an International Language
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Thesis Title An Exploratory Study of the Non-Conventional use of English
Structure in the Writing of Thai Academics

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Thesis Title An exploratory study of the non-conventional use of English structure in the writing of Thai academics
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ABSTRACT

This study investigated the factors which have influenced the level of English of a sample of 26 Thai academics from various fields, who publish work in English. In particular the study investigated the interplay of their linguistic and cultural background, their characteristic traits and adaptive behaviors and their experiences of learning and using English.

As proxies for level of English, the study analyzed non-conventional English use (NCU) in extended samples of both their writing and speech in English and also assessed their ability to recognize problematic areas of language use in their writing. The writing samples analyzed were 26 pre-publication manuscripts written by the authors, who were also interviewed regarding their experiences of learning and using English, following which a similar analysis of NCU in a sample of their speech was conducted. They were also asked to identify the main language areas which they had difficulty in using and their ordering of those areas was compared with the actual order derived from the analysis of NCUs in their written work, as a measure of their meta-linguistic awareness.

The information relating to their English learning and use experiences derived from the interviews was analyzed quantitatively and those variables which showed the highest correlations with the written and spoken NCU data and the meta-linguistic awareness coefficients were used as independent variables in multiple regression analyses, with the written and spoken NCU data and the meta-linguistic awareness coefficients as dependent variables. Significant models were derived in all three cases accounting for up to 88 % of the variance in the dependent variables.

The analysis of the manuscripts found high correlations between authors in the areas which produced the largest numbers of NCUs, indicating that the main areas giving rise to NCU were common to all the authors. The main areas were articles, prepositions,

verbs and nouns which together accounted for around 80 % of the total structure NCUs. It was noted that these areas correspond to areas identified as problematic in previous studies of learners at earlier stages of their education and are all areas where Thai and English differ markedly in their structure.

These findings suggest that the factors giving rise to the problems are widely shared by Thai learners of English at all levels and are therefore likely to be due to factors which are common to all or most Thais. Moreover, the consistency of the pattern of NCU and its agreement with earlier studies of learners at earlier stages of development, suggests that these problems are persistent over time and that while their effect may be ameliorated by learning and use experience, they are relatively immune to being entirely obviated.

The study concludes that the main factor causing the participants' NCU of English is the effect of structural differences between the Thai and English languages in those areas giving rise to the largest numbers of NCUs. Further, the regression analyses identified 30 learning and use factors as having influenced aspects of the NCU or meta-linguistic awareness variables, and that combinations of those factors accounted for between 71 and 88 % of the variance in those variables. This finding suggests that most of the variance in the rate of occurrence of NCUs between the participants was the result of aspects of their learning and use experience, with the balance being attributable to their characteristic traits and adaptive behaviors. This finding is broadly supportive of the appropriateness of complexity theoretic approaches to the study of the learning of second languages, which view language learning as a complex system which develops due to the non-linear interaction of variables over time and is dependent both on initial conditions and on learning resources.

The main implication to be drawn from the study's findings is, therefore, that SLA theories proposing that individual factors substantially influence second language learning may misjudge the complexity of the process and the importance of the situational and linguistic contexts, and that individual learning is more likely to result from a combination of many factors with none being dominant. Other implications noted relate to how the teaching of English in Thailand and in particular to the teaching of academic writing should be conducted.

The study thus contributes to the fields of SLA, error analysis and pedagogy in Thailand by focusing on a relatively homogenous sample of Thai academics, whose socio-cultural and educational backgrounds were similar and who shared a similar motivation to learn English, based on their need to use it as a means of participation in their academic communities. It is apparently the first to analyze pre-publication academic journal articles for evidence of language learning difficulties and to compare the numbers of errors with numbers of particular word types in texts as a means of assessing the degree of problematicity of errors. Moreover as no previous study identified has yet done, it offers empirical evidence of the appropriateness of a complexity theoretic approach to second language learning by identifying the wide variety of personal, situational, linguistic and experiential factors influencing the English structural accuracy of this group of participants

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Firstly I would like to acknowledge the enormous debt of gratitude I owe to my advisors, Asst. Prof. Dr. Kemtong Sinwongsuwat and Dr. Kathleen Nicoletti who have guided me towards the completion of this project; whenever I faltered they helped me to move forward and whenever I needed inspiration they were always there with ideas based on their much greater experience. I would also like to thank the other members of my examining committee Asst. Prof. Dr. Compol Swangboonsatic and Asst. Prof. Dr. Premin Karavi for their time and effort in reading this thesis and earlier work leading up to it, and commenting constructively on it.

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But above all, I would like to give heartfelt thanks to the 26 authors whose work forms the basis of my research. My vow of preserving their anonymity prevents me from identifying them but I can honestly say that none of this would have been possible had they not generously allowed me to include their work in my study and then given up their time to talk to me and tell me their stories. But beyond that, they were an inspiration to me to persevere and complete this work. Their stories made me feel humble and proud to be a part of Prince of Songkla University. Truly, their "...soul is for the benefit of mankind"

Michael Guy Currie

CONTENTS

Chapter	Title	Page
	Title Page	i
	Approval Page	ii
	ABSTRACT	v
	Acknowledgement	viii
	Contents	ix
	List of Tables	xiii
	List of Figures	xvi
	List of Papers	xvii
Chapter 1	Introduction	1
	1.1. English and English education in Thailand	4
	1.2. English in the Thai national curriculums	6
	1.3. English in academic discourses in Thailand	8
	1.4. Background and aim of the study reported	8
Chapter 2	Literature review and research questions	10
	2.1. Complex dynamic systems theory	10
	2.2. Learner narratives as a source of data	20
	2.3. Methodological issues in narrative data collection	21
	2.3.1. Grounded theory	21
	2.3.2. Retrospective case studies and retrodictive qualitative modeling	21
	2.4. Research within the CDST paradigm	24
	2.5. Other notable theories of SLA	27
	2.6. Age effects in L2 learning and the critical period hypothesis	32
	2.7. Errors in second language learning	38
	2.7.1. Recent EA and related studies in Thailand	40
	2.7.2. Recent EA studies outside of Thailand relating to English academic writing	43
	2.8. Research aims and questions	44

CONTENTS (cont.)

Chapter	Title	Page
Chapter 3	Methodology	46
	3.1. Source of data and selection of participants	46
	3.2. Analysis of the manuscripts	50
	3.3. Validating the methodology	52
	3.4. Interviews with the authors and the collection of the speech samples	53
	3.5. Data analysis	57
Chapter 4	Results	60
	4.1. Quantitative analysis	60
	4.1.1. Overall analysis	60
	4.1.2. Inter-individual comparisons	62
	4.1.3. Comparison of NCU with word frequency in manuscripts	63
	4.1.4. Intra-individual analysis	69
	4.1.5. Frequency of occurrence of individual structure NCU codes	69
	4.1.6. Analysis of the speech samples and meta-linguistic awareness	71
	4.2. Quantitative data extracted from the interviews and multiple regression analyses	73
	4.2.1. Model 1: Writing structure NCUs as the dependent variable (NCUWRST)	76
	4.2.2. Model 2: Speaking structure NCUs as the dependent variable (NCUSPST)	76
	4.2.3. Model 3: Meta-linguistic awareness score as the dependent variable (PROBCOR)	77
	4.3. Qualitative data from the interviews	78
	4.3.1. Socio-cultural and linguistic background of the participants	79

CONTENTS (cont.)

Chapter	Title	Page
	4.3.2. Pre-university educational background	84
	4.3.3. English in the university and beyond	92
	4.3.4. Attitudes towards publishing in English	99
	4.4. Classifying the narratives	102
Chapter 5	Discussion	111
	5.1. Underlying factors contributing to NCU	119
	5.2. Other factors accounting for inter-individual variation in NCU	122
	5.3. Synthesis of the findings	125
	5.4. Implications	129
	5.5. Significant findings	132
Chapter 6	Conclusion: summary, contributions and limitations	135
References		142
Appendix 1	Tables (See below)	158
Appendix 2	Summaries of interviews with the participants in the study	219
	ANN	220
	BEN	224
	CHAZ	226
	DEE	228
	EVE	233
	FENI	237
	GEE	240
	HAL	244
	INA	250
	JEN	257
	KEN	263
	LIZA	267
	MON	272
	NAM	275

CONTENTS (cont.)

Chapter	Title	Page
	OYLE	278
	PAT	284
	QUIN	288
	ROB	294
	SAM	299
	TOM	303
	UNA	308
	VAL	312
	WAN	315
Appendix 2	Summaries of interviews (cont.)	
	XIAN	319
	YVES	324
	ZOLA	327
Appendix 3		333
	A. Sample e mail approaching potential participants	334
	B. Pre-interview questionnaire	335
	C. Sample semi-structured interview template	338
	D. Sample ordering activity format	340
	E. Informed consent and agreement to participate	341
Paper 1		342
Paper 2		356
Vitae		378

LIST OF TABLES

Table	Title	Location	Page
1	Reports of generalized error analysis research in Thailand between 2000 and 2017	Appendix 1	159
2	Brief demographic information and education/publication history of participants	Body text	49
3	Summary of data fields extracted as quantified data from participant interviews	Appendix 1	163
4	Final coding nomenclature used in analyzing writing samples	Appendix 1	168
5	Comparison of outcome of analysis of papers authored by the same participants	Body text	53
6	Codes used in thematic and content analysis of the interviews	Appendix 1	180
7	Summary of coding of changes suggested during editing	Appendix 1	183
8	Summary of coding of changes suggested during editing as percentages of the total NCUs	Appendix 1	186
9a	Summary of one-way ANOVAs on NCUs in participants' manuscripts	Body text	62
9	One-way ANOVAs on NCUs in participants' manuscripts	Appendix 1	189
b	Based on coded changes by 234 individual codes	Appendix 1	189
c	Based on coded changes by 192 structure codes	Appendix 1	190
9d	Based on coded changes by 14 <i>Structure</i> sub-categories	Appendix 1	191
e	Based on coded changes by 6 main categories	Appendix 1	192

TABLES (cont.)

Table	Title	Location	Page
10	Correlation matrix between participants' writing NCUs based on coded changes by 234 <i>Structure</i> and non-structure codes	Appendix 1	193
11	Correlation matrix between participants' writing NCUs based on coded changes by 192 structure codes	Appendix 1	194
12	Correlation matrix between participants' writing structure NCUs based on coded changes grouped into 14 <i>Structure</i> sub-categories	Appendix 1	195
13	Correlation matrix between participants' writing NCUs based on coded changes grouped into 6 main categories	Appendix 1	196
14	Overall word-type tokens per Wmatrix in 26 manuscripts	Body text	64
15	Correlation matrix of numbers of tokens of word types in 26 manuscripts based on the 137 Wmatrix categories	Appendix 1	197
16	Correlation matrix of numbers of tokens of word types in 26 manuscripts based on the 11 <i>Structure</i> sub-categories	Appendix 1	198
17	Word type tokens after adjustment, and corresponding NCUs	Body text	68
18	Comparison of rates of occurrence of NCUs per 1000 words of the manuscripts and per 100 words of each word type for each author	Appendix 1	199
19	Tokens per individual code from the analysis of the 26 manuscripts	Appendix 1	201
20	Structure NCU distribution in speech samples and meta-linguistic awareness score	Appendix 1	204

TABLES (cont.)			
Table	Title	Location	Page
21	One-way ANOVA on NCUs in participants' speech samples. based on average sample length of 1000 words	Body text	72
22	Correlations between distribution of NCUs in Speech sample	Appendix 1	206
23	Correlations between speech and writing NCUs based on 14 <i>Structure</i> sub-categories	Body text	73
24	Multiple regression of factors associated with rate of occurrence of NCUs in participants manuscripts (NCUWRST)	Appendix 1	207
25	Multiple regression of factors associated with rate of occurrence of NCUs in participants' speech (NCUSPST)	Appendix 1	209
26	Multiple regression of factors associated with participants' score in ordering problem areas (PROBCOR)	Appendix 1	211
27a	Summary of variables appearing in the three multiple regression models and correlation coefficients (r) with dependent variables	Appendix 1	213
27b	Individually significant independent variables and the regression models within which they appear	Appendix 1	216
28	Learner, help and motivation type definitions	Body text	104
29	Participants' learner, help and motivation types and their correlations with dependent variables	Body text	106
30	Participants' preferred writing methods and learning tools	Body text	108
31	Regression model of learner type associations with rate of occurrence of NCUs in participants' speech (NCUSPST)	Appendix 1	217

LIST OF FIGURES

Figure	Title	Location	Page
1	The New Big Five framework	Body text	16
2	A narrative-based representation of the psychology of the language learner.	Body text	19
3	Overall breakdown of structure NCUs between 14 sub-categories	Body text	61
4	Adjusted distributions of:	Body text	67
a	Words in texts per Wmatrix	Body text	67
b	Structure NCUs	Body text	67
c	NCU's as a proportion of words in each word type in the manuscripts	Body text	68
5	Participants' periods in formal pre-university education and commencement of formal English classes	Body text	86
6	The hierarchy of influences on Thai learners internalized English language structure	Body text	127

LIST OF PAPERS



This thesis is based on the following papers:

1. Non-conventional English language use in the writing and speech of Thai academic writers: A preliminary study.
2. The influence of word-type frequency and mother tongue effects on non-conventional English-structural usage in Thai academics' writing.

Letter (e mails) of acceptance: Paper 1

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Please find attached the final version of your co-authored paper to be published in the December issue of ESP Today. You may wish to check if everything is OK once again. Also please find attached a sworn statement form for you to fill in, sign, scan and send back to me as a PDF file at your earliest convenience.

All the best,
Nadezda

Nadežda Silaški
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Dear Authors,

I am pleased to inform you that the December 2016 issue of *ESP Today, Journal of English for Specific Purposes at Tertiary Level*, which contains your papers, has been published at http://www.esptodayjournal.org/esp_today_current_issue.html.

Thank you very much for your contributions and I hope that you will be our authors in the future as well. It was my pleasure collaborating with you.

I look forward to our future co-operation!

With my best wishes from Belgrade,

Nadežda Silaški

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Letter of acceptance: Paper 2

Ref. No.: 0301.7/ 150

January 7, 2019

Faculty of Humanities and Social Sciences
Khon Kaen University

Dear: Mr.Michael Guy Currie

Subject: Letter of Article Acceptance

Thank you very much for your submission of the article entitled THE INFLUENCE OF WORD-TYPE FREQUENCY AND MOTHER TONGUE EFFECTS ON NON-CONVENTIONAL ENGLISH-STRUCTURE USAGE IN THAI ACADEMICS' WRITING to Journal of Humanities & Social Sciences, ISSN 0125-5061 which is the Journal in Thai-Journal Citation Index (TCI) Centre, Group 1.

We are pleased to inform you that your paper has been reviewed and accepted for publication in Journal of Humanities & Social Sciences, Volume 36 Issue 1, January – April 2019.

Yours sincerely,

Assoc. Prof. Dr. Rattana Chanthao (Ph.D)
Editor-in-Chief
Journal of Humanities & Social Sciences

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1. Introduction

In an ETS review of writing as a cognitive skill, Deane et al. (2008, p.1) defined writing as "...a particular kind of verbal production skill where text is manufactured to meet a discourse demand..." which "...cannot be understood apart from the social and cognitive purposes it serves." The genre of academic writing in English, or more specifically English for research publication purposes (ERPP – Cargill and Burgess, 2008) perfectly illustrates that definition: it is undertaken by researchers, theoreticians and others operating within particular fields of academic enquiry in order to disseminate information, research findings and informed opinions to other members of those discourse communities employing formalized versions of English comprehensible and familiar to particular discourse communities but not necessarily to others outside of them.

ERPP falls within the broader genre of English for academic purpose (EAP) which Gillett (1996) noted, covers all aspects of the use of English in the academic field, although identifying writing as being probably the most important aspect of EAP, and highlighting accurate grammar and language forms as well as the formal language used in the genre as being crucial components of it. The study which forms the subject of this paper relates to the language problems which Thai academics face in operating within the EAP/ERPP genres and in particular, this thesis will look at the aspects of English structure which they find most difficult to use in writing journal articles as reflected by their non-conventional language use (NCU).

The abbreviation *NCU* is used in this thesis to cover all instances where in editing a manuscript, the editor recommended a change based on any factor other than the information content of the paper. The expression *non-conventional* was used to avoid the pejorative implication of the word *error*, which would also have been factually incorrect in respect of many of the changes which were suggested at the time of the original editing of the manuscripts which did not pertain to language structure (i.e., were not grammatically incorrect) but were based on sections of the text in the manuscripts where the language use did not conform to generally accepted (i.e. conventional) lexical choices or rhetorical style, either within the EAP/ERPP genres or in wider use among native speakers of English. For reasons of consistency,

however, the term was used to cover both those instances described above as well as where the language use did not conform to English grammar/English grammatical structure, which are referred to as *structure NCUs* to distinguish them. The use of the word *conventional* to denote general accepted language use accords with the definition of language given by Crystal and Robins (2018), “a system of conventional spoken, manual, or written symbols by means of which human beings, as members of a social group and participants in its culture, express themselves” as well as with many instances of use of the term in the published literature relating to language, e.g., Cruse (2000, p.7), who cites conventionality as one of the basic notions of semiotics. The abbreviation, NCU is used in this thesis in both its non-count/unpluralized form as a general noun and in a pluralized form (NCUs) to refer to countable tokens of non-conventional use of language.

English is well established as an international language in academic publication not only in English speaking countries but it is also widely accepted even in countries where English is not commonly spoken. As Tang (2012) noted in considering the role of English as an academic *lingua franca*, academic publishing is now the foremost means by which scholars establish their voice within their disciplinary communities and their employment status is likely to be heavily influenced by their publication of research articles, particularly in international journals, the majority of which demand work to be presented in English. Larsen and von Ins (2010) in a review of a number of subject areas noted a general tendency for publication indexes to favor journal articles written in English and as an extreme example, Clarke et al (2007) reviewed over 200,000 articles in the field of public health listed in the Science Citation Index and found that 96.5 % were written in English. Further, as Vasconcelos, Soerenson and Leta (2009) noted in a study in Brazil, a lack of skill in English is a significant barrier for publication in international journals. There is therefore considerable pressure on authors to have their work published in English but for researchers who do not have English as their first or even second language this can present a considerable impediment to publication. Thus as Curry and Lillis (2010) observed, English holds a dominant position in academic publication and scholars from non-Anglophone backgrounds are frequently faced with the difficult decision to write for publication not in their own first language (L1) but

in English, which may not even be their second language (L2) and of which they may have a less than perfect command.

For historical reasons outlined below, English skills are not widely distributed within the country and in the latest EF-EPI survey (EF-English Proficiency Index, 2018), Thailand was ranked 64th out of 88 non-English speaking countries, corresponding to low English proficiency. Therefore, the challenge of writing an article in English is likely to be considerable for many aspiring Thai authors. Whilst Thai academics and post-graduate students might be expected to have a generally higher level of English proficiency because of the demands on their ability to understand and operate in English made by their educational or academic careers, the difficulty of writing academic English cannot be underestimated. Nevertheless to have reached a sufficient standard of proficiency to write an article for publication in an academic journal is no small achievement and would suggest that those researchers who are successful in so doing must be among the top tier of English users in Thailand. This is particularly impressive when one considers that most will have learnt the language not as a child in an English speaking environment nor even within an environment where English had the status of a second language, but purely within the Thai education system.

Nevertheless, Thailand has been noted to be generally under-represented in international research publication despite efforts from government agencies to encourage Thai universities to focus on research, and as an illustration of this tendency, Jaroonhongdach et al, (2012) note that based on a search in the SCOPUS database, between 2000 and 2010, out of an estimated 5000 English Language Teaching (ELT) professionals in Thai universities, only 16 published articles of which they were the corresponding author with the total number of articles being 28 in that decade. The government's efforts to encourage research culminated in the Office of the Higher Education Commission selecting nine outstanding research universities in 2009 which were to be upgraded to become world-class universities, and one of the three selection criteria employed was the number of research publications in English language journals in the preceding five years (Sombatsompop et al., 2010). Prince of Songkla University (PSU) was one of those nine universities and all the participating

authors in the study which forms the subject of this thesis were either past or present faculty members at one of its five campuses in Southern Thailand or had studied at post-graduate level at its main campus in Hatyai.

1.1. English and English education in Thailand

Thailand's history as the only South or South East Asian nation never to have been colonized by a western power has left it uniquely situated linguistically as the only country in the region with no historical link to a European language. Thus, while all other nations in the region now, to a greater or lesser extent, have national languages which fulfill official and non-official functions, Thailand is the only country which can boast an unbroken language history dating back beyond the modern era, of using the Thai language as both its official language and, for the majority of Thai people, its language of social commercial and educational discourses (Smalley, 1994).

Whilst this language hegemony is something which has been officially fostered as a means of creating social unity, it has been widely recognized that in an increasingly globalized world, the reliance on Thai as the country's main medium of communication could lead to it becoming somewhat isolated in areas where international discourses favor the use of an international language such as English as a *lingua franca*. Therefore although English has no official standing, (Darasawang & Watson-Todd, 2012), successive Thai governments have encouraged the learning of English, and through their education policies, have sought to foster English skills throughout the Thai population (Darasawang, 2007).

It is frequently stated that these policies have not been successful and that to a large extent, Thai people are unable to use English for communicative purposes. Although some research has been conducted into the English of Thais, the assessment that the education system has failed in this area seems to be largely based on evidence derived from three areas: the results of tests taken by students within the Thai education system, comparisons of the results achieved by Thais in international tests such as TOEFL and IELTS and error analyses of written work produced mostly by Thai students during the course of their education. There is also a widely held view that failures in the formal education system are to blame for Thailand's generally low

level of English skills based on both anecdotal evidence and national surveys (Foley, 2005).

However, none of the approaches to studying this issue have so far attempted to equate English learning experience with how well people use English in real situations. Although as mentioned above many test result-based studies have ascribed low levels of achievement to failures in the education system, and studies using an error analysis approach have tended to cite mother tongue effects as well as developmental and learning-based causes, those conclusions have no firm empirical basis.

Moreover, test based assessments and assessments based on error analyses may be misleading since to a large extent, as Thailand is currently organized, the vast majority of Thai people have no need to use English, as Thai, in the form of both Central Thai and its regional variants, dominates all social discourses in Thailand (Smalley, 1994) and even within commerce and industry in general, only a limited number of executive level staff have any need of English skills, with most Thai employees having little or no need to be able to understand or communicate in English. It is only within a limited number of domains which are by their nature international, such as tourism and the offshore oil and gas industry, that employees at a „shop floor“ level have any need to use English on a regular basis (Baker, 2012; Fitzpatrick, 2011) and it is perhaps within these areas that assessments of the success or failure of official efforts to encourage the achievement of English skills should be conducted.

However, the present situation notwithstanding, it is likely that with Thailand's accession to the ASEAN Economic Community where English will function as the working language, the need for English skills will gradually increase, particularly within the business areas where free movement of labor between ASEAN members has been agreed. Thais who do not possess English skills are likely to find that taking advantage of the ability to work in other ASEAN countries will be limited by a lack of English communicative ability, and whilst the movement of workers from other ASEAN nations into Thailand is unlikely in the short term to affect the position of Thai as the dominant language of internal discourses, in those areas where

English is already established, the need for Thais to possess effective English skills on a par with the skills of incoming workers will become an issue.

To date there has been little research into the ability of Thais within particular domains where English skills are a factor, that has studied their ability to operate effectively within their specific domain, and it is therefore difficult to assess whether in these areas the Thai education system has been successful in allowing people to develop the skills they need to effectively participate in domain specific discourses. Ideally such domain specific studies should be based on assessments of real English use within a domain-specific discourse by people from within the domain rather than relying on test results, and should address the issues of whether the Thai education system succeeded in equipping them with the basic English skills they needed to enter that domain, and if not, what factors within the education system and in Thai society more generally were implicated in that lack of success? The aim of such studies would be to learn from their experience both in respect of the future of English language education in Thailand as well as in respect of the measures that should be taken to support those who need to use English but may not have been equipped with the skills they require.

1.2.English in Thai national curriculums

The current Thai Core Educational Curriculum (Ministry of Education, 2008) makes the learning of English compulsory from prathom 1 (grade 1) through to mathayom 6 (grade 12), with other foreign languages being optional subjects. However, the participants in this study had all completed their formal pre-university before that came into force. Over the course of the previous approximately 50 years before the 2008 curriculum came into force there were four different curricular regimes in force under which English was treated differently, during which all the participants in this study underwent formal education, with all but two completing their school learning by 1999 (See Fig. 4 on page 81 for full details). From 1960 to 1977, English was compulsory for all students beyond grade 4, but with the introduction of the 1977 curriculum, English was no longer a compulsory subject nor were any other foreign languages. Moreover the curriculum suggested that if schools opted to teach foreign languages that should only be in mathayom grades, and any

school that decided to teach English or any other language in prathom could only do so with the approval of the Ministry of Education, which would be granted based on the availability of properly qualified teachers (Darasawang, 2007; Foley, 2005). In practice however, as Foley notes, since English remained a subject tested in the national university entrance examinations, it remained a widely-taught part of schools' actual curriculums.

That period came to an end with the implementation of the 1996 curriculum, which reintroduced English as a compulsory subject from prathom 1 (Foley, 2005) and although in the 1999 Education act which was implemented in the 2001 national curriculum, English was not strictly a compulsory subject, since a foreign language was compulsory, in practice most schools adopted English as the language taught (Darasawang, 2007).

Nevertheless, the success achieved in equipping students with English skills via these various national curriculums has been noted as being less than satisfactory and Foley (2005) cites a report from the Chulalongkorn University Academic Service Centre in 2000 which identified failings in a number of areas, notably that the curriculum had too much content, and that students were being inadequately prepared to use English at the level required and that part at least of that situation was due to learners' own failings combined with teachers being inadequately prepared and overloaded with responsibilities. Further, the report identified a lack of learning media and an inadequate budget to support extra-curricular activities, with English being taught in inefficiently managed classes consisting of large numbers of students with learning being assessed mostly by multiple-choice tests since teachers did not have time to grade essay-based tests or to conduct continuous assessments. The report concluded that the output from the system was that in most cases, students were unable to reach the standard needed to deal with the real-life use of English.

Moreover, a national survey conducted by the Office of Educational Testing (1999, cited in Foley, 2005) found that at grades 6, 9 and 12 students English writing skills were at a very low level and that a very low number of students were able to reach an acceptable level.

1.3. English in academic discourses in Thailand

The need for English skills arises both within the educational system and within academia more generally, and Foley (2005, p. 226) in identifying domains in Thai society where English is widely used in Thailand, includes both tertiary education and scientific publication as well as noting that English is the language in which most international conferences held in Thailand are conducted. This need arises, therefore, not just for those actively engaged in the teaching of English but more generally, because of the preponderance of English as the language of academic discourses. Thus, academics engaged in research and students at a post-graduate level are likely to find that they need to employ English reading skills because much of the literature they need to consult will be in English language journals and many textbooks in scientific and non-scientific fields alike may only be available in English. Further, in order to publish reports of research findings internationally, a grasp of English writing skills including knowledge of the appropriate academic genre is necessary, as is a satisfactory level of spoken English when participating in international conferences in order to present their work to their peers. However, to date there has been little research focusing on the level of English ability manifested in the writing and speaking skills of academics or on how they acquired those skills.

1.4. Background and aim of the study reported

The study reported in this thesis investigated the language problems which Thai academics face in operating within the EAP/ERPP genres and in particular, considered the aspects of English structure which the participants find most difficult to use as reflected by their non-conventional structural use (structure NCU) of the language. The study was based on the work of authors who had found it necessary to have their work proof-read and edited by a native speaker prior to submitting it for publication, in most cases to a journal outside of Thailand. This thesis describes the results of the analysis of the changes to 26 papers which were recommended by the author who was engaged as an English native-speaking consultant editor by the Research and Development Office of the Graduate School at PSU, during the editing and proof-reading process and focuses on those changes which were based on structure NCUs within the manuscripts.

The study also collected data by questionnaires and semi-structured interviews with the authors regarding their experiences in learning and using English and of publishing work in English. The main aim was to investigate whether the development of their language skills as reflected by their NCU could be associated with those experiences and how they responded to them, as well as to the socio-cultural and language context in which they are situated.

The study represents a novel approach to identifying links between learning experience and language development based on both quantitative data analysis and qualitative approaches framed in the theoretical concept of language learning as a complex dynamic system. The study is the first traced which uses a data-driven approach to validating the applicability of complexity theoretic approaches to studying the acquisition and development of second and foreign languages. The study also employs McAdams and Pals' (2006) new big five model of personality psychological as a framework for the analysis of the learners' experiences collected using a retrospective case study design (Street and Ward, 2012) to analyze the participants' narrative accounts of their experiences spanning, in some cases, more than three decades of learning English.

The literature review which follows presents relevant aspects the study's theoretical framework, complex dynamic systems theory (CDST), followed by a broad overview of theoretical approaches to second language acquisition (SLA) including a review of recent research relating to the critical period (CP) hypothesis, and reviews relevant literature relating to error analysis (EA) and particularly to recent EA studies in Thailand, before setting out the research questions considered in this paper. The study's methodology and results are then described in the two following chapters. Which are then discussed in the penultimate chapter and a concluding summary is offered in the final chapter.

2. Literature review and research questions

2.1. Complex dynamic systems theory

The study described adopted as its theoretical framework, complex dynamic systems theory (CDST) which views language learning as a complex non-linear system. However, it must be noted that the initial collection of its data was conducted under a grounded theory (Strauss and Corbin, 1998) paradigm. The adoption of the CDST perspective was a result of clear indications which became apparent after the data was collected that this was the relevant framework within which to consider the findings and to discuss them.

The existence of complex systems first came to widespread public attention in Gleick's (1987) volume, *Chaos: making a new science*. He traced the origins of what was then called chaos theory to its mathematical roots, although noting that among its early developers were both meteorologists and experimental scientists, particularly those concerned with fluid dynamics where complexity had clear and immediate application. Some idea of the present extent of the fields to which complexity has been applied may be gained from Castellani's complexity map (Art and Science Factory, 2018) which is by no means exhaustive as whilst formal linguistics is referenced to the work of Noam Chomsky, there is no reference to its application to the field of SLA. Similarly, although Gleick does not deal with the application of complexity to the social sciences, as noted by Larsen-Freeman (2017, p. 36), who was an early proponent of applying the principles of complexity theory to language, it is now widely applied to socio-cultural phenomena and between 2006 and 2011, more than 80 journals published articles dealing with its application to the social sciences.

In Ortega and Han (2017) a volume dedicated to Diana Larsen-Freeman in recognition of her role in pioneering the application of complexity theory (CT) to language and SLA, de Bot (2017) suggests that CT, the term used by Larsen-Freeman and other US-based researchers and the nomenclature, dynamic systems theory (DST) which has been used by researchers in Europe, particularly at the University of Groningen, refer to essentially the same framework, hence the adoption of the composite CDST. He sets out the main characteristics of DST as being:

- “
- Interaction of variables and systems over time.
 - Dependence on initial conditions
 - Non linearity
 - Dependence upon resources
 - Iterative development.”

As de Bot notes, the study of language is a field within the general area of human cognition and the traditional method of approaching its study by quantitative methods is through the collection of data and the building of models. However he recognizes that more often than not, in the study of language neither complete data nor appropriate models may be available and that qualitative methods may be more appropriate, particularly in so called dynamic description of complex systems, which Byrne and Callaghan (2014) note are crucially dependent on the construction of narratives, which may be amenable to both quantitative and qualitative analysis.

Larsen-Freeman’s interest in language as a complex system dates back more than 20 years and in her first publication on the subject (Larsen-Freeman, 1997), she noted parallels between CT, and scientific ideas of how complex non-linear systems develop, and the development of language in L2 learners. Initially she offered the analogy on a metaphoric level but suggested that it challenged reductionist views of how language is acquired. Latterly however the notion of language as a complex system has been developed into a more formalized approach to studying language at all levels and Larsen-Freeman now describes CDST as a meta-theory which “...defines the nature of the object and the methodology that is to be employed to investigate the object; it informs object theories which have specific foci, in our case having to do with the nature of language and its development.” (Larsen-Freeman, 2017, p. 56)

In her earliest work on the subject, Larsen-Freeman she described complex non-linear systems as being „...dynamic, complex, nonlinear, chaotic, unpredictable, sensitive to initial conditions, open, self-organizing, feedback sensitive, and adaptive.” (Larsen-Freeman, 1997, p 142) and then proceeded to set out the applicability of these attributes to language: it is a dynamic system in which basic units such as phonemes, words, etc. are combined in a grammar to produce a wide

variety of utterances. Additionally, language is dynamic in that it adapts over time with use, and this diachronic change is neither linear nor predictable, often mirroring contextual changes in its environment. Further, this process can often best be observed in retrospect. Moreover this dynamism is dependent upon language users whose own utterances change over time and in doing so, shape the language and the “rules” by which discourse is conducted. As Gleick (1987, p. 24) put it: “Non linearity means that the act of playing the game has a way of changing the rules.” Language is therefore emergent rather than being constrained or dictated by any fixed standard. The process of change is however moderated by the adaptation of language use between users to ensure mutual intelligibility. Thus language is self-organizing and adaptive, mirroring other complex non-linear systems notably connectionist models of mental activity.

Moreover, language itself is complex, consisting of many interconnected layers with the interconnections between its components influencing each other as well as shaping the performance of the whole system. It is also sensitive to its initial conditions and in her first exposition on the subject, Larsen Freeman (1997) suggested that universal grammar might be taken as being the initial condition which defines the shape which languages take, but that there is infinite capacity for variation within that “finite grammar space”. However Larsen-Freeman’s later papers have rejected the nativist or pre-formationist view of an innate human adaptation to language in favor of a usage-based, cognitive view of language as resulting from “domain-general cognitive processes” (Beckner et al., 2009, Larsen-Freeman 2017). Nevertheless, the shape which a language adopts creates so-called, attractors which predispose its users to follow the structural patterns of their first language, offering a plausible explanation for both the phenomenon of assimilation and also for mother tongue influence on the learning of second languages.

Among the factors which Larsen-Freeman (1997) connects to learning trajectories within SLA and the degree of success achieved are external factors such as the features of both the target language and the L1, the input and feedback received, interactions in the target language and the cultural context in which they exist, as well as factors internal to the learner such as age, attitude, aptitude,

motivation and their reasons for learning. Further, the combined effect of these factors is unpredictable and none of them alone can determine the learning with the interplay between them having the greatest effect. Additionally, whilst the learning process is non-linear, over time it is self-organizing and although a learners' progress often appears to be chaotic with periods of apparent random use of language features occurring, order may eventually assert itself. However the existence of attractor states inherited from the learner's L1 might, in the absence of sufficient learning, result in the fossilization of incorrect forms. Moreover she suggests that there is no final state and that all learning is provisional and there is nothing unusual about the instability of learners' idiolects from the perspective of CDST since all such systems are subject to unpredictable variation over time.

Larsen-Freeman also notes the difficulty of measuring all the factors which might influence a learner over the course of learning and particularly notes that the effect of instruction cannot realistically be isolated from other factors in assessing its effect, which can only be gauged based on the outcome of the interplay of all the interconnected factors. As she states in her summary "...an (interlanguage) must be conceived as the evolving grammar of the learner adapting to an evolving target grammar, not as one of a set of successive approximations to a steady-state grammar." (1997, p. 159).

In a position paper authored by the "Five Graces Group" (Beckner et al., 2009) of which Larsen-Freeman was a part, the authors stated their joint commitment to the concept of language as a CDST and among their jointly held positions reaffirmed their view that grammar develops out of language use (i.e., usage-based grammar) and that although there are significant differences between the process of L1 and L2 acquisition, noted that input and interaction are fundamental to SLA and that the sequence in which language features are learned is dependent upon the frequency and saliency of the input, with recency and context also contributing to the development of the language. They recognized that L2 acquisition is affected by the learner's L1 through both cross-linguistic influences as well as blocking learner's perceptions of differences between the L2 and their L1, leading to the L1 shaping the learner's performance in the L2. Finally, the authors accepted that learning an L2 as

an adult is different and more difficult than learning one's L1 as a child and that in many cases this results in L2 learning achievements which are considerably less than their L1 level. They noted that many naturalistic learners (i.e., those who receive similar input to that of natives but receive no explicit explanations [Gor and Long, 2009] tend never to perform beyond a "basic level" which relies on simplification and does not recognize non-salient features, such as bound morphemes, and that it may only be through instruction that redundant forms and irregularities may be acquired. Further, they suggested that, "...in cases in which the target language is not available from the mouths of L1 speakers, maximum contact languages learned naturalistically can (thus) simplify and lose grammatical intricacies." But that this effect can be avoided ... "...by means of dialectic forces, socially recruited, involving the dynamics of learner consciousness, form-focused attention, and explicit learning" (Beckner et al., 2009 p.12; see also Ellis, 2008).

In her own contribution to the volume dedicated to her Larsen-Freeman (2017) highlighted the challenges to research presented by a CDST approach and particularly questioned whether traditional statistical methods can truly reflect the changes inherent in the process of SLA and also noted that doubt has been cast on the relevance of identifying the effects of individual variables on language development, when what is important is the interaction between all the variables in the process. She commented in regard to the methodological implications that:

"... a big question concerns methodologies needed to study complex social systems. How are we to resolve their inherent indeterminacy? How are we to draw boundaries around the object of concern when everything is connected to everything else? How are we to undertake the research enterprise in a way that honors the wholeness without becoming awash with holism? Is it truly possible to generate replicable findings? Further, given context dependency, is it possible to generalize our findings beyond a given study?"

She suggested that it may be more relevant to apply the findings of studies to theories rather than attempting to generalize their findings beyond their immediate context. Moreover, as Larsen Freeman and Cameron (2008, p. 118) noted, "...learner

language is the way it is because of the way it has been used, it's emergent stabilities arising out of interaction" and that an emic perspective on what allows learners to learn a second language is therefore essential. None the less, Larsen-Freeman (2017) citing Mufwene (2008) accepted that from a learner's perspective the language system is unlikely to be their primary interest, rather their concern will be related to how that language enables them to situate themselves professionally or socially.

In the same volume, Dornyei (2017) described his own conversion from the traditional view that learners' personal learning characteristics based on motivation, language aptitude, learning styles and learning strategies could be used to predict the success of learning outcomes, to a more complex perspective. He noted that these four factors "...were viewed as important mediating variables in the SLA process, explaining a significant proportion of learner variation in L2 attainment and performance." However, Dornyei suggests that:

"... the elegant view of learner characteristics comprising a series of modular IDs that are conceptualized as *discrete* and measurable *traits* that remain *stable* across situations may not be more than a convenient myth that we need to (reluctantly) give up." (Italics in original)

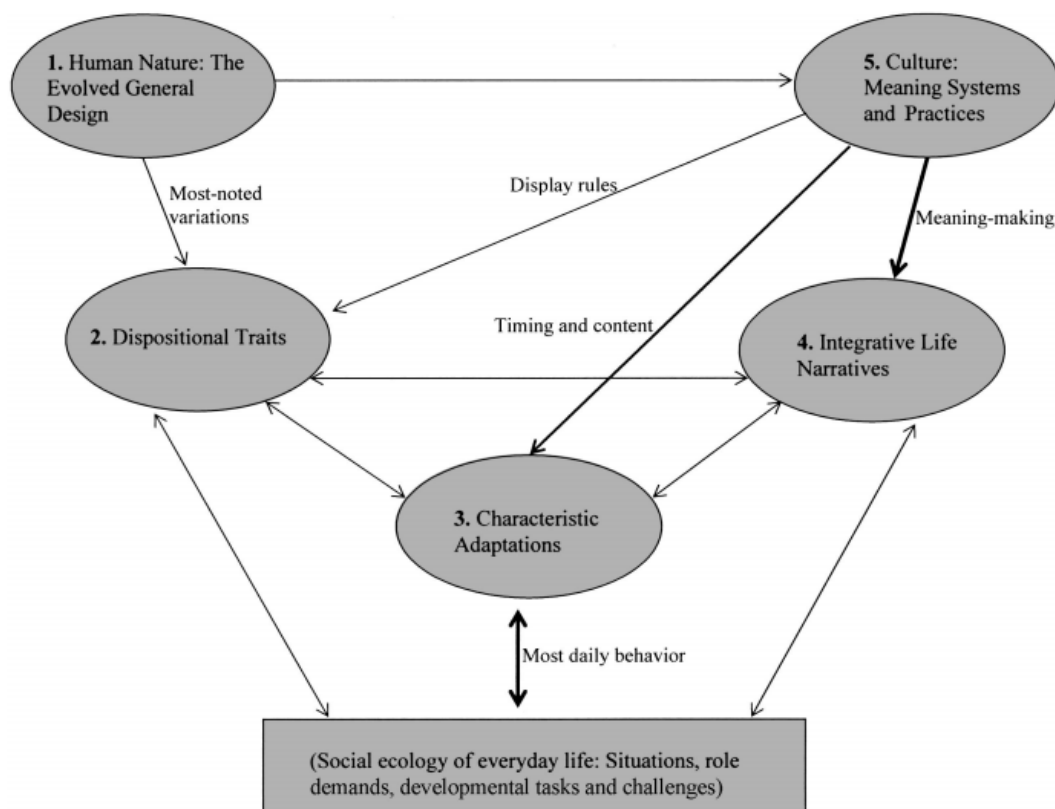
and he has now adopted an approach which views individual differences as complexes of traits which combine together to create learning outcomes, In this view, language learner factors are not viewed as being stable but vary across time and situation, and simple linear causal relationships between individual traits and learner outcomes cannot reflect the reality of learning a language.

As a candidate approach consistent with the CDST paradigm, Dornyei (2017) suggests "The New Big Five" model of personality (McAdams and Pals, 2006). This framework consists of the interactions between five principles: *human nature*, which is the evolutionary inheritance of all human beings; the *dispositional signature*, "...broad dimensions of individual differences between people, accounting for inter-individual consistency and continuity in behavior, thought and feeling across situations over time" (p. 207); *characteristic adaptations*. "...aspects of human individuality that speak to motivational, social-cognitive and developmental concerns

(p. 208); *life narratives*, “...life stories or personal narratives that individuals construct to make meaning and identity in the modern world” (p. 209), and finally the *culture* within which an individual exists, which while influencing dispositional traits and adaptations shows its greatest influence in the construction of personal narratives by which people position themselves within their socio-cultural context and through which they construct meaning in their lives. The framework is illustrated in Figure 1, below. As McAdams and Pals, conclude:

“Personality is an individual’s unique variation on the general evolutionary design for human nature, expressed as a developing pattern of dispositional traits, characteristic adaptations, and integrated life stories complexly and differentially situated in culture” (p. 210) .

Figure 1. The New Big Five framework



Source: McAdams and Pals (2006, p. 213)

The use of learner narratives as a source of data is dealt with in more detail below in section 2.2.

In conclusion therefore, although there is now a more than 20-year history to the adoption of complexity theoretic approaches to language and the development of language in second language learners, there has hitherto been scant empirical confirmation that such approaches are valid. Indeed, in seeking to elevate complexity theory to the status of a „meta-theory“ (Larsen Freeman 2017) it is almost as if the applicability of complexity to language learning and to SLA in particular is being removed from the sphere of experimental investigation. This study will however offer some evidence, albeit in a specific and restricted context, that the language learning process is indeed complex and will therefore support complexity theoretic approaches to studying the acquisition of languages by non-native speakers.

2.2. Learner narratives as a source of data

McAdams and Pals (2006) place particular emphasis on the importance of personal narratives which they believe have the greatest effect in distinguishing individuals and allowing them to make meaning of their lives, while at the same time recognizing that common themes across narratives, particularly those of individuals from the same cultural background, can be identified; for instance, the *redemptive self* narrative (McAdams, 2006) which portrays the individual as overcoming adverse circumstances to achieve some elevated psychological or social situation. Moreover, as Bruner (1987) suggested, it is not what actually happens in people’s lives which defines who they are, but what they come to believe:

“...eventually the culturally shaped cognitive and linguistic processes that guide the self-telling of life narratives achieve the power to structure perceptual experience, to organize memory, to segment and purpose-build the very „events“ of a life. In the end, we become the autobiographical narratives by which we „tell about“ our lives.“ (p.15).

Similarly, Barkhuizen (2014, p. 450) hints at the same issue in his description of narrative research in language teaching and learning as “... concerned with the stories teachers and learners tell about their lived and imagined experiences.”

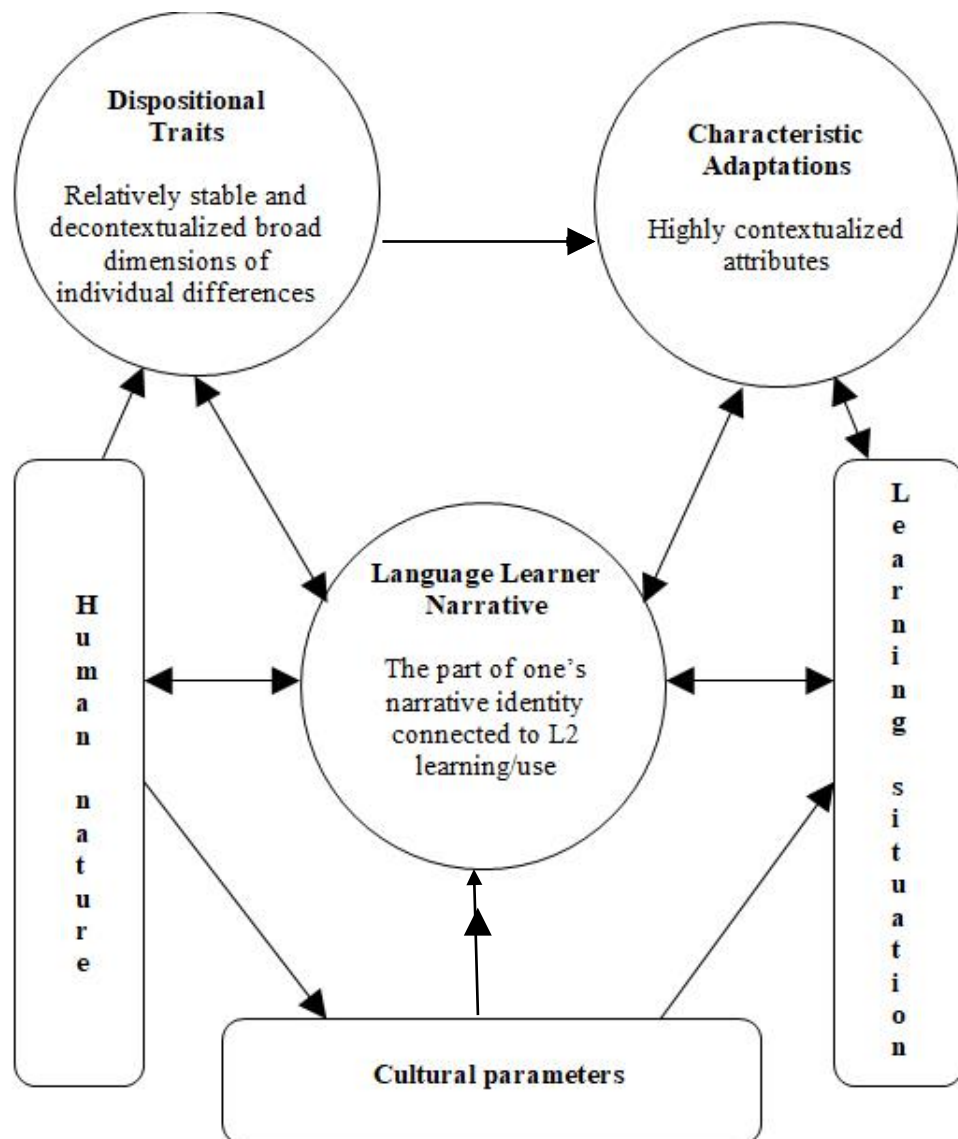
Dornyei (2017) now regards personal narrative as being key to describing individual language learners and Figure 2 shows Dornyei and Ryan’s (2015)

adaptation of McAdams and Pals' framework. He notes that whilst there have been recent efforts to use narrative inquiry as a research methodology, the concept has not hitherto been used as a way of describing individual differences in L2 learners and particularly as a tool to establish a learner's "...explicit identity concept." (p. 105) or L2 narrative identity, which covers both past learning experiences and is responsible for constructing future language learning goals.

The diagram below (Figure 2) depicting the Dornyei (2017) framework was an adaptation of the earlier diagram appearing in McAdams and Pal's (2005) paper outlining the New Big Five model (Figure 1) and is different from it in a number of respects, notably that the McAdams and Pals model sought to demonstrate the way in which the New Big Five parameters influenced and were themselves influenced by "the social ecology of everyday life: situations, role demands, developmental tasks and challenges" (p. 213), the implication being that this social ecology was the *outcome* of the operation of the New Big Five.

In Dornyei's (2017) framework, social ecology is replaced by learning situation which is clearly no longer seen as an *outcome* and the central feature of the framework is language learner narrative which appears to take on the *outcome* role rather than being a factor as envisaged by McAdams and Pals. Thus the Dornyei framework seems primarily focused on the learner identity rather than on how and with what degree of success the learner acquires a second language being learned, which would be a more logical analogue of McAdams and Pals' social ecology. Moreover, although McAdams and Pals model allowed for some feedback between integrated life narratives and dispositional traits although noting that these are relatively stable throughout life, human nature was seen as only influencing but not being influenced by any of the other factors. Dornyei's model, on the other hand, allows for language learner narratives to influence human nature which seems highly improbable since that is a biological-based factor, not amenable in a person's lifetime to any change brought about through personal agency. Moreover the framework also allows for an influence on dispositional traits which would at best be very slight and

Figure 2 A narrative-based representation of the psychology of the language learner



(Adapted from Dornyei, 2017, p. 104)

would only operate over long time scales bearing in mind the stability of such traits over all aspects of a person's life. This study will offer an alternative model of how various factors including those featuring in the New Big Five model influence the development of a second language, in the Discussion chapter, which follows the presentation of the study's findings.

Pavlenko (2007) also agrees that learner narratives in the form of diaries, language memoirs or learner biographies and autobiographies, the latter often gleaned from interviews with informants are a valuable source of data and "... provide the

insider's view of the processes of language learning, attrition, and use..." and "... highlight new connections between various learning processes and phenomena...". Her approach is however overtly interpretivist with an emphasis on viewing what is said by the informant through the researcher's own favored theoretical lens, and she tacitly rejects interviews as a source of factual information, stating:

"I do not argue that applied linguists are in the business of determining the „truth value“ of particular accounts. At the same time, they cannot conduct their analyses in a vacuum and treat narrative versions of reality as reality itself."

This study was to a large extent based on eliciting descriptions of the participants' experiences of learning and using English and the narratives thus elicited consisted of a range of recollections, from concrete aspects of their experiences such as the names of the institutions where they learned English and the periods for which they learned through to more abstract facets of their recollections such as their affective reactions to periods of learning and their subjective assessments of the quality and success of those periods. Between those poles there were a broad spectrum of data collected, but in few cases was it possible to validate the „truth value“ of what was recalled. Therefore, in seeking to investigate the factors which influenced the English ability of the participants, the decision was made to accept Bruner's (1987) concept of autobiographical narrative „building“ the events of a life and to consciously avoid viewing the participants' recollections through any form of „theoretical lens“ (Pavlenko, 2007). The aim was to present as far as possible a completely emic account of the participants' experiences and to extract from that account data based on the participants' recollections which could be compared inter-individually. In doing this, the study specifically rejected Pavlenko's interpretivist approach. That approach would seem likely to render the whole process of interviewing and presenting what was said as a largely researcher-centric process. Further, the resulting presentation would be likely to be a distinctly etic rather than emic account of the learners' histories. The study chose rather to respect the speakers' right to present their narratives as they themselves perceive the events to have unfolded. Therefore in approaching the presentation of the data derived from the

interviews, as far as possible the participants own words have been used to represent their narratives. Moreover, their accounts of concrete events have been accepted as accurate or where there were conflicts or inconsistencies, these were clarified by subsequent enquiries.

2.3. Methodological issues in narrative data collection

2.3.1. Grounded theory

The study initially adopted a grounded theory approach to collecting data related to the learners' English language learning and use experiences. Strauss and Corbin (1998) suggest that in a situation where a rich data source is available, the practice of adopting a theoretical background prior to collecting and analyzing data should be avoided to preclude prejudging issues and simply following the patterns already set by previous work in the field. The grounded approach to research suggested by Strauss and Corbin advocates the analysis of data using a method of thematic analysis in which the categories and themes used to classify the data emerge during the coding and classification based on the researchers growing understanding and familiarity with the data, rather than a pre-existing scheme or theoretical approach being adopted. In the early stages of this study this was the approach adopted. Only later when the data had been subjected to an initial thematic analysis when the complexity of the influences on the participant's learning of English became manifest was the CDST perspective adopted.

2.3.2. Retrospective case studies and retrodictive qualitative modeling

Retrospective case studies are defined in The Encyclopedia of Case Study Research as:

"...a type of longitudinal case study design in which all data, including first-person accounts, are collected after the fact. The events and activities under study have already occurred, and the outcomes of these events and activities are known." (Street and Ward, 2010, p. 824). They are a form of longitudinal research where data is obtained both from documentary sources as well as from the first-person narratives of people who were directly involved in or observed events, which have already occurred and which are presumed to have influenced the known outcomes. As Street

and Ward observe, they are more efficient than concurrent case studies, since the researchers can collect data relating to many participants concurrently after the effect on the outcome variables has already occurred without having to wait for that effect to eventuate. They further note that retrospective designs are appropriate for investigating “experiential effects” such as how individuals change over time or how processes which reoccur affect different individuals. However they cite two limitations inherent in the methodology, the so-called *recall effect*, where the informants’ recall of events may be imperfect, leading to the data being skewed or inaccurate, and the possibility of a *spoiler effect*, where the researcher tailors the analysis of the data towards a desired result based on her/his knowledge of the outcome of the events leading up to it. In their critical summary, Street and Ward suggest that:” retrospective case studies are most suitable when the research question focuses on longer term changes taking place in a process, variable, or general phenomenon.” (p. 826) and that despite their limitations, they are a viable alternative to concurrent study designs.

Since tracking participants in a true longitudinal study from primary school to doctoral study and beyond would be impracticable if not impossible, the retrospective case study technique represents a practical approach to obtaining longitudinal data and in this study it was assumed that the participant’s narrative was the best available version of what actually occurred since no documented version of events exists.

As a development of the retrospective case study approach, Dornyei (2017) suggests a methodology termed retrodictive qualitative modeling (RQM) as a means of overcoming the difficulties inherent in collecting longitudinal data. Unlike other methodologies which focus on dynamic processes as they unfold, RQM recognizes that even complex systems have a tendency to arrive at certain obvious outcomes and that by working backwards from such an outcome, one can identify the factors which lead to it and by doing so produce a “retrospective qualitative model of its evolution.” (p.85). Dornyei’s examples of the use of RQM related to studies of student motivation in a classroom situation and the suggested procedure involved identifying particular participants who represented motivation prototypes then conducting semi structured interviews with them to elicit information relating to the factors which affect their

learning of English. From the data collected, the learning trajectories are analyzed by looking at how the factors identified have combined to produce the outcome identified. He accepts that drawing up such trajectories from such varied data may not be easy particularly from the perspective of CDST's focus on "decentralized causality" but concludes that: "...the fact that qualitative research has always involved drawing up holistic patterns and interactions from data segments and fragments offers some hope in this respect.", and further that:

"RQM offers a research template for deriving essential dynamic moves from idiosyncratic situations in a systematic manner. It is an attempt to generate abstractions that help to describe how social systems work without reducing those systems to simplistic representations – it is therefore an attempt to detect and define higher order patterns that are systematic within and across certain classes of complex systems." (p.88)

Further, Dornyei suggests that whilst generalizing results from RQM might be difficult given that those results may be highly context dependent, they might be relevant in similar contexts and that the "self-organizing capacity of complex systems" (p.88) might even render the processes and outcomes identified as being applicable in wider contexts.

A study carried out citing Dornyei's RQM as its methodology and CDST as its theoretical background is described in Irie (2014) and also in Irie and Ryan (2014) in a chapter included in an anthology of CDST-framed studies of motivational issues edited by Dornyei, Macintyre and Henry (2015). The study used the Q methodology which entails ranking statements according to a fixed distribution employing a rating scale. This study involving 19 participants, who were all Japanese university students, ranking 50 statements regarding their attitudes and motivation towards studying abroad. The ranking was based on an 11- point scale (-5 to +5) with distribution constrained by a quasi-normal distribution so that the participants ranking was based on allocating a fixed number of statements to each level on the scale, varying from 2 for each of the extreme levels (-5 and +5) to 8 on the mid-level of zero. The ranking procedure was carried out twice, before the participant's embarked on their study-abroad period and again after 7 months at an interim point in that period and

interviews with the participants were also conducted to provide extra depth to the data. The rankings were subjected to factor analysis on the basis of which the participants were grouped into certain characteristic personas (e.g. *naïve optimist*, *shell shocked doubter*, *confident user*, etc.) and changes were observed between the two points in time at which the data was collected.

Another study employing the RQM methodology was conducted by Hiver (2017) who examined teacher immunity, a concept covering the psychological mechanisms through which teacher's cope with the difficulties encountered in their jobs, among Korean English language teachers. The study initially used focus groups to identify potential archetypes, then collected data with a questionnaire distributed to a sample of almost 300 teachers, which was then analyzed by a two-step clustering procedure with the initial clusters created being tested by MANOVA. The six archetypes which were significant were then further investigated by interviewing 18 teachers, three from each cluster identified from the questionnaire respondents. The data collected from the interviews was then used to validate the clustering and also to identify the development process which had led to the teachers adopting the immunity persona they exhibited, based on four phases identified in an earlier study (Hiver, 2015).

2.4. Research within the CDST paradigm

That study (Hiver, 2015) was also included in the Dornyei, Macintyre and Henry (2015) anthology, which altogether includes 12 studies of motivation in language learning using a CDST framework which were also described by Macintyre et al. (2017) in the Diana Larsen Freeman tribute volume (Ortega and Han, 2017) referred to above, along with a small number of further studies illustrating 12 possible research techniques (including RQM and Q methodology mentioned above) that might be applied in studies guided by CDST. However as Macintyre et al. identify “...developments in epistemology and ontology have so far outpaced developments in methodology...”.

The issue of methodologies appropriate to CDST guided research is also dealt with by Lowie (2017) who recognizes that this field is currently under-developed and the application of CDST to second language teaching as well as the role of human

agency in CDST as it applies to language are areas which need to be explicated. She questions the ability of traditional Gaussian statistics to analyze language viewed as a developmental process occurring over time and suggests that longitudinal qualitative methods employing case studies analyzed using non-linear methods can best identify "...variability, trends and interactions over time." (p.141). She notes however that: "...research within the CDST paradigm is bound to methodological requirements and limitations and that it cannot be used as an explanation of last resort in case traditional methods cannot be used to explain effects noted..

A motivational study of Japanese students within a CDST framework was reported by Piggott (2013), who also reported a second study which whilst not explicitly conducted within a CDST framework adopted a grounded theory approach. The first study was based in interviewing four students from a class preparing them for a study-abroad trip to Canada about their history of learning English with the data derived from the transcriptions and thematic analysis being viewed through a CDST lens. Two themes which emerged from the data with regard to motivation is that it was largely generated outside of the classroom and that it was contingent on circumstances and changed over time. He also noted a tendency for motivation to be stimulated by critical life events. The second study (Piggott, 2015) included five participants who were interviewed on three occasions over a period of approximately two years and the author again concluded that their motivation was often based on critical events which happened to them and that motivation was a sporadic factor with greater relevance to behavioral change than being a force underlying behavioral routine.

Baba and Nitta (2014) investigated "phase transitions" in the writing development of a class of Japanese university students over the course of 30 weekly reflective journal entries written as part of a course in academic writing, from a CDST perspective. The report concentrated on two of the students and analyzed discontinuous changes in their fluency as measured by the number of words written each week in the timed task. They identified at least one significant shift in the writing of both learners within a more general pattern of changes in fluency during the course.

Two reports of longitudinal studies of variability in the use of grammatical morphemes have been reported by Murakami (2016) and Murakami and Alexopolou (2016). The first paper which was published as a “methodological review article” reported on the analysis of variability in the use of morphemes including the plural *s*, the past tense *-ed* and the indefinite article, by learners from different L1 backgrounds using a publicly available database (CAMDAT) of writings covering a 16-level on-line writing course run by EF English First known as Englishtown. The study compared the performance of four generalized models, including both linear and additive and mixed effects models to detect the pattern of the learners’ performance over time and considered the effect of their proficiency as well as their L1 background, and whether their L1 included counterparts of the morphemes studied. The learners’ performance was assessed based on the error tagging by the course teachers which was included in the database. The results demonstrated that the learners’ trajectories were non-linear but certain general patterns which would have been expected, such as that learners from L1 groups whose L1 had an equivalent construction performed above those whose L1 did not share that feature (cf, Pongpaioj, 2007, *infra*) and that more proficient learners outperformed the less proficient. Neither of these findings, however was surprising nor did they suggest that the statistical methods employed which were presumably the motivation for the heading “methodological review article” had been any more successful than traditional statistical approaches. The second paper concentrated on the results relating to the use of the English articles, *a/an* and *the* used *k* mean clustering to track the development of the writers over time again based on the CAMDAT database. They concluded that whilst overall the development showed a horizontal pattern, the overall analysis hid individual differences in developmental patterns which included both U-shaped and power-function curves and that this pointed to the importance of individual level analysis. Notably however the study was not able to offer any explanation for the different patterns observed but suggested that the two most likely explanations were changes in the learners’ internal knowledge and individual variation in learner factors such as aptitude and memory.

In conclusion the studies cited above have drawn on CDST as a theoretical framework while not actually testing the applicability of CDST to language and

language learning, and the range of areas tackled have not been dissimilar to areas tackled in traditional (i.e. non-CDST) studies of language learning (e.g. motivation and morpheme studies), nor have the results produced any findings which have not previously been reported in traditional studies. In particular no studies have been traced which have actually sought to test the assertion that SLA is a complex phenomenon and that CDST is a relevant framework within which to study language development in learners. In fact the application is, in philosophical terms, underdetermined in that there appears to be no evidence that it offers any better framework with which to explain SLA than any of the alternative theories which have been proposed to explain it. The study described herein adopted a specifically empiricist approach to CDST, not accepting it as an à priori framework but using the data collected and its analysis employing traditional methods to test whether the assertion that SLA is a complex dynamic process is sustainable.

2.5. Other notable theories of SLA

The issue of how second languages are learned forms the backdrop against which this study was conducted. The subject has been approached from a number of different directions, including those which rely on primarily neuro-cognitive approaches, through more traditional SLA approaches broadly defined as cognitive-interactionist (Ortega, 2009) which study the effect of external variables on internal language processing and language production, to models which draw primarily on socio-cultural theory to explain SLA. However, although there are many competing theories of how second languages are learned there is currently no widely accepted model largely because the field has inter-disciplinary roots which do not lend themselves to the acceptance or accommodation of competing theories (Ortega, 2009). There have been a number of book-length treatments of SLA theories and a review of one of the more recent, VanPatten and Williams's (2015) *Theories of Second Language Acquisition*, suggest that there are at least a dozen actively pursued theories. Some of the more prominent of those will be reviewed below.

At the neuro-linguistic end of the spectrum, the procedural-declarative model (Ullman, 2005) has a broadly cognitive approach, seeing language learning as being similar to other types of learning, with a distinction between declarative memory

associated with the learning of new information being primarily used to hold lexical information which is subject to conscious recall, while procedural memory is used to hold information about structural aspects of language which are not directly accessible to conscious review. The theory identifies areas of the brain which clinically based methods of study have found to be active during the processing of language and the model posits that certain neuro-transmitters are implicated in forming new memories, therefore potentially offering chemical approaches to enhancing the acquisition of language. The model also identifies the roles of gender and age on learning as well as the effect of different modes of learning, broadly suggesting that unstructured training, for instance during language immersion may be more effect than structured classroom-based learning in encouraging the acquisition of a native-like grasp of grammar.

Within the broad framework of cognitive-interventionist approaches, perhaps the most widely known and discussed model is Krashen's (1981) input-based theory of language acquisition through exposure to comprehensible language input just above their present level of the learner's competence. The model equates the largely unconscious process of language acquisition by which children learn their mother tongue with SLA and contrasts acquisition with the conscious learning of grammatical rules e.g. in language classrooms where methods such as rote memorization or grammar-translation are employed, which the theory suggests could not lead to language acquisition, unless the language being learned was used as the medium of instruction, thus constituting comprehensible input. However, it could contribute to a language monitor in more advanced learners who could use memorized knowledge to monitor and correct their natural output.

Krashen's model has been criticized on a number of grounds, notably because of a general lack of precision in the use of terms such as *acquisition* and *learning*, and *implicit* and *explicit* (McLaughlan,1987; White, 1987) and that because of this, the model is untestable and therefore unfalsifiable (Larsen-Freeman and Long, 1991). Specific aspects of the model have also been criticized, particularly the equating of learning in children and adults (Bley Vroman, 1989; Gregg, 1984; McLaughlin, 1987; Schachter,1988), the distinction between acquisition and learning (Gregg, 1984; Gass

and Selinker, 1994) and the relevance of the language monitor in actual output (Gregg, 1984; McLaughlin, 1987). Further, Ellis (1990), Swain (1993) and Swain and Lapkin (1995) question the exclusive role of input in learning a language with Swain highlighting the importance of language output in communicative situations to reinforce learning and Ellis noting the relevance of teaching practice and methodology to learner outcomes.

In addition to Krashen's input model and Swain's output hypothesis mentioned above, other notable theoretical models include Long's (1996) interaction hypothesis which while agreeing with Krashen on the importance of input in language learning postulated that it is by the process of negotiation of meaning during interaction that learning occurs, and Schmidt's (1990) noticing hypothesis which, drawing on ideas from cognitive linguistics suggested that in order to acquire language the learner must consciously register what is being learned in order for it to become a part of the learner's procedural memory. Also working within the framework of cognitive linguistics, which as noted above, views language learning as a similar process to other forms of learning involving a progression from holding information as declarative memory through converting it to procedural memory and finally to automatizing the production of the information, Pienemann (1998) has proposed processability theory as an explanation for how second language learners go through stages of restructuring their interlanguage to arrive at an accurate form of the target language.

A further theme in theoretical approaches to SLA is those based on socio-cultural theory which views language as a broader aspect of culture. These theories draw on post-structuralist themes which identify culture as being the primary means by which knowledge is held as against cognitive approaches which view knowledge as essentially residing in the brain of the individual. Foremost amongst these approaches are those based on and extending the work attributed to the Russian child psychologist Lev Vygotsky who based his ideas on three broad principles: that human consciousness is primarily social, not biological in origin, that human activity is mediated by tools such as language, and that in analyzing human activity the units analyzed should be holistic not atomistic. The original exposition of the relevance of

socio-cultural theory to SLA was by Wertsch (1985) in a longer work dealing with Vygotsky's ideas, but perhaps the best known work dealing with the relevance of Vygotsky's idea has been by Lantolf. In a summary of the theory Lantolf, Thorne and Poehlen (2015) explain how mediation between humans and their environment is achieved through the use of tools, both physical and psychological, which allow humans to regulate objects, other people and themselves. Language is an important tool not just because it allows communication with others but also because it allows humans to self-regulate by interpreting, categorizing and planning activity rather than simply acting as biology dictates. This leads to the process of internalization by which actions in the social sphere become part of a person's psychological repertoire during the course of their development. They introduce the important concept of the zone of proximal development, representing the difference between the developmental progress a person can achieve alone and that which they can achieve with adult or expert assistance. This concept has been central to the interest in Vygotsky's ideas as it appears to underlie much of the theory upon which development through guided learning rests. Lantolf et al. also detail the genetic method as a technique of tracing development over time rather than seeking to analyze a number of snapshots during development. Interestingly, they also recognize parallels between Vygotsky's ideas and those of neuro-cognitive theories (see Ullman 2005), seeing similarities between the declarative-procedural memory system dichotomy and the related ideas of explicit and implicit learning with Vygotsky's ideas of spontaneous (i.e. implicit) and scientific (i.e. learned) knowledge.

Three further concepts that fall under the rubric of socio-cultural approaches to SLA are language socialization, communities of practice (COP) and social identity. Language socialization was a concept introduced by Scheffelin and Ochs (1986) to describe how cultural development and language developed hand-in-hand in children. This idea has been extended to describe how language plays an important role in the way that immigrants and other minority groups are constrained and aided by their abilities in the majority language of the community in which they are becoming socialized (Duff, 2007). The notion of COP, that is groups within which people operate or to which they aspire or belong flows naturally from the idea of language socialization and has proved to be a useful descriptive and analytic tool to examine

how situated learning occurs in formally or informally constituted groups in which people participate (Lave and Wenger, 1991 cited in Smith, 2003) and how legitimate peripheral participation leads to new members of communities of practice learning or becoming familiar with the practices of the COP. Language clearly plays a key role in this and the concept of situated learning has great relevance for immigrants and language minorities aspiring to become accepted in communities with which they wish to become identified (Smith, 2003).

This leads finally to the idea of language as a tool for creating social identity which Norton Pierce (1995) notes is multiple, a site of struggle and subject to change over time. She argues that the learning of a second language represents a cultural investment and that a model based on Bordieu's (1977, cited in Norton Pierce, 1995) idea of the accumulation of social capital is a better representation of how an individual's attitude towards a language contributes to their ability to learn, than Gardiner and Lambert's (1972) concept of instrumental and integrative motivation.

These ideas together, language socialization, COP and social identity have been largely studied in contexts such as the USA and Canada where immigrants struggle to gain acceptance in mainstream society, and on the face of it seem to have little relevance to the learning of English in a Thai context where Thai is the majority language and where English has the status of the minority language. However the relative absence of these factors in Thailand may be a powerful reason why generally, Thai people do not master the English language and could be more potent factors than those inherent in the often criticized performance of the Thai education system.

Finally, however, it is worth stressing again that none of the aforementioned theories, nor others which have been proposed enjoy universal support among linguists nor have any received universal empirical support suggesting that none represent a "final theory" to which all would subscribe. Further, as noted by Ortega and Iberri-Shea (2005) empirical research has tended to concentrate on cross-sectional studies and Norris and Ortega (2000) were able to trace more than 250 such studies between 1980 and 1998 in their meta-analysis of the effectiveness of teaching methods. However as noted above, CDST posits that language development is something which develops across time and the current study, whilst not longitudinal

in its data collection, takes a longer term view of the language learning process of the Thai academics who participated in the study and examines how their long-term experiences have shaped the development of their English abilities and contributed to the difficulties they have in using English in their academic activities.

2.6. Age effects in L2 learning and the critical period hypothesis

Over the same period that SLA has been the subject of such intense research attention, the question of whether the age at which learning commences affects the eventual level of attainment has also been frequently discussed and there has been much attention given to whether a critical period exists during which successful attainment of near-native-like performance can be achieved.

In a recent review article, Birdsong (2018) considered how variability in L2 acquisition is affected by age and to what extent this effect is controlled by neural plasticity. As Birdsong notes, neural development, such as the „pruning“ of synapses and the myelination of neurons which occur during neural maturation have been posited to give rise to critical periods (CPs) during which “...experiential factors can interact with biological mechanisms to determine neurocognitive and behavioral outcomes” (Birdsong, 2017 cited in Birdsong, 2018). As is well established in L1 acquisition, early neural development gives rise to different stages in language development, which, while flexible in duration, occur in a relatively fixed although overlapping sequence. Birdsong also notes that bilingual language development generally occurs more slowly than monolingual development and also that true bilinguals never attain completely monolingual-like performance in either language due to inter-language interactions. Moreover, for L2 learners who commence learning after the end of a general CP for language acquisition first suggested by Lenneberg (1967), true native-like performance is commonly believed to be impossible or, at best extremely rare. However there is no general agreement as to whether increasing the age of onset of acquisition (AoA) causes a gradually decreasing decline in ultimate attainment followed by a leveling off to a floor (a „stretched L“) or whether there is an age range within the CP that allows an early „plateau“ of attainment which then falls off after the passing of the CP (a „stretched 7“), or a combination of the two patterns (a „stretched Z“) or indeed a steady decline without a plateau which never

reaches a floor. Moreover, because of the overlapping nature of critical periods in early language development, there are also likely to be differences in how different modalities of language perception and production are acquired by L2 learners, with the acquisition of phonetic qualities diverging as early as the first year of the learner's life, whereas the divergence in morpho-syntactic attainment from monolingual performance has been noted anywhere between 7 and 27 years of age and is likely to be highly influenced by both internal factors such as motivation and social factors such as the need to integrate in a new culture, as well as by the degree of exposure to the target language.

Much of the research which has been conducted on the effect of AoA and CPs on SLA has taken place in immersion contexts where AoA can generally be taken to occur when the learner arrives as an immigrant into a culture where the L2 is the dominant language. One of the most widely cited studies into acquisition under such circumstances was Johnson and Newport's (1989) study of the acquisition of English by Chinese and Korean immigrants to the USA and particularly how their sensitivity to grammatical errors was affected by their AoAs. They detected differences based both on the participant's success in a grammaticality judgment test and in neural responses to sentences containing structural anomalies which varied dependent on AoA and for learners up to the age of 15 the decline suggested a linear relationship with a correlation coefficient of -0.87 between AoA and their ultimate performance. However, later learners experienced greater difficulty in detecting structural errors and their performance was more or less random and not significantly correlated with AoA ($r = -0.16$) suggesting a „stretched L“ pattern of development with the critical period ending in mid-adolescence. However, they found that the relative difficulties experienced in different areas of structure were correlated with AoA and concluded that the effects were more significant than those of the L1 on SLA. Most notably, difficulties with the use of determiners and noun pluralization produced the highest correlations with age of first exposure, while basic word order and the use of the *ing* morpheme produced the lowest. Johnson and Newport's data has been subsequently reanalyzed on at least two occasions (Elman, 1996; Vanhove, 2013, both cited in Birdsong 2018) with both researchers disputing their conclusions, and the study was replicated by Birdsong and Molis (2001, cited in Birdsong 2018) among Spanish L1

English learners, with the pattern of decline in attainment based on AoA resembling a stretched 7 with no final floor in the decline in attainment being apparent until after 27 years of age.

Birdsong (2018) cites a number of other studies which have been conducted including a meta-analysis of studies of the effect of AoA on grammar acquisition by Qureshi (2016), who traced 80 studies of which 26 were included in the meta-analysis. Of these, 20 were conducted in L2 contexts with the remaining six being conducted in foreign language (FL) contexts, i.e., where the target language was being learned through formal instruction with no substantial external or naturalistic exposure to the target language. The studies were analyzed based both on inter-group (older vs younger AoA) comparisons with the outcome measured by effect size, and on correlations between AoA and attainment in the 20 studies where such data was provided, of which only four were conducted in FL contexts. The findings showed that there was a difference in the comparisons of outcomes for the L2 and FL studies in both the inter-group and correlational studies, with, in both cases, the FL studies showing either no effect from the age at which learning commenced or an effect in favor of later-starting learners. For the inter-group comparisons of L2 learners, there was a fairly clear pattern of effect sizes in favor of younger against older AoA learners (Cohen's d : 0.68) while for the FL learners there was a very small negative effect in favor of older-starting learners (Cohen's d : -0.09). These results were borne out by the analysis of correlation outcomes which were based on Fisher's z transformations (Z_r) of Pearson product moment correlation coefficients, with the L2 studies producing an average Z_r between AoA and level of attainment of -0.52 and the FL studies producing a Z_r of 0.02 (i.e. a negligible effect in favor of older learners).

Birdsong (2018 p. 6) notes in respect of non-native like attainment that:

“The underlying logic is that language learning is biologically destined to be successful if begun during a critical maturational epoch in early childhood, and that the failure of late learning to attain native-like competence is the inevitable result of having passed a critical period of neural plasticity”

and this seems to be particularly the case for learners in FL contexts where their exposure to the L2 may be restricted to classroom situations. Huang (2015) conducted a review of research into such contexts with particular interest in whether there was support for an early vs late start to L2 learning in line with the general finding in L2 contexts of higher levels of achievement resulting from younger AoAs. She traced 50 studies conducted in FL contexts across various modalities in the previous half-century, of which 42 fell within the study's criteria and were included in the synthesis of results. The synthesis broke the studies down into three groups: the first, ten studies of short-term outcomes from single time-point laboratory studies with or without pre-training, produced only two which showed an advantage for early-learners, whereas five produced an advantage for late-starting learners with three showing no difference based on age of commencement of learning.

In the second group, 19 studies of mid-to long-term outcomes from a retrospective single time-point, 11 studies produced consistent results across modalities with older-starting learners outperforming younger-starting learners in five studies, with only one study showing an advantage for early learners, and five studies producing no difference between the two. In the remaining studies, different modalities produced different results with early learners showing some advantage in speech perception and production including pronunciation and in one study in listening comprehension, but generally older-starting learners out-performed early learners.

In the final group consisting of 13 multiple point studies focusing on both long- and short-term outcomes, 12 studies showed no advantage accruing from early learning with the exception of a limited beneficial effect on phonological perception or production, and in six studies there was a "catching up" effect noted with early learners reaching late-learners' level of achievement at the final data collection point. Only one study in this group found an advantage for early learners over late-starters and even in this study (Low et al., 1993 cited in Huang, 2015) this result was only found for one of the two L2's studied (German) with the other (French) producing an advantage for late starters. Overall therefore Huang's synthesis seems to suggest that far from an advantage being derived from an early commencement of learning an L2

in an FL context, later learners appear to often achieve better outcomes with the possible exception of oral/aural modalities where early learners may obtain some benefit.

Finally, recently published results from a major study conducted using an on-line grammar judgment test and demographic survey conducted by Hartshorne, Tenenbaum and Pinker (2018) involving almost 670,000 participants suggest that there is a CP for learning grammar but that it extends until late adolescence. The study isolated large groups of monolingual English speakers (246,497) immersion learners including simultaneous bilinguals (45,067) who had either learnt English along with another language from birth or had spent at least 90 % of their lives since first exposure to English in English speaking environments, and non-immersion learners (266,701) who had spent no more than a year and less than 10 % of their lives since first exposure living in an English speaking environment. By studying the results of these groups on the grammaticality judgment test and grouping the participants by age of first exposure and length of exposure they were able to model the effect of age of first exposure to rate of learning and found that the best fitting model with an R^2 of 0.89 showed that the learning rate for grammar did not begin to decline until 17.4 years of age which would mark the end of the CP for learning languages. They also assessed how age of first exposure affected the level of ultimate attainment since as they note, a monolingual or simultaneous bilingual will enjoy a longer period learning at the highest rate than will someone who begins learning later within the CP. Based on the period at which monolinguals took to reach ultimate attainment (30 years) they found that for immersion learners who started learning up to an age of 10-12, there was no significant detriment in the ultimate attainment level which could be reached, but thereafter the ultimate attainment dropped steeply. The equivalent age (9) was lower for non-immersion learners and it was also notable that for non-immersion learners there was no advantage found for early-learners and the level of achievement for those who commenced learning at 9 was slightly higher than that for those who started learning at 4 which is in agreement with Huang's (2015) findings. Moreover the mean levels of attainment were found to be lower for simultaneous bilinguals than for monolinguals and lower again for other immersion learners with non-immersion learners achieving the lowest levels of attainment.

Since the result of their study with regard to the end of the CP was at variance with the results of many previous studies, Hartshorne et al. used their much larger data samples to construct sub-samples of equivalent size to those used in other experimental studies (e.g. to simulate Johnson and Newport's (1989) study, a series of random sub-samples of 69 participants were generated with similar demographics to their participants) and these were used to define error ranges for those sample sizes and it was found that all the previous studies results fell well within ranges where their findings could have been generated due to random factors in the sample. They point out that, as Vanhove (2013), suggested, to equate ultimate level of attainment with age of first contact with a language, sample sizes must be in the range of thousands and Vanhove also questions the statistical methods which have been used in most previous studies to support findings of the existence of CPs.

Hartshorne et al. (2018) therefore note that although some previous studies have suggested that CPs close at much earlier ages (e.g. Johnson and Newport (1989) suggested 7) their findings were almost certainly based on samples which were too small for those findings to be robust. Therefore, explanations for CPs based on physical or cognitive developmental stages which have been found to occur around puberty, such as early synapse pruning or neuronal death, hormonal changes or changes in episodic memory or social cognition, all of which have been proposed as the mechanism behind the closing of the CP for language learning, cannot be correct. Hartshorne et al. cite three possible mechanisms consistent with the closing of the CP around late adolescence: social and cultural factors arising at that time such as the move from education to work or higher learning, interference from the L1, provided that was non-linear, and late-occurring neuronal maturation particularly in the pre-frontal cortex which has been widely attested in neurological studies to extend well beyond adolescence.

Finally Hartshorne et al. (2018) while accepting that there are different effects on language learning from different L1s citing Schachter (1990) as authority, their study found no consistent effect between L1s or language groups based on ultimate level of attainment although they accept that their study's sampling of different

languages/groups was not even enough or in some cases sufficiently large to produce robust results.

2.7. Errors in second language learning

The history of the treatment of errors in language learning, and SLA in particular can be traced back to the influence of the behaviorist school of psychology, who regarded language as a habit acquired in infancy in the case of the mother tongue, or later in the case of SLA, and in an effort to find pedagogical methodologies for the teaching of second languages, founded the concept of contrastive analysis, whereby two languages were compared, grammatical point by grammatical point, to identify their similarities, and more importantly, their differences, which it was predicted would give rise to errors in SLA. As Fries (1945, cited in Dulay and Burt, 1974 p.97) wrote:

“The most effective materials are those that are based upon a scientific description of the language to be learned, carefully compared with a parallel description of the native language of the learner”

The technique was also described in Lado (1957), who noted the tendency for the mother tongue of a learner to influence the learning of a second language: “...individuals tend to transfer the forms and meanings, and the distribution of forms and meanings in their native language...” (p. 2). The phenomenon came to be known as language transfer, but is also often described as mother tongue (or L1) interference.

Contrastive analysis in its original formulation did not require the observation of actual speakers to arrive at its predictions, (e.g. see Fisiak, 1980, cited in Gass and Selinker, 1994a: “Contrastive analysis is concerned with...the comparison of two or more languages in order to determine the similarities and differences between them.”) and it became fairly obvious during its heyday that it was actually not very successful in predicting errors nor at explaining those errors which were actually observed in people learning a second language (Dulay, Burt and Krashen, 1982, James, 1998). This failure combined with the waning popularity of behaviorist theories culminated in the publication of *The Significance of Learners' Errors* (Corder, 1974) which argued that only by studying the systematic errors and mistakes which learners made,

could any cause be attributed to those errors and that the planning of pedagogy should follow from the analysis of actual errors rather than an à priori comparison of the learner's L1 and L2.

The concept of error analysis (EA) swiftly became the accepted paradigm and there has been a wealth of research of learners' errors in both L1 acquisition and SLA within the EA model and the field continues to attract research interest. However, by the mid 1970's the paradigm of transitional competence (Nemser, 1974) and the idea that a learner of a second language develops an idiosyncratic but systematic idiolect dubbed an interlanguage (Selinker, 1972) had also become widely accepted.

With these changes came a shift in attitude to error as something which needed to be eradicated, to one where error became viewed as something necessary as a part of the learning process (see, for example, Dulay and Burt, 1974). Further, the idea that the learner's native language became transferred to or interfered with learning became highly suspect (Dulay, Burt and Krashen, 1982) the preferred view being that SLA was a developmental process similar in nature to the acquisition of one's mother tongue and that errors occurred as part of that natural developmental process much as children make errors before they become proficient speakers. An alternative or complementary explanation of errors offered by Richards (1974) was that many learners' errors have their source in the materials used by teachers to model the target language, which could in certain circumstances induce errors. Nevertheless the source was largely unrelated to the influence of the learner's mother tongue.

However, the rejection of the mother tongue as a major influence on SLA quickly gave way to a realization that L1 influence could not be ignored, and both Corder, (1994) and others who had been at the forefront of the reaction to CA soon adopted the stance that the learner's mother tongue was a significant factor in L2 learning. As Gass and Selinker (1994a. p.7) wrote:

“There is overwhelming evidence that language transfer is indeed a central phenomenon that must be considered in any full account of the second language acquisition process.”

And Selinker and Lakshmanan (1994, p.199) in the same volume also suggested that for errors to become fossilized, i.e. become permanently established in a learner's interlanguage, although other factors may operate, the influence of the mother tongue was "a necessary condition". Even Nemser (1974, in Richards, 1974, p.57) noted the influence of the mother tongue in L1 homogeneous groups to be "systematic and widespread", suggesting that the development of contrastive analysis could benefit from the study of learners' approximative systems. Thus a weak version of contrastive analysis developed, which was no longer seen as an *à priori* exercise in predicting problems but was instead a tool for explaining, *à posteriori*, differences noted between L2 learners' language and that of native speakers (Gass and Selinker, 1994b).

EA continues to be a well-used technique of analyzing language production and the subject has its own published bibliography, which in its latest edition (Spillner, 2017) identifies more than 6000 studies. The genesis and conduct of EA is also set out at book length in James (1998) and, the subject was usefully reviewed by Sompong (2014) who identified a number of recent studies conducted in Thailand. These are included in a wider analysis below which is preceded by a more general review of studies conducted which focus on the outcome of formal English education in Thailand.

2.7.1. Recent EA and related studies in Thailand

Perhaps the most common method of assessing English ability and achievement has been through the use of test results and there have been a number of studies which have considered the English ability of Thai students by analyzing their performance on tests. In fact national statistics of student achievements in national O-net examinations are published annually by the National Institute of Educational Testing Service, including the results in the English section and Bupphanhasamai (2012) cites the 2010 figures showing average achievements between 16 and 21 % for students at primary and secondary level as offering evidence of the ineffectiveness of English teaching in Thailand. A similar conclusion was reached by Prapphal (2002) who compared the Scores of ASEAN students in the TOEFL between 1993 and 1996, and 1999 as published by ETS, noting that the average score for Thai students was less

than all other ASEAN nations apart from Laos. That study also considered the scores achieved by Thai students in the CU-TEP examination used as a gatekeeping device for entrance to graduate programs, finding that most Thai students were unable to reach the required marks for entrance to Masters and PhD programs. Finally and as mentioned above, in the latest EF EPI survey (2017) Thailand was ranked 53rd out of 80 non-English speaking countries with a low proficiency level (equivalent to the lower band of the CEFR B1 level) although this was an improvement on previous years in which Thailand has been ranked as having a very low average proficiency level.

There have been a large number of studies of writing skills among Thai learners of English with a smaller number focusing on users of English outside of education. An extensive review of Thai studies into aspects of EFL writing research in Thailand was carried out by Chuenchaichon (2014) who identified 48 studies conducted between 2004 and 2013 of which nine dealt with writing errors, although of those only four were studies which could strictly be said to be of EA, and Hinnon (2015) also reviewed EA studies in Thailand, citing nine, split into three groups, comprising grammatical-lexical errors, L1 interference errors and errors in writing organization. Kaweera (2013) also identified different error types commonly found in English written by Thais, classifying errors under the headings of inter-lingual interference (lexical, syntactic and discourse interference) and intra-lingual interference (false analogy, misanalysis, incomplete rule application, exploiting redundancy, overlooking co-occurrence restrictions, hypercorrection and overgeneralization) largely following Richards' (1970) classification. In fact the present researcher has been able to identify more than 30 EA studies conducted in Thailand since 2000, in addition to the review articles cited above, and these are detailed in Table 1 in Appendix 1. This list is not intended to be exhaustive and only includes studies which conducted generalized analyses which extended to, though were not necessarily restricted to, grammatical errors. Thus, studies which looked only at particular areas of grammar are excluded, notably Tawilipakul's (2003) study of English time markers, Pongpairoj's (2007) and Nopjirapong's (2011) studies of article errors, and Yodchim and Gibbs (2014) study of inflectional morphemes., Further, of the 33 studies listed in Table 1, Five were conducted using high school

students' writing, 23 were conducted using work by undergraduate students from universities or higher education institutions, while only three involved postgraduate students. Further, only two considered writing in a non-educational context being Hutyamanivudhi's (2001) and Chakorn's (2005) analyses of business correspondence. Moreover the only two studies traced which have been conducted in Thailand analyzing journal articles written by Thai academics (Jaroongkhongdach et al, 2012 and Amnuai and Wannaruk, 2012) have also been excluded from Table ... since their scope did not extend to grammatical aspects of the authors' work. Jaroongkhongdach et al. concentrated on the quality of articles, based on five aspects across the literature review, methodology and discussion sections of 100 papers published by Thai authors in the field of English language teaching (ELT) and compared them with 100 articles in the same field published by non-Thai authors. They found significant differences in the quality of the articles based on assessing categories as low, medium or high, with 15 of 17 categories found to be significantly higher for the articles produced by non-Thai authors. Interestingly, the study specifically "...ignores the process of conducting, writing up, and publishing research..." (p. 200) and rejects Gosden's (1992) finding of the relevance of linguistic issues as a basis for the rejection of articles by journal editors, suggesting that writers in Thailand would have access to proofreading or editing facilities if necessary and that for their selected authors who were all ELT professionals their English should be at an acceptable standard.

Amnuai and Wannarak (2012), on the other hand, analyzed the rhetorical structure of the discussion sections of 30 papers relating to applied linguistics published in English in peer reviewed Thai journals based on move analysis and compared them with 30 papers published in international journals. They referred to a number of previous studies based on the analysis of different sections of papers published in Thailand with those in international journals but again there was no attempt made to analyze the language content of the articles.

Table 1 shows the major areas identified in the 33 studies listed as giving rise to errors (5 % or more of the total number of errors, or as identified from the abstract to the article or its citation in other work). Summing the areas identified shows that the largest number of references (25) were to errors relating to verbs, verb tenses or

verb forms, while errors in the use of prepositions (18) and articles and determiners (18) were the next largest categories. Other major categories of errors identified were: fragments or the ellipsis of elements of sentences (14) sentence structure or syntax (13) nouns including plural and singular forms (14), subject/verb agreement (14), lexical choice (12), mechanical errors (13) and word order (8). Some areas much less frequently identified were pronouns, adjectives and word form (4 references each) conjunctions and subordinators (3) and adverbs (2). Whilst the figures arrived at are not intended as an accurate meta-analysis of the findings of the studies, they do give a broad indication of the areas which the studies identified amongst their participants, most of whom were students at the time they took part in the studies. Further, in considering the methodologies used in these studies, it is notable that the main method adopted in presenting findings was by summing the errors identified in each participant's work to reach overall figures for errors per classifying group, and none of the studies attempt to look at individual patterns of errors among the participants. Moreover, the numbers of errors per classifying group where those are based on parts of speech do not generally take into account the frequency of occurrence of that part of speech in the participants' work, so that the relative frequency of errors based on the number of occurrences of that part of speech cannot be compared.

In addition, it is notable that the causes of the errors identified are largely posited either as being partly or wholly L1 effects (24 studies) and/or being based on Richards' (1970) classification referred to above (overgeneralization, ignorance of rule restrictions or incomplete application of rules and the creation of false hypotheses – 12 studies). Other causes referred to include carelessness, translating from Thai and poor language skills.

2.7.2. Recent EA studies outside of Thailand relating to English academic writing

Although the field of academic writing is a frequently studied area of language research, there appears to have been little recent research interest in the language-structure content of academic papers and none traced relating to journal articles in the course of preparation. Rozycki and Johnson (2010) analyzed „non-canonical“ grammar in 14 engineering papers published between 2006 and 2008, which had

received an *IEEE Transactions* „Best Paper“ award. The papers were selected based on the authors appearing to be non-native speakers of English although as was noted, three of the papers had co-authors who were in fact native English speakers. The term *non-canonical* was used in preference to the word *error* and judgments of usages falling into this category were based on whether they were at variance with those included in a well-known grammar reference book. The rate of occurrence of non-canonical usages found was relatively low with the highest rate of occurrence in a paper being one per 336 words and the lowest being zero. Overall in the papers reviewed, only 132 instances of non-canonical usage were recorded out of a total word count of almost 120,000 words, a rate of a little over 1.1 per 1000 words. The main types of non-canonical usages found related to article use (35.8 %), noun-verb agreement (18.9 %), the use of an incorrect verb forms (15.9 %), preposition use (11.4 %) and noun use (9.8 %). The researchers commented on the fact that in only one instance did the authors report being asked by the journal to have a native English speaker check the language content of the article and that even after that check, the paper concerned had one of the highest rates of non-canonical usage, but that did not prevent its subsequent publication. Further, Rozycki and Johnson were the only study traced to have looked at inter-individual variation in the occurrence of „errors“ although detailed findings were not presented, simply referred to in the discussion of the results.

2.8. Research aims and questions.

The aims of the study were to establish the main language structural areas which give rise to NCU in the writing of the participating sample of authors and in a sample of their speech and to establish if that is systematic, demonstrates discernible patterns¹ and is in agreement with the results found in previous studies in Thailand. Further the study aimed to try to find associations between the level of English of the participants as indicated by the individual results of the analysis of their writing and speech and aspects of their experience of learning and using English as well as to their situated context within a Thai language and socio-cultural milieu.

Therefore, the specific research questions addressed by this study were:

1. What general and individual patterns of non-conventional language use emerge from the analysis of papers written in English by Thai academics for publication, and in their oral recounts of their experiences of learning English?
2. How has the participants' English been shaped by the English learning experiences they report?
3. What other factors could account for or have contributed to their English?

The research findings were also applied to consider whether CDST is an appropriate framework for studying the learning of foreign languages and what the implications of the findings are for studies conducted within the field of SLA, as well as for the teaching of English in Thailand with particular regard to the needs of academics to write and publish in English.

¹ *Pattern* is used in its sense of: "A regular and intelligible form or sequence discernible in the way in which something happens or is done" (Oxford Dictionaries, 2018).

3. Methodology

3.1. Source of data and selection of participants

The main source of the language data presented in this thesis was a corpus accumulated by the first author consisting of manuscripts edited by him while acting as a consultant for the publications clinic operated the Research and Development Office (RDO) of the Graduate School at Prince of Songkla University. Most of the work was directly sourced from the RDO with a small number of papers having been edited as a result of direct contact with the authors concerned. The editing of the papers was therefore not a part of the study, but was conducted in most cases before the study commenced and its purpose was not directly related to the conducting of the study. At the time of the commencement of data collection in early 2016, the corpus consisted of 126 manuscripts but this figure had grown to over 200 by the time data collection was completed at the end of 2017. The sample of manuscripts analyzed in the study was drawn from papers prepared both prior to and during the study period and altogether spanned the 8-year period 2010 – 2017.

The papers which formed the corpus covered a wide variety of subject matters and academic disciplines but since generally the papers were edited without direct contact with the authors, in most cases the researcher had no access to personal information relating to the authors other than their names and faculty affiliations. Therefore in selecting the papers to be analyzed it was not possible to control for demographic factors and the only sampling criteria employed were based on seeking to ensure that as many as possible of the faculties etc. from which the papers had been submitted were represented in the sample of papers analyzed. In this, the sampling procedure was reasonably successful with papers being analyzed from 15 different faculties at all five of PSU's campuses in southern Thailand with work also being included from writers employed at three other universities, all of whom had either previously studied at PSU as post-graduate students or who had previously been faculty members at PSU. However, the work presented in this paper does not include all of the papers which were analyzed which actually numbered 40, but is restricted to the 26 which met the final criteria of the analysis, which required that:

- The author was Thai

- She/he was the sole or main author of the work.
- None of the co-authors were native or near-native speakers of English, nor were they nationals of countries where English was widely spoken.
- There had been no other substantial editing of the work particularly by non-Thai editors
- The work had not been translated from a previously published manuscript in Thai by someone other than the author.
- The author had agreed to be, and had been interviewed after the analysis of their work in relation to their experience of learning and using English.

Moreover, the shape of the final sample was to a large extent determined by the willingness of authors to allow their work to be included in the study. The corpus included multiple works from a number of authors and the choice of papers was made to ensure that no author was represented more than once in the sample either as a principal or co-author. In all more than 80 approaches to authors were made, of whom 37 responded. Of those, seven were not Thai so their work has not been included in the study's findings. Three initially agreed to participate but did not make themselves available for interview, and one paper was excluded as during the interview with the author, it was discovered to have been translated from Thai into English by someone other than the author. In addition to the 26 papers thus included herewith, due to problems identified with three papers² during the interview procedure, two papers

² In one case the author, VAL had prepared two papers from the same study both of which had been edited by the researcher. However the second paper which was the one initially chosen for analysis had been prepared only after the first paper (which was never actually published) had been edited and was partially based on the edited version of the first paper. In the second case the paper initially analyzed for author, ROB was discovered to have been reviewed prior to being edited by the researcher by a European colleague (although not an English native speaker) and in the third case the paper first analyzed for author, JEN was found to have been written in English on behalf of a friend based on adapting her Thai thesis with JEN not having been in any way involved in the original research project.

were analyzed for each of the three authors concerned to ensure that their work included in the study met all of its criteria with the other paper analyzed for that author being excluded from the analysis. However as a partial check on the reliability of the methodology, the outcome of the analysis of the first paper for each author was compared with the outcome of the results of the second paper (i.e. the paper actually included in the analysis) to ensure that the pattern of NCU was comparable even if not identical. The results of the comparisons are reported below in section 3.3.

Initially the permission of the RDO was sought and obtained to the work edited by the first author being used as the basis for the study. Only after that approval was obtained were approaches to the individual authors made. All of the approaches were made by an e-mail in which the purposes of the study were detailed and the authors were assured of the anonymous use of their work (see Appendix 3 for a copy of a typical e-mail although these varied based on the individual circumstances of the approach). All the authors later signed an informed consent form (see Appendix 3 for the wording of the consent form) either at the time of being interviewed or subsequently. On receipt of the author's agreement, their work was analyzed as detailed below, following which an appointment was made to interview them.

Table 2 summarizes the demographic details and education and publication history of the participants gleaned from the interviews described below as well as from other sources such as the pre-interview questionnaires and specific enquiries addressed to the participants subsequent to the interview. For a complete summary of the objective data derived from these sources the reader is referred to Table 3 in Appendix 1.

As can be seen from Table 2, 17 of the participants were female and nine were male; all had attained at least a master's degree with 21 having also graduated at PhD level. Most had first encountered English in primary school (prathom) with 14 starting English lessons at prathom 5 and three at prathom 1. Only five people had experience of English prior to commencing prathom, four in kindergarten (anubahn), one in a private class with none having any social exposure outside of their first experience in a classroom setting. At the time of editing their articles, all but one were employed as lecturers with one being a post-graduate student. Eleven of the participants were

Table 2 Brief demographic information and education/publication history of participants

Number of participants (N)	26	Faculty domain affiliation:	
Female	17	Agro Industry	2
Male	9	Arts/humanities/social science	6
Age at time of editing article:		Engineering	3
31-35	9	Environment/natural resources	1
36-40	7	Management science/economics	5
41-45	5	Medical	3
46-50	4	Science/technology	6
>50	1	Occupation: Lecturer at:	
Earliest exposure to English: (stage)		PSU Hatyai	11
age		PSU Pattani	6
(Anubhan) 4, 5, 6	4	PSU Surat Thani	3
(Prathom 1) 6, 7	3	PSU Phuket	1
(Private classes) 8	1	PSU Trang	1
(Prathom 4) 8	1	Other Southern Thai university	2
(Prathom 5) 10,11,12	14	University in Bangkok	1
(Mathayom 1) 12, 14	2	Post-grad. Student at PSU Pattani	1
(Mathayom 4) 16	1		
	30.42	Number of publications in	
Average period of exposure to English	(19-	English:	
in years (range)	43)	<5	13
Highest level of education achieved:		5-10	4
(at the time of editing article)		11-20	1
Master's degree	5	>20	8
PhD	21		

Note: See Table 3 in Appendix 1 for fuller information about the sample and their learning/use of English

located at the main campus of PSU in Hatyai with six in Pattani, three in Surat Thani and one each at Trang and Phuket. Three of the participants were located at other universities, but all had either previously worked or studied at PSU. The range of publications in English spanned one to more than fifty with half the sample having published less than five articles, but eight having published more than 20. Throughout this thesis the participants are referred to by randomly allocated 3 or 4 letter pseudonyms which are capitalized (e.g., ANN or OYLE)

3.2. Analysis of the manuscripts

The purpose of the analysis of the manuscripts was to determine the reason that the researcher had recommended each individual change suggested at the time of editing the manuscript. As indicated above, the primary purpose of editing the manuscripts was not related to the purposes of this study, but was to render the manuscript in English which would express the author's meanings in a manner which would be acceptable to the journal to which the paper was submitted for publication. The primary purposes therefore were to:

- 1) Improve and correct structural and grammatical usage.
- 2) Improve and correct mechanical aspects of the writing, such as spelling capitalization and punctuation.
- 3) Improve the rhetorical style, cohesion and lexical use consistent with the normally accepted style of academic writing.
- 4) Suggest changes to the manuscript which would improve the reader's ability to understand its content including, where necessary, supplementing the information content.

In later analyzing the changes suggested during the editing of the manuscripts, the first author developed his own coding nomenclature during a pilot study conducted during early 2016, the outcome of which formed the basis of Currie, Sinwongsuwat and Nicoletti (2016) and covered four participants, all of whom are included in the sample included in the present study where they are identified as BEN, CHAZ, FENI and PAT. The nomenclature was further extended during the remainder of the manuscript analyses but was rationalized at its conclusion to consist of 234 codes divided into six categories, *Structure* (which also covered grammatical usage, e.g. correct tense and preposition use – 192 codes), *Lexical* issues (5 codes), *Cohesion* (9 codes), (rhetorical) *Style* (18 codes), *Information* content (2 codes) and *Miscellaneous* covering mechanical and non-language issues (8 codes). Further, the *Structure* category was divided into 14 sub-categories: *Word order*, *Prepositions*, *Verbs*, *Articles and determiners*, *Adverbs*, *Nouns and compound nouns*, *Word form*,

*Conjunctions, Adjectives and modifiers*³, *Possessives, Agreement, Relative pronouns, Pronouns*⁴, and *miscellaneous* (structure).

The coding of the changes suggested to the manuscripts was conducted manually using a printed copy of the amended manuscript. In most cases Microsoft Word's *Track changes* tool had been used for the proof reading process although in a small number of cases the paper had been edited using highlighting and colored text to indicate additions and deletions suggested. Each change suggested was isolated and a code allotted to it based on the researcher's own reason for suggesting the change. Codes for the structure sub-categories were in general more detailed than those for the other five main categories and identified precisely why the change was felt to be necessary. Thus, for instance in the *Verbs* sub-category where a change of tense was necessary, the original and suggested tense were identified (e.g. Gverb pres s→past s) and in the articles and determiners category the incorrect and correct determiner formed a part of the code (e.g., Gart indef→def). For the non-structure categories the codes were less detailed (since these were not the focus of the study) but nevertheless sought to identify the editor's reason for suggesting the change (e.g., where an inappropriate choice of word had been made, the code, Lex w/c was assigned). The final set of codes used and their definitions are listed in Appendix 1 in Table 4.

At the end of the coding process, the individual codes were recorded page by page in the manuscript, initially by hand on a printed grid, but were later transferred to a spreadsheet so that at any future time they could be located to be checked or amended. The full list of tokens allotted to each code was then added to a cumulative list. The results thus obtained therefore represent an account of the editing of the manuscripts based on the researcher's own, albeit, subjective reasons for recommending the changes he did.

³ i.e. post-noun modifiers of all kinds, including relative clauses, reduced relative clauses prepositional phrases and infinitive complements.

⁴ The *Pronoun* sub-category was extracted from the *Miscellaneous* sub-category at the final rationalization stage; at the outset of the analysis of the papers there were insufficient tokens of pronoun NCU to warrant a separate sub-category.

They are therefore an indication of the distance between the researcher's native-speaker version of English and the writer's idiolect or interlanguage in the terms defined by Selinker (1972) and this approach accords with Hartshorne, Tenenbaum and Pinker's (2018, p. 11) assertion that:

"...adult learners rarely, if ever, achieve the same level of mastery as those who started in childhood. In order to study that phenomenon, the relevant yardstick is the asymptotic performance of native speakers".

3.3. Validating the methodology

Nevertheless in an effort to validate the approach adopted to analyzing the manuscripts in this way, one of the aspects discussed with the participant's during the interview was to identify the degree to which the suggestions made had been adopted when submitting the manuscript to the journal of choice and whether during the editorial and peer review process it had been necessary to further edit or amend the English language (as opposed to the academic) content. In almost all cases the writers indicated that they had accepted all or most of the changes suggested and in no case was the writer faced with a further requirement of having the English language content further amended, although in a number of instances the papers included in the study were further reviewed by the editor subsequent to peer review in order to check changes to the academic content recommended by the reviewers.

Moreover, in order to check the consistency of the method, for the three authors mentioned above for whom two papers each were proof-read, the outcome of the analysis of the two papers was compared by correlation to check how closely the distribution of the codings allotted and their allocation to categories and sub-categories corresponded. The results of the comparisons are shown below in table 5. These figures are consistent with the circumstances giving rise to the analysis of the second papers for each of the authors and in all cases show significant correlations between the codes allocated in the two papers. The lowest correlations (and the greatest absolute difference in the NCU %w) arise for author, JEN who as foot-noted ⁽²⁾ above had written the first paper edited for her on behalf of a friend based on

Table 5 Comparison of outcome of analysis of papers authored by the same participants

Author	VAL	ROB	JEN
Paper 1: NCU %w overall	3.19 %w	7.34 %w	26.70 %w
NCU %w structure only	1.76 %w	4.53 %w	12.98 %w
Paper 2: NCU %w overall	9.56 %w	6.60 %w	6.94 %w
NCU %w structure only	5.72 %w	4.31 %w	2.56 %w
Correlations:			
Overall codes allocated	0.826***	0.960***	0.462***
Structure sub categories (13-excl. pronouns)	0.945***	0.993***	0.798**
Main categories (6)	0.962***	0.998***	0.716

Notes: *** significant at $p < 0.001$ **significant at $p < 0.01$. Structure sub categories exclude pronoun sub-category which was extracted from the miscellaneous sub-category after the three Paper 1s had been excluded from the analysis.

adapting her friend's thesis in Thai with JEN not having been in any way involved in the original research project. However, only the main category correlation is not significant with both the overall codings and the *Structure* sub-category correlations being significant. For VAL, the lower absolute NCU %w are consistent with the first paper analyzed (Paper 1) having benefitted from the prior editing of Paper 2; however, all the correlations at both coding and group levels are highly and significantly correlated. For ROB, the results of analyzing the two papers were very closely correlated and the prior editing of Paper 1 by a non-Thai colleague does not appear to have had any great effect on the outcome even though it was dropped from the analysis and Paper 2 included in its place.

The outcome of these comparisons therefore suggest that the methodology adopted produced consistent results intra-individually insofar as the allocation and distribution of the codings were concerned even if the absolute occurrence of NCUs varied between the two papers for two of the authors.

3.4. Interviews with the authors and the collection of the speech samples

The second stage of the study's methodology involved a face-to-face interview with the author. The interviews which were conducted in a fairly informal style, occupied in most cases one hour, and were audio-recorded. The interviews had the

purpose of collecting both quantitative and qualitative data regarding the participant's learning experiences and their experience of using English both socially and in their academic life, particularly in publishing their work, as well as producing an extended sample of the participant's speech for analysis.

Once the analysis of the author's paper had been completed, an appointment was made to meet them at their convenience, in all but two cases at their place of work (the exceptions were based in one case on the author at the time of the interview being engaged in studying at a higher level at a university other than PSU and in the other case on the participant working at another university, but making themselves available for interview at PSU). Prior to the interview, a pre-interview questionnaire was sent to the author which collected basic information about their formal education, experience of learning English and their experience of publishing the article which had been analyzed. They were also asked to express their opinion about the difficulty of publishing in English based on a scale of 1 (not difficult) to 5 (very difficult). On the basis of the answers provided, an interview structure template was prepared, which the researcher used as a guide to the conduct of the semi-structured interview. Examples of the pre-interview information form and interview structure template appear in Appendix 3 although in many cases these were tailored to suit the particular circumstances of the author.

Broadly, the interview sought to elicit the author's recollections and opinions about learning English in their formal education as well as in other situations such as non-formal classes (i.e. classes or organized learning specifically aimed at learning English outside of the formal education system) or self-directed learning, or learning which occurred incidentally through use of or contact with English in situations where learning English was not the primary or intended purpose of the activity undertaken. The author was also asked to elaborate on the information and opinions about their experience of publishing work in English language journals given in the pre-interview information form.

Finally, prior to interviewing each participant, the categories and sub-categories of NCU which accounted for more than 5 % of the NCUs from their manuscript were identified (in all cases amounting to five, six or seven categories/sub

categories) and towards the end of each interview the participant was asked to order those areas according to how difficult they find them in using English. After the interview the participant's order was then compared with the actual order based on the NCU% for those categories in their manuscript and a score was calculated based on the Spearman rank order coefficient. This score was taken as being indicative of the participant's meta-linguistic awareness of their difficulties in writing structurally and stylistically accurate English.

Following the interview, the researcher personally transcribed the interview verbatim from the main recording taken using an Olympus digital voice recorder, model WS831, and the transcription was then checked against a second back-up recording of the interview taken with a different recording device, generally a mobile telephone or in some cases a tablet computer. The completed and checked transcription was then sent to the author for comment.

The transcription was then transferred to an XL spreadsheet, allocating one row to each discrete, uninterrupted utterance by the interviewee following which thematic analysis of the whole of the participant's speech was conducted, broadly guided by the grounded theory methodology as described by Strauss and Corbin (1998). The first stage of this was the identification of the purpose of each utterance (classified as: statement of fact, recall, opinion, evaluation, self-assessment, explanation, confirmation (of a previous utterance), clarification, correction, or a comment on the course of the interview or a matter outside the purposes of the interview.)

Because the interview was mainly aimed at eliciting factual information, the themes which emerged were very specific to the aims of the interview and the axial coding stage proved therefore to closely mirror the interviews' target information, being categorized under:

- 1) The interviewees personal history
- 2) Their experience of learning English, sub-categorized into:
 - a. information relating to an institution where a period of learning occurred
 - b. teacher qualities and skills

- c. teaching and learning methods used
 - d. skills and content taught
 - e. texts and materials used
 - f. evaluation of a learning experience
 - g. self-assessment of abilities or achievements from a learning experience
 - h. reasons for learning
 - i. significant events during a learning period.
- 3) The interviewee's opinions.
 - 4) Their experience of using English in non-educational contexts.
 - 5) any experience they had had of teaching English.

Plus four themes relating to publishing work.

- 6) Writing and publishing the article edited and analyzed.
- 7) Writing and publishing generally in English.
- 8) Writing and publishing in Thai.
- 9) Writing and publishing in any other language.

Since much of the early part of the interview was concerned with the participant's education history, the third stage of the analysis involved identifying the stage of education being discussed (prathom, lower or higher mathayom, undergraduate, masters and PhD study or periods spent as a post-doctoral fellow, as well as study at a language school outside of formal education or personal efforts made to learn English.

Finally, the content of each utterance or a group of utterances on the same subject were summarized on the spread sheet then transferred to Microsoft Word and this formed the basis of the summaries of the interviews which appear in Appendix 2. The coding scheme used in the thematic analysis of the interviews also appears as Table 6 in Appendix 1

The next stage of the analysis of the interview data involved the analysis of a sample of the speech of the participant based on the *Structure* sub-category codes used in the analysis of the writing sample. A sample of around 1200 words was more

or less randomly selected from the participant's speech to include, as far as possible, several extended utterances. Repetitions, corrections, back-channeling and other features of speech were excluded to bring it into line with the written data and the sample reduced to approximately 1000 words before analyzing it. The analysis did not extend to the individual codes used in the analysis of the writing but was based on the *Structure* sub-categories, initially 13, but later, when the *Pronouns* sub-category was created, all the *Miscellaneous* tokens in the 26 speech samples were reanalyzed so that the final analysis of the speech samples is based on the same 14 *Structure* sub-categories as the analysis of the participant's manuscripts.

3.5. Data analysis

The data derived from the analysis of the texts (written and spoken) described in this paper were analyzed with the Microsoft Excel *Data analysis* tool using ANOVA, t tests and Pearson product moment correlation coefficients. In order to compare the distribution of instances of structure NCUs with the distribution of word types in the original texts, the manuscripts were analyzed using the Wmatrix word-tagging application (Rayson, 2009) which produces a CLAWS (constituent likelihood automatic word-tagging system) v. 7 tag-set. The word-type analysis derived from this tag-set is based on a system of 137 codes and in order to align this with the coding system adopted in the study, an Excel worksheet template was developed which allotted the number of words from each CLAWS code to one of 11 of the 14 *Structure* sub-categories which contained particular word-types. Later, as described below in Chapter 4, Results, further adjustments were made to the coding alignment to render the two sets of data derived (from the coding system designed for the study and from the Wmatrix analysis of the manuscript) as closely comparable as possible. The data from the CLAWS tagsets was used to conduct both inter- and intra-individual level comparisons as well as providing overall benchmark data based on the grouped results.

In order to consider the factors associated with both the patterns of and the variation in the distribution of NCUs, the data from the interviews was analyzed quantitatively and extracted to an XL spreadsheet. The data categories extracted were

framed in as detailed a manner as possible with the initial aim being to construct a quantified account of the periods during which they had learned or experienced using English including their formal English education incorporating the approximate number of hours studied at each level, the type of school attended, and their experience of native-speaking English teachers and communicative language teaching techniques. This was then extended to cover periods spent studying other subjects wholly or partly in English, periods spent studying abroad and other aspects of their experience of learning and using English. The full list of variables extracted appears in Table 3 in Appendix 1.

These were then treated as potential independent variables in four multiple regression analyses using respectively the overall percentage of NCUs per 100 words (NCU%w) from each of the 26 participants' manuscripts, their structure NCU%w, the structure NCU%w derived from the speech samples and their meta-linguistic appreciation score represented by the Spearman rank order coefficient derived from their ordering of the areas giving rise to the greatest number of NCUs in their written manuscripts. In order to do this, coefficients based on Pearson product moment correlations were first derived between the potential independent variables and (separately) the four potential dependent variables (writing overall NCU%w, writing structure NCU%w, speaking structure NCU%w and the meta-linguistic appreciation score). These produced very few significant correlations but nevertheless a selection was made based initially on the 20 highest correlated factors and a "brute-force" step-wise regression analysis was conducted, separately for each of the dependent variables. At this stage, it was also noted that the two potential written data outcome variables, overall NCU%w and structure NCU%w, were themselves highly correlated ($r = 0.94$) and produced a broadly similar pattern of correlations with the potential independent variables. This later resulted in the models for these two variables being identical in terms of their constituents and it was therefore decided only to report upon the outcome of the regression analysis in respect of one of these two variables, the structure NCU%w.

The initial step-wise regression analyses were for convenience conducted using Microsoft XL, and commenced by selecting the independent variable with the highest absolute correlation (i.e. irrespective of whether it was positive or negative) with the particular dependent variable and pairing it in a two-way multiple regression with each of the other selected potential independent variables. Then the pair producing the highest R^2 (and generally also the highest level of significance) was selected and each of the remaining potential independent variables was combined with it in three-way multiple regressions. Then the combination producing the highest R^2 from this step was combined with the remaining variables to produce four way combinations and this procedure was continued progressively for larger combinations until no further improvement in the R^2 could be achieved or until the result was no longer significant, or until the limit of independent variables (16) capable of being processed in Microsoft XL was reached. Then the best model achieved was reanalyzed using SPSS V. 20 to check for multi-collinearity and where collinear pairs were identified in the models they were adjusted by successively dropping one of each pair of collinear variables until a supportable model was achieved.

For the qualitative analysis of the interviews, the thematic and content analysis conducted based on a grounded theory (Strauss and Corbin, 1998) approach was used to broadly categorize the participants into a number of learner types (ten types), help types (three types) and motivation types (five types) and summarized as binary data which were then analyzed both by correlation and by multiple regression analyses with the structure NCU%w derived from their writing, the structure NCU%w derived from the speech samples and the meta-linguistic appreciation score as the dependent variables.

The results of all the analyses conducted are reported in Chapter 4 and discussed in Chapter 5.

4. Results

4.1. Quantitative analysis

The quantitative data from the assessment of the NCU in the participant's manuscripts were first analyzed overall then inter and intra-individually and, along with the NCU data from the analysis of the speech samples and the meta-linguistic score based on the participant's awareness of their problem areas, were then used as the outcome (dependent) variables in regression analyses, with the data extracted from the interviews relating to their experience of learning and using English as the predictor (independent) variables. The results are reported below.

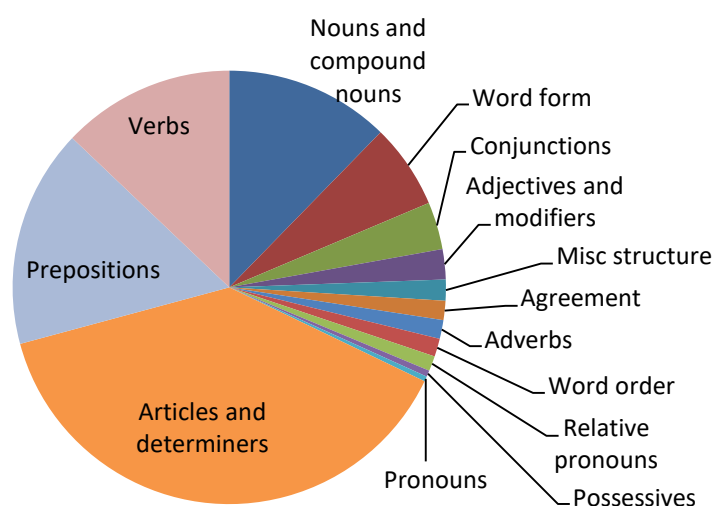
4.1.1. Overall analysis

Initially four levels of categorization were considered and at each level both correlation and ANOVA were used to test for significant patterns in the data and differences between them. At the most fine-grained level, the individual codes attributed to each NCU identified during the analysis of the edited manuscripts were compared including not only those from the *Structure* sub-categories but also those from the non-structure categories. Then the *Structure* category codes alone were tested while at the other extreme, the six overall categories (*Structure*, *Lexical*, *Cohesion*, *Style*, *Information* and *Miscellaneous*) were compared, with the main analysis being directed at the *Structure* NCUs categorized into 14 sub-categories.

Table 7 in Appendix 1 shows the overall NCU counts from each of the 26 papers included in the analysis, split between the 14 *Structure* sub categories and the five non-structure categories and also includes details of the number of words reviewed in each manuscript based on the CLAWS tag-set derived from the Wmatrix application. The total number of NCUs recorded in the papers was 16416 which represented 97.42 % of the changes suggested during editing, with 2.58 % of the suggestions not being categorized for various reasons, generally that a suggestion had been made as a result of a previous suggestion to maintain grammatical consistency which would not have been required but for the previous suggestion (e.g., if

suggestion to change a noun which was the subject of a clause from the plural to singular form, a suggestion might also be made to add an „s“ to a present simple verb to agree with the number of the subject. That latter change would not be classified as it was made purely because of the earlier change suggested to the noun and would not have been necessary if the noun form had not been changed). Disregarding the non-classified suggestions the total number of NCUs was 15993. Table 8 (Appendix) shows the numbers of NCUs per participant expressed as percentages of that total number. As can be seen, the mean percentage of *Structure* NCUs amounted 55.8 % (range: 37.1 – 73.7 %) and was for all the participants the biggest overall category of NCU. *Style* accounted for an average of 17.5 %, (range: 9.2 – 27 %), *Lexical*, 10 % (range: 1.4 – 26.3 %), *Miscellaneous*, 4.9 % (range: 0.8 % - 27.6 %) and *Information content* accounting for 8.9 % (range: 2.2 %, 13.4 %) with *Cohesion* the smallest NCU category with an average of 2.8 %, (range: 0.9 – 5.3 %) of the suggestions made to the authors.

Figure 3 Overall breakdown of structure NCUs between 14 sub-categories



The distribution of the *Structure* NCUs to the 14 sub-categories is illustrated above in Figure 3. Within the structure sub-categories, it can be seen that the *Articles and determiners* sub category was overwhelmingly the largest source of structure NCUs accounting for 38.7 % (3453 out of 8931) and individually for all but one (GEE) of the authors, *Articles and determiners* was the largest structure sub-category.

Of the remaining sub-categories, *Prepositions*, *Verbs* and *Nouns and compound nouns* also produced substantial totals of 1456 (16.3 %), 1152 (12.9 %) and 1099 (12.3 %), respectively, and the four largest sub categories together accounted for more than 80 % of the structure NCUs recorded. In contrast, possessives (42) and pronouns (30) produced overall distribution of NCUs to the individual codings appears as Table 19 in Appendix 1 and is commented on below in section 4.1.5.

4.1.2. Inter-individual comparisons

In total, the manuscripts consisted of 112293 words and the NCUs amounted to slightly less than 16000, or an average manuscript length of 4343 words containing 615 NCUs at a rate of 14.16 %w, of which structure NCUs accounted for 7.91 %w. The papers, however, ranged from 1830 to 8525 words and the numbers of NCUs from each manuscript were not therefore capable of direct comparison and in order to test for significant differences in the occurrence of NCUs, the data were converted to figures based on the average manuscript length (4343 words) and Table 9 shows the distribution of NCUs on that basis. ANOVA's were then derived from that data and the more detailed data at the individual code level was similarly transformed for the purposes of this analysis. A summary of the results for all four levels are shown below in Table 10a with full details of the ANOVAS appearing in Tables 10b-e in Appendix 1, and it can be seen that while the two ANOVAs at the individual code level produced an indication of significant differences, neither the 14 structure sub-categories ($F = 0.8453$, $df\ 25, 338$) nor the six overall categories ($F = 0.662$, $df\ 25,130$) produced differences significant at $p < 0.05$, indicating that the grouped data were quite homogenous whereas at an individual code level there were individual

Table 9a Summary of one-way ANOVAs on NCUs in participants' manuscripts.

Data on which ANOVA based	df	P-value	Significance	F crit.
234 <i>Structure</i> and non-structure codes	25, 6058	2.7413	0.0000007	1.5079
192 <i>Structure</i> codes	25, 4966	1.5671	0.0359	1.5083
14 <i>Structure</i> sub-categories	25, 338	0.8453	0.6821	1.5387
6 main categories	25, 130	0.6620	0.8846	1.5909

Note: All analyses based on average manuscript length of 4343 words (full ANOVA details appear in Tables 9 b-e in Appendix 1)

differences in the distribution of NCUs which for the overall ANOVA were significant at $p < 0.001$ ($F = 2.741$, $df 25, 6058$) and for the structure codes alone, at the $p < 0.05$ level ($F = 1.567$, $df 25, 4966$). Next, a series of correlation matrices were derived based on the four levels of analysis and these are shown in Tables 10 to 13 in Appendix 1. As can be seen, at the most detailed level based on the 234 individual codes allotted to the NCUs, the correlations between the participants ranged from 0.27 to a maximum of 0.96 with the mean correlation at that level being 0.73 and all the correlations were significant at the $p < 0.001$ level. For the 192 structure codes alone the correlations ranged from 0.37 to a maximum of 0.98 with the mean correlation being 0.77 and all the coefficients were again significant at the $p < 0.001$ level. At the level of the 14 *Structure* sub-categories, the correlations were generally very high. The lowest correlation was 0.63 with the highest being very close to unity at 0.99. The mean correlation at this level was 0.83 with more than 88% being significant at the $p < 0.001$ level and all being significant at or above $p < 0.05$. Finally at the least detailed level, based on the six main categories, the correlations ranged from 0.53 to 0.9995 with the mean being 0.86 and all but 25 of the 325 coefficients being significant at or above the $p < 0.05$ level. It was also notable that all but one of the non-significant correlations were those of the author, JEN who registered only one significant correlation at the category level with another author (ROB), which was largely the result of her manuscript having contained the lowest proportion of structure NCUs, which as can be seen from Table 1 amounted to 117 NCUs out of a total of 315, or a little over 37 %, against an average of almost 56 %. Overall, however, the manuscripts presented a very consistent breakdown of NCUs at all three levels of analysis.

4.1.3. Comparison of NCU with word frequency in the manuscripts

However, whilst the data detailing the breakdown of the structure NCUs gave an indication of the severity of the problems faced by these authors in using articles, prepositions, verbs and nouns correctly in their work, they do not take into account the actual frequency of the occurrence of those word classes in their manuscripts, and the next stage of the analysis of the data was to use the CLAWS tag-sets derived from

the Wmatrix application to consider how closely aligned the distribution of NCUs was to the distribution of the word classes contained in their work.

Table 14 Overall word-type tokens per Wmatrix in 26 manuscripts

Word type	Tokens	% of total classified
Prepositions	14547	13.3 %
Verbs	16217	14.8 %
Articles and determiners	17243	15.8 %
Adverbs	3301	3.0 %
Nouns	37876	34.7 %
Conjunctions	6649	6.1 %
Adjectives and modifiers	10460	9.6 %
Possessives	100	0.1 %
Relative pronouns	616	0.6 %
Pronouns	1333	1.2 %
Misc. structure	876	0.8 %
Not classified	3705	
Total	112923	
	109218	100 %

Table 14 above presents the overall classification derived from Wmatrix which was able to classify around 97 % of the words (109218 tokens) in the manuscripts into the 11 categories used in the initial analysis for which there were direct analogs (i.e. excluding *Word order*, *Word form* and *Agreement*), with the items not classified consisting mainly of formulae, figures and letters in the text, foreign words and the infinitive marker *to* which was assumed to be part of a verb.

The distributions of words in each manuscript were also compared and the correlations between them based on the 137 Wmatrix categories were all significant at the 0.001 level (min $r = 0.81$; max $r = 0.99$; average: 0.94) as shown in Table 15 in Appendix 1. The correlations were even higher based on the 11 *Structure* sub-categories onto which the Wmatrix codings were mapped (min $r: 0.92$; max $r: 0.9986$; average: 0.98 all significant at $p < 0.001$) as presented in Table 16 in Appendix 1, so it was apparent that there was no significant variation in the pattern of distribution of words to word types in the 26 manuscripts and that this was not therefore a factor in

comparing the distribution of NCUs inter-individually based on the number of tokens of each word type in the manuscripts.

However the 14 *Structure* sub-categories on which their original analysis had been conducted included *word order*, *word form* and *agreement* which had no analogs in Wmatrix as well as some individual codes within the *adjective and modifiers* and *miscellaneous* categories which related to clause or sentence (global) level errors, which could not be aligned with the Wmatrix distribution.

Moreover, from the individual codings within the *Structure* sub-categories, it was found that the largest number of tokens (overall, as well as within the *Articles and determiners* sub category) related to the omission of the definite article, *the* (1921 tokens) and that a further 504 tokens related to the omission of an article, possessive or determiner in an obligatory situation. Therefore, 70 % of the overall tokens attributed to *Articles and determiners* in the structure NCU analysis had no analog in the Wmatrix data since the CLAWS tag-set does not record the use of the *no article* category within the English article system. As Swan (1996) notes, the use of no article before a plural or non-count noun is used to signify a general reference to the thing etc. denoted by that noun and the *no article* category represents an important part of the article system.

Therefore, in order to align the NCU analysis with the CLAWS tag-sets, a number of adjustments were made. Firstly, the *word form* and *agreement* tokens were allocated to their respective parts of speech sub-categories based on the part of speech which was incorrectly used in the manuscript, e.g., for the *Gword form noun->verb* coding, the tokens were placed in the *Nouns and compound nouns* sub-category and for the *Gagree verb/noun* code the tokens were placed in the *Verb* sub-category. Secondly, for the *word order* sub-category, where the NCU related to the misplacement of a single word or to the ordering of adjectives before a noun, the tokens were moved into the appropriate part of speech sub-category, with the remaining more egregious word order errors being removed from the analysis (88 tokens). Also removed were clause and sentence level errors from the *Adjectives and modifiers* (83 tokens) and *Miscellaneous* (110 tokens) categories, and the excluded

structure NCUs amounted altogether to 281 tokens or a little over 3 % of the total of 8931, leaving 8650 NCUs to be compared with the total number of words in the manuscripts. The details of the adjustments made appear below as a footnote to Table 17 below

For the *no article* NCU's it was decided to combine the *Articles and determiners* and *Possessives* sub-categories (since as Swan (1996, p.64) notes, "s genitives are used in place of articles, so effectively form a part of the overall determination system of English nouns) and to compare the number of *Articles and determiners* NCUs including the *no article* tokens, with the number of nouns recorded by the CLAWS tag-set rather than the numbers of articles, determiners and possessives, thus effectively counting the number of *no article* usages, correct or incorrect, as well as those where articles were used correctly or incorrectly in the manuscripts. Adopting this measure increased the number of „words“ classified in the texts from 109218 to 129751 by including the 20533 instances where nouns were used which were not preceded by an article, determiner or a possessive. Viewed another way, the *no article* NCU's amounted to 11.8 % of the number of nouns not preceded by an article etc. with the remaining *Articles and determiners* and *possessives* tokens relating to incorrect usage representing 6 % of the number of those word types in the texts. Together, the cumulative *Articles and determiners* and *Possessives* tokens amounted to slightly more than 9 % of the number of nouns in the manuscripts. Table 17 shows the final adjusted tokens of words and NCUs compared based on percentages and Figure 4 a and b below show the distributions in chart form.

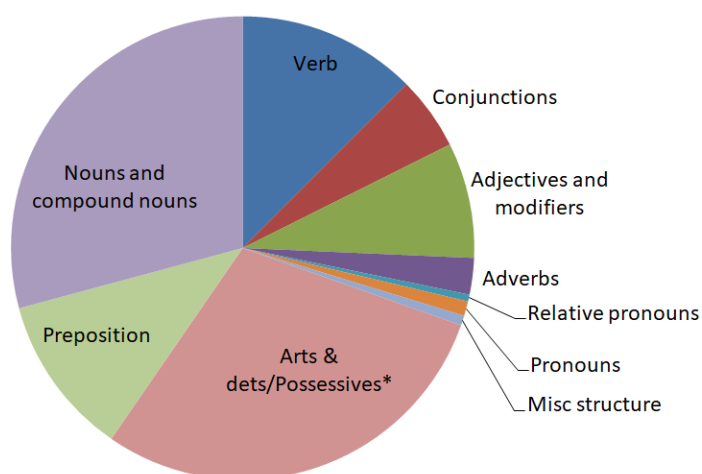
A correlation coefficient was derived from a comparison of the NCU's per word class with the total number of words in that class (columns **A** & **C** in Table 7) which produced a moderately high correlation of $r = 0.86$ and that was significant at $p < 0.01$ producing an $r^2 = 0.75$, suggesting that three quarters of the variance in the number of errors in each word class was related to the number of words in the manuscripts, so that the degree to which other factors such as the degree of difficulty which each author had in using particular word classes was limited to around one quarter of the variance. However, from a comparison of the percentages in columns **C**

and **D** in Table 7 the pattern of the occurrence of errors in the different word classes appeared to be different and this is visually apparent from Figure 4 b and c. This appeared to confirm that the problems faced by the authors in correctly using different parts of speech in their work were not entirely a function of the distribution of those parts of speech.

Figure 4 Adjusted distributions of:

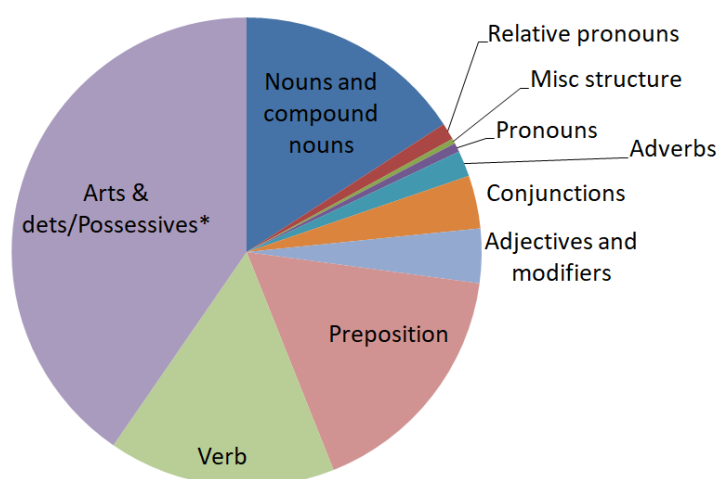
a. Words in texts per Wmatrix

(*articles & determiners/possessives based on number of nouns; columns **A & B** in Table 4 below)



b. Structure NCUs

(columns **C & D** in Table 4 below)



c. NCU's as a proportion of words in each word type in the manuscripts (column E in Table 17, adjusted to 100 %)

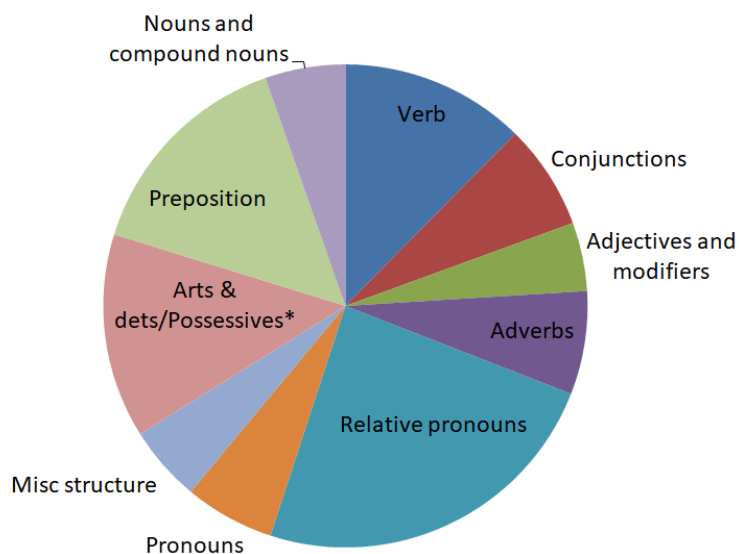


Table 17 Word type tokens after adjustment, and corresponding NCUs

Word class	A	B	C	D	E
	Words	% of total words	Structure NCUs	% of total NCUs	% of words in word class
Prepositions	14547	11.2 %	1456	16.8%	10.0 %
Verbs	16217	12.5 %	1352	15.6%	8.3 %
Arts & dets/Possessives	*37876	29.2 %	3495	40.4%	9.2 %
Adverbs	3301	2.5 %	154	1.8%	4.7 %
Nouns and comp. nouns	37876	29.2 %	1369	15.8%	3.6 %
Conjunctions	6649	5.1 %	316	3.7%	4.8 %
Adjectives and modifiers	10460	8.1 %	324	3.7%	3.1 %
Relative pronouns	616	0.5 %	100	1.2%	16.2 %
Pronouns	1333	1.0 %	54	0.6%	4.1 %
Misc. structure	876	0.7 %	30	0.3%	3.4 %
Total	129751		8650		
Excluded from analysis	3705		281		
Overall Total	133456		8931		

Notes:*Based on the number of nouns in the manuscripts (actual *Article and determiners* used in the manuscripts was 17243) In column C, *Verbs* includes 200 tokens reclassified from *Word form* (99) and *Agreement*(101); *Articles & dets/Possessives* consists of 3453 tokens from *Articles and determiners* and 42 tokens from *Possessives*; *Nouns and comp nouns* includes 270 tokens reclassified from *Word form* (263) and *Agreement*(7); *Adverbs* includes 29 tokens reclassified from *Word form*; *Adjectives and modifiers* includes 206 tokens reclassified from *Word form* (174) and *Word order* (32) and excludes 83 tokens at clause or sentence level; *Pronouns* includes 20 tokens reclassified from *Agreement*; *Misc. structure* excludes 110 tokens at clause or sentence level.

4.1.4. Intra-individual analysis

To check this conclusion, the NCUs in each word category were calculated per 100 words for each of the 10 word classes and separately per 1000 words in the text (irrespective of word class) and the resulting indices compared. This had the effect of comparing the rate of occurrence of NCUs as if each word class had occurred equally frequently in the manuscript with the actual rate of occurrence of NCU's per word class. The results are presented in Table 18 in Appendix 1.

The overall correlation between the NCU's per 1000 words in the manuscript and per 100 words in the word class was quite low at 0.24 which was not significant. Moreover, as can be visually appreciate by comparing the paired indices for each participant the pattern of variation for each participant was different and this variation was confirmed by the individual correlation coefficients derived for each author which produced significant correlations for only four of the 26 authors with 14 of the remaining 22 coefficients being below 0.2, and in some cases being negative (see Table 18). Moreover, there was considerable variation in the ten word types between the rates of occurrence of NCUs per word class and the apparent rates based on an undifferentiated word count and his variance was confirmed by paired-sample t tests conducted between the two sets of indices for each word type. As can be seen from Table 18 these comparisons produced significant differences, in all but two word classes at the $p < 0.001$ level with the *prepositions* and the *miscellaneous* categories producing differences at only the 0.05 level.

4.1.5. Frequency of occurrence of individual structure NCU codes

Table 19 in Appendix 1 shows the total number of tokens allocated to each of the 192 *Structure* codes in the initial analysis (the figures shown do not take into consideration the adjustments which were made to ensure contiguity with the Wmatrix data). The outcome at the individual code level was considered to try to identify patterns in the occurrence of NCUs within the individual word types. As noted above, the largest single NCU type was the omission of the definite article and overall the absence of articles etc. in obligatory situations accounted for 2425 or 28%

of the NCUs. Of the remaining tokens from the *Articles and determiners* sub-category, 763 involved the use of the definite article *the* in inappropriate situations with only 126 relating to the misuse of the indefinite article. Clearly there was considerable confusion among the authors about the use of articles in general, and in respect of the use of *the* in particular.

Among the other major classes, *Prepositions* NCUs (1456 tokens) mostly concerned an incorrect choice of preposition (863 tokens) with the omission of a preposition or the use of a preposition where none was needed accounting for, respectively, 231 and 208 tokens. From the *Verbs* sub-category (1352 tokens after the addition of 200 *Word form* or *Agreement* NCUs), 659 tokens related to inappropriate choice of tense, of which 432 related to the over-use of the present simple tense and of those, 367 concerned the use of the present simple tense instead of the past simple tense. Incorrect choice of the past simple tense itself accounted for 152 tokens, 93 in situations where the present simple was indicated and 50 where the present perfect was the appropriate choice. Of the remaining *Verbs* NCU's, 297 concerned the use of an incorrect verb form, while 87 related to incorrectly formulated or used passive voice constructions.

Within the *Nouns and compound nouns* sub-category (1369 tokens after the addition of 270 *Word form* and *Agreement* NCUs) problems were overwhelmingly related to the incorrect use of the plural and singular form of count nouns with incorrectly used singular forms where a plural was required accounting for 804 tokens and inappropriately used plural nouns numbering 220.

The *Word form* sub-category all the tokens of which were reallocated to other sub-categories for comparison with the Wmatrix data, together accounted for 565 tokens and was the fifth largest *Structure* NCU sub-category. Of those, of those, 263 tokens were related to incorrectly used noun forms, with 176 related to adjective forms, 99 to verb forms and 29 to adverb forms, The only other codes to be allocated more than 100 tokens were the verb/noun agreement category (which were reallocated to the *Verb* sub-category for the purposes of the comparison with the Wmatrix data) which produced 101 tokens while in the *Conjunctions* sub-category (which was the

seventh largest at 316 tokens), not using a conjunction in an obligatory situation accounted for 150 tokens while making the wrong choice of conjunction accounted for 108 tokens. Within the *Adjectives and modifiers* category which was the sixth largest category at 324 tokens (after the removal of 83 tokens relating to clause or phrase level modifiers) no individual code reached 100 tokens with the major problem being the misplacement of adjectives and single-word modifiers together making up 79 tokens.

4.1.6. Analysis of the speech samples and meta-linguistic awareness

Table 20 in Appendix 1 shows the data derived from the participants' speech samples broken down across the same 14 *Structure* sub-categories used for the analysis of the data derived from the manuscripts. The participants produced NCU %w values averaging 16.5 %w (range: 4.6 – 33.5 %w), but an ANOVA conducted on the data converted to a sample length of 1000 words found no indication of significant differences in the data (see Table 21 below).

Further, the data were found to be generally highly correlated indicating that the patterns of NCU in the speech samples were broadly similar. As can be seen from Table 22 in Appendix 1, the correlations ranged between 0.55 and 0.99 all of which were significant at or above $p < 0.05$ with around 95 % being significant at $p < 0.001$ and the average correlation being $r = 0.91$, which was higher than the average for the writing data ($r = 0.83$), and again showed a high level of consistency. The speech sample data was also compared with the data from the analysis of the written manuscripts and the correlations. The overall correlation coefficient based on the grouped data for the whole sample was $r = 0.61$ which was significant at $p < 0.05$ ($df = 12$) and based on the data for each participant, ranged from 0.31 to 0.85 (see Table 23 below) with more than half being significant at or above $p < 0.05$. However for ten of the participants the data for the speech and written samples were not significantly correlated although in all cases the coefficients were positive. Moreover, an ANOVA which was taken as based on the data reduced to a notional sample size of 1000 words found no significant difference between the participants' speech NCU data ($F = 0.504$, $P = 0.979$, $df, 25, 364$).

From Table 20 it can be observed that the *Verbs* sub-category produced the largest number of NCUs overall in the speech samples (37.5 %), which was largely related to the over use of the present simple tense often in situations where the past simple would have been the appropriate tense, and for all but two of the individual participants (MON and NAM) this sub-category also produced the highest NCU count. The next three largest sub-categories were *Articles and determiners*, *Nouns and compound nouns* and *Prepositions* and together the four largest sub-categories accounted for just under 80 % of the NCUs recorded in the speech samples, a similar although slightly lower outcome to that from the analysis of the written data, where those four sub-categories accounted for just over 80 % of the NCUs.

Table 21. One-way ANOVA on NCUs in participants' speech samples.

SUMMARY				
<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
ANN	14	154.9	11.064	373.88
BEN	14	56.38	4.0271	55.46
HAZ	14	138.78	9.9128	113.19
DEE	14	268.03	19.145	677.63
EVE	14	203.88	14.563	371.82
FENI	14	162.67	11.62	344.87
GEE	14	173.78	12.413	652.64
HAL	14	182.72	13.051	337.7
INA	14	46.27	3.305	29.185
JEN	14	129.22	9.2303	176.1
KEN	14	251.43	17.96	623.08
LIZA	14	150.54	10.753	291.51
MON	14	172.92	12.352	284.48
NAM	14	182.09	13.006	268.61
OYLE	14	151.49	10.82	384.35
PAT	14	334.67	23.905	1276.5
QUIN	14	196	14	399.54
ROB	14	107.53	7.6805	205.93
SAM	14	144.12	10.294	204.77
TOM	14	184.16	13.154	584.92
UNA	14	142.29	10.163	352.8
VAL	14	113.77	8.1266	155.51
WAN	14	213.21	15.23	400.37
XIAN	14	84.63	6.045	104.84
YVES	14	228.77	16.341	523.97
ZOLA	14	122.21	8.7294	143.58

ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	7170.06	25	286.802	0.79862	0.74416	1.53872
Within Groups	121383	338	359.122			
Total	128553	363				

Note: All analyses based on average sample length of 1000 words

Table 23. Correlations between speech & writing NCUs in 14 Structure sub-categories

Name	r	Name	r	Name	r	Name	r
ANN	0.36	HAL	0.65*	OYLE	0.49	VAL	0.70**
BEN	0.69**	INA	0.49	PAT	0.63*	WAN	0.33
CHAZ	0.50	JEN	0.52	QUIN	0.79***	XIAN	0.72**
DEE	0.53*	KEN	0.57*	ROB	0.31	YVES	0.71**
EVE	0.83***	LIZA	0.57*	SAM	0.65*	ZOLA	0.58*
FENI	0.75**	MON	0.63*	TOM	0.32		
GEE	0.40	NAM	0.85***	UNA	0.32		

Notes: *significant at $p < 0.05$; **significant at $p < 0.01$; ***significant at $p < 0.001$; df, 12

The final line of Table 20 shows the degree of success achieved by the participants in identifying the areas that produced the highest NCU counts in their written work. For convenience, these indicators were calculated according to the Spearman Rank Order formula although in the main the coefficients resulting did not reach significance. Nevertheless since the intention was not to generalize this statistic but to use it as a scoring rubric for recording the success of the participants in identifying their own language difficulties this was not problematic.

The coefficients ranged from a (negative) value of -0.64 to a positive value of 0.71 with ten of the participants producing negative values and ten showing values above 0.2. Generally therefore the outcome of this measure of their meta-linguistic awareness was quite varied with most people not able to accurately identify the areas which gave rise to the largest numbers of NCUs in their manuscripts.

4.2. Quantitative data extracted from the interviews and multiple regression analyses

Data from the interviews relating to the participant's experience of learning or using English was extracted from the interviews and Table 3 in Appendix 1 shows a summary of the data that was extracted quantitatively. The data was first placed into around 60 potential variables in the form of continuous, scalar or binary measures as

appropriate. As described above in Section 3.5, the data fields were first tested for their correlations with the three outcome variables. The actual level of significance for 24 degrees of freedom was approximately $r = 0.38$ but very few of the fields reached that level of significance for the speech-sample outcome variable (NCUSPST) or for the meta-linguistic awareness indicator (PROBCOR) and none of the correlations with the written data outcome variable *Structure* NCU%w (NCUWST) were significant. Therefore, initially those fields which bore correlations of above 0.2 were considered for inclusion in the multiple regression analyses although later, a small number of fields⁵ where it seemed possible that there might be some effect on the dependent variable NCUWST with correlations below 0.2 were tested in that regression model and were found to be plausible independent variables.

The *brute-force* step-wise process was conducted first for the outcome variable, NCUWST using the Microsoft XL data analysis tool, and a model resulted incorporating 16 of the potential independent variables before the limit of the analysis tool was reached, at which point the incremental gain to the R^2 was noted to be extremely small (below 0.01). However at this stage the ANOVA was noted to still show significance for the model. The process was then repeated for the NCUSPST variable which generated a significant model incorporating 15 independent variables, and finally, the PROBCOR outcome variable which reached its highest R^2 level with the ANOVA for the model remaining significant after the incorporation of 13 independent variables.

However since the Microsoft XL data analysis tool does not include the ability to test for multi-collinearity, the three models were then tested using SPSS V. 20. For the NCUWRST model two pairs of collinear variables were found and by sequentially deleting one of each pair, the model was found to be significant with 14 independent variables with an R^2 of 0.82 and an adjusted R^2 of 0.6. The final model arrived at

⁵1STEXP, PHDOS, UNIMEANHRS and ACWRTEACH – see Table 27 in Appendix 1 for definitions and details of correlations.

appears in Table 24 in Appendix 1. For the NCUSPST outcome variable, a two pairs of collinear variables were also found and after recalculation a model also with 14 independent variables was found with an R^2 of 0.88 and an adjusted R^2 of 0.72 (see Table 25 in Appendix 1). Finally, the PROBCOR model, was found to contain one pair of collinear variables and after deleting one of the pair, a model containing 12 independent variables with an R^2 of 0.71 and an adjusted R^2 of 0.44 resulted which appears as Table 26 in Appendix 1. All of the three models were noted to produce significance in the accompanying ANOVAs, even though not all the independent variables themselves reached significance. Nevertheless their combinations were able to account for between 71 and 88 % of the variance in the dependent variables.

It was also apparent that the independent variables making up the three models were not the same (even allowing for the difference in the numbers of variables making up the models) Table 27a in Appendix 1 identifies the 30 variables which appear in at least one of the models together with the actual models in which they appear and also shows their correlation coefficients with the dependent variable in the models in which they appear. As can be seen, none of those independent variables appear in all three models; ten appear in two and 20 appear in only one of the models. Table 27b also identifies the eleven independent variables for which the effects were individually significant within the three regression models (five for the writing model, four for the speaking model and three for the meta-linguistic awareness model). For the significant variables, only one (NFCOMMENG – „Attended non-formal communicative English classes“) appears in two models with the effects in those models being opposed. The other ten independent variables are significant in only one of the models. The factors found to be associated with the dependent variables were broadly distributed from among the variables describing the participants English learning experiences and their experience of using English and the apparent effects were not always in the direction that they would be expected. The three models are described below.

4.2.1. Model 1: Writing structure NCUs as the dependent variable (NCUWRST)

This model was based on the effect of various independent variables on the variance in the NCU%w in the participants' writings. The model incorporated 14 independent variables of which five were found to be significant at $p < 0.05$. Of those, three had a positive effect on the structural accuracy of writing (as represented by a lower structure NCU%w, the total hours spent studying English at university (UNIMEANHRS), having studied for a PHD partly in Thailand and partly overseas (PHDTHAI&OS) and having attended a vocational college rather than studying mathayom 4-6 (HIGHVOC). The other two had a negative effect on writing structure accuracy: having studied for a master's degree entirely in Thailand (MASINTHAI) and having taken non-formal classes taught by communicative methods (NFCOMMENG). The other nine variables whilst not independently significant, contributed to the overall ability of the model to explain the variance in the dependent variable. They were: studying mostly in English (in Thailand) for a master's degree (MASMAJENG) Studying for a PhD in a science subject (PHDSC), having had social and/or working experience of using English in Thailand (SOCENGH), and having had some tuition for academic writing (ACWRTEACH) all of which tended to be associated with higher structural accuracy. Conversely, a lower age of first experiencing English in formal classes (1STEXP) and having had pre-school experience of English (PRESCH), the total hours spent studying English in high school (HIGHMEANHRS), having studied for a PhD overseas (PHDOS), and having studied at a postgraduate level in a business-related area (PGRADBUS) were all associated with higher levels of structural NCUs in writing.

4.2.2. Model 2: Speaking structure NCUs as the dependent variable (NCUSPST)

This model was based on the effect of various independent variables on the variance in the structure NCU%w in the participants' speech samples. In this model there were again 14 independent variables of which four were found to be independently significant at $p < 0.05$: having majored in English in upper high school (HSENGMAJ) was positively associated with structural accuracy in speech, while

having studied at a postgraduate level in a business-related area (PGRADBUS), having studied for a PhD in Thailand (PHDINTHAI), and having experience of being taught by English native speaking teachers in subjects other than English (NSTOTH) were all found to be associated with higher levels of NCUs. Of the other ten variables which were not independently significant, the period of experience of English (EXPPER), having studied in a private high school (HIGHPRIV), having been an English major (BACENGMAJ) and having taken elective English courses (BACHELEC) at bachelor's degree level, having studied mostly in English (in Thailand) for a master's degree (MASMAJENG) or a PhD (PHDINENG), having experienced communicative teaching methods in English classes (COMTEACH) and the total number of hours spent learning English (TOTMEANCLHRS) were all found to be associated with structurally accurate speaking, while having studied for a master's degree (MASMAJENG&L1) or a PhD (PHDINL1&ENG) in a combination of Thai and English were found to be associated with higher levels of NCUs in speaking.

4.2.3. Model 3: Meta-linguistic awareness score as the dependent variable (PROBCOR)

This model was based on the dependent variable derived from the result of the participants' success in identifying the areas in which they produced the most NCUs when writing in English, compared with the actual order as detected in their writing. In this model there were 12 independent variables of which three were significant, two of which were associated with a higher level of meta-linguistic awareness: having studied for a master's degree partly in Thailand and partly overseas, (MASOS&HOME) and having taken non-formal classes taught by communicative methods (NFCOMMENG) while a lower age of first experiencing English (1STEXP) was found to be associated with a lower level of meta-linguistic awareness based on this measure. Of the non-significant variables, having attended a government primary school (PRIMGOV) having studied for a PhD in Thai (PHDINL1) or overseas (PHDOS) and having taken non-formal English classes specializing in writing skills (NFWRIT) were all supportive of better meta linguistic awareness, while having

studied in a private high school (HIGHPRIV), having majored in English in upper high school (HSENGMAJ), the total hours spent studying English in high school (HIGHMEANHRS), having studied for a master's degree entirely in Thailand (MASINTHAI), and having experience of being taught by English native speaking teachers in subjects other than English (NSTOTH) all had an adverse association with the participants' ability to detect their problem areas in English writing.

Of the potential variables not incorporated in any of the regression models, most were excluded by virtue of their correlations with the dependent variables being rather low or their being correlated with one of the independent variables included in the regressions at a level high enough to suggest that they were collinear with that variable and as indicated above, five variables were also excluded after the construction of the initial models because they were indicated to be collinear with other variables included. Among the notable factors found to have no significant relationship with the dependent variables were the participants' age and their gender as well as the number of publications in English of which they were the author or one of the authors. The results of the regression analysis will be discussed further in the Discussion chapter (Chapter 5) which follows.

4.3. Qualitative data from the interviews

In addition to the information from the interviews which was capable of being expressed in a quantitative form, there was much which it was difficult or impossible to express quantitatively or at least it would have been banal or trivial to attempt to express it in that way. This limitation applied to both what was openly expressed as well as to what was tacit or could be implied from what the participants stated directly and whilst it is not the intention of the researcher to indulge in the kind of interpretation of what the interviewees said advocated by Pavlenko (2007), implications were drawn where it was reasonable to do so and where that did not entail unreasonably enlarging on what was directly stated in the interview.

In presenting that qualitative data, Dornyei and Ryan's (2015) framework based on McAdams and Pals' (2006) new big five model of personality presented in

Chapter 2 will be employed although as Dornyei (2017 p.104) notes “...some propensities or attributes...have both trait-like and situated-state-like manifestations” and thus might reasonably be said to occupy a middle ground between Adams and Pal’s *Dispositional Traits* and *Characteristic Adaptations*. For instance, in discussing motivation which has been one of the main ways in which language learners have been studied, whilst underlying trait-like attributes such as openness to risk-taking/risk aversion and open-mindedness/conservatism are clearly likely to influence how motivated an individual is to learn a new language, all else being equal, as was found with several of the participants in this study, their degree of motivation changed dramatically when the situation in which they found themselves changed so that their motivated behavior became a *Characteristic Adaptation*. Similarly, in prioritizing the participant’s learner narratives as Dornyei recommends and in isolating and analyzing the effect of the participants’ experiences of learning and using English, the influence of the culture (or perhaps cultures, since arguably in the South of Thailand, the ethnic and religious plurality which exists argues against a monolithic culture) in which those narratives were developed cannot easily be distilled away from the personal experiences described.

Therefore, after a description of the similarities in the participant’s socio-cultural linguistic and educational backgrounds and the range of variation detected in them, the attempt to characterize the participants’ narratives that follows will present a classification of those narratives drawing on their trait-like and context-dependent attitudes and behaviors as described by them.

4.3.1. Socio-cultural and linguistic background of the participants

The participants’ descriptions of their backgrounds and upbringings presented a fairly consistent picture with no participant or participants standing out as having had markedly different upbringings. Although their socio-economic background was not specifically probed, it could be inferred from the descriptions that none came from what is often described as a “hi-so” (higher social class) background, indeed many described having rural backgrounds with parents who were farmers, notably LIZA who described her background thus:

“I grew up in a village... and I didn’t really have chance to go ... to many places, or even to go abroad. I mean, my parents study only to prathom 4, and they were farmers.”

At the other end of the spectrum, EVE described having to follow her father, who was a government officer to live away from her home town returning several years later to the same private school she had left at prathom 1 to find that the other children had been learning English for several years and were therefore ahead of her. For that reason, her mother arranged first a Thai, then an English native speaking private tutor which actually helped her to surpass her class-mates level of English within a year. Similarly, ZOLA’s parents were able to arrange private tuition from an American for her and her sister after she completed her bachelor’s degree in order to try to help her to study abroad in an English speaking country. Nevertheless most of the interviewees who studied abroad and even some who studied in Thailand made reference to having to rely on scholarships to do so:

“I got the scholarship... I applied the government scholarship.....then I just got the grant that specify the university in UK.” (ANN)

“Actually, I study master degree in Kasetsart University by that university scholarship...” (HAL)

“Well I tried to... do the TOEFL test...I didn’t pass. After three times, I could not pass that so I said, ok, I’m done, so I was looking for ...other countries that give me free scholarship to study there...” (ZOLA)

It was also notable that none of them indicated that they had travelled abroad during their school years with their families and INA who studied at Chulalongkorn University in Bangkok as an undergraduate made specific reference to her relative disadvantage in English against many of her classmates who had spent periods abroad during their school years:

“...comparing to my friends... who were really good. Their speaking skill was like fluent and many of them have been abroad ... for many times during summer vacation, you know, things like that.”

Similarly OYLE, who studied for a BSc at Thammasat University, said:

“ ...the student will come you know from over the country and some student they from Bangkok, and they have like a good in English skills...”

Even VAL who was an English major as an undergraduate in Pattani commented on how some of her peers who came from Bangkok had had a wider experience of English and had a better intuitive grasp of its structure at that stage:

“...when I study in university, when compare my ability in speaking with my friends from other school, especially from Bangkok, very different. They have a chance to go abroad to study with the foreign teachers and then they can speak more than me. Compare with me, I have to think about the structure first, how to speak out...”

Also common was an almost complete lack of any exposure to English outside of school, during their primary or secondary education and a typical comment was:

“It’s hard to, to meet or to talk with foreigner. I can say I never talk with foreigner when I was young.” (MON)

Even for ROB whose mother was an English teacher, it was strange to hear English spoken:

“But my mum ... I remember ... we going to... like a waterfall, and then my mum ... she talked with a foreigner. And at that time I think, she very good, you know, when I was a kid that time. Because not very often that Thai people can speak English.”

However, a small number remembered having very limited opportunities to use English in social situations while in secondary school. Notably, FENI who grew up in Phuket recalled:

“I remember in mathayom in high school ... my sister she... came back from Australia and she opened the tour company... And I have opinion (sic) to sit at

the tour counter at (name of hotel in Phuket)... But I am so shy at that time, but try to speak with foreign. I think they understand me maybe half of the conversation.”

And a few mentioned having met exchange students while in high school:

“My aunt, she accepted the exchange student from the US. So our house is not so far so sometime my aunt bring that exchange student visit my parents and me ... so we have a chance to speak, but very rare to meet.” (OYLE)

“I have a chance when I at mathayom 5; there are exchange student in our school but...

I forgot ... where he from. But we are 2000 students, but he only one. Just say, hi, how are you. Nothing more than that.” (JEN)

“In the last year (mathayom 6) I got my opportunity in Pattani ... a little ability to speak English in everybody... I think they (exchange students) help me very much.” (YVES)

All of the 26 participants had Thai as their first language and only HAL mentioned any experience of another language or culture other than Thai during his upbringing, recalling a period of working after completing his undergraduate degree:

“Actually I need to use Chinese, because all that business owner here or in Malaysia here, they speak Chinese... My mum, she was a Chinese girl, but, yeah, she just pressure me to study. But I just run away!” (HAL)

From a religious perspective most came from Buddhist family backgrounds with only two Muslims and one Christian. And among those three, two produced the lowest NCU%w in their writing with the third below the average for the sample, so having a minority religious background was certainly not a detrimental factor in their learning of English, Indeed for JEN, it gave her greater opportunities to experience English than most while she was an undergraduate as she shared a house with a European teacher, who was also a Christian and who although not a native speaker of English, used English to communicate with her and also involved her in social

activities with European visitors, which helped her to develop confidence in speaking English. Neither of the Muslim participant's spoke nor had any experience during their upbringing of Jawi (the dialect of the Malay language spoken in the far south of Thailand by the ethnic Malay peoples in Pattani, Yala and Narathiwat) and both were brought up in Thai linguistic backgrounds, as the following extract from the interview with INA illustrates:

Interviewer: *"And did, you grow up in a predominantly Thai environment?"*

INA: *"Thai environment."*

Interviewer: *"Totally?"*

INA: *"Totally Thai ... My first language, my only language is Thai"*

Almost all of the participants completed their secondary education prior to the widespread availability of the Internet and social media played no part in their upbringing (the youngest participant, EVE completed high school in 2000, and although there were social media platforms prior to that date they were not widely used. Facebook which was the first media application to become widespread in Thailand was not launched until 2004). Only one of the participants, INA recalled exposure to English television programs:

"I watch that program, Follow Me, on, what is that TV channel? It belongs to a university, an open university, in Thailand, ... it was meant for their student, but anyone can watch it, so I watched the program every single week ... And I watched another program by a Thai, it's a program about you know learning English from songs..."

CHAZ recalled being inspired by his teacher taking his class to see the movie Titanic in English while in high school:

"In mathayom 3 my opinion was changed. I feel good with English because teacher take all students to see the movie ... Titanic, we spent more than 3 hours, actually around 3 hours, half days, just looking at that movie. Teacher talking nothing ... Just let the students see..." (CHAZ)

Generally however those who recalled seeing western movies did so with Thai overdubbed or at least with subtitles as the English was generally too difficult for them to understand at that time and overall there was very little exposure to western media during the participants' early life or during their teenage years.

ZOLA was the only participant to mention an early interest in Western music although others mentioned it as a factor in their later development of English when they had a need to expand their ability to use it. ZOLA recalled:

“Ah, I started from prathom 5, prathom 6 ... at that time my parents ... turned on radio, turned on the music. At that time eighties, nineties .. I already know the Spandau Ballet, True, or... my neighbors also turned on video of Madonna at that time. So I can learn, I can listen from at that time. So ... I could get influence from that, and then I start to love, to listen foreign, songs.”

And about a later period when she was studying as a post-graduate, OYLE said:

“And also at home, I try to make environment ... in English, like for music... I love music ...Yeah, movies ... and also... some books, like text book and any other books. Alright, so I try to read it in English.” (OYLE)

Many of the participants recalled reading the Bangkok Post's supplement *Student Weekly* although that was generally in school and most said that it was difficult for them to read beyond short articles. Only CHAZ mentioned reading English as an out-of-school activity, reading the first *Harry Potter* book in English while in mathayom 6 with a few also indicating that they had been given English books to read in School.

4.3.2. Pre-university educational background

Figure 5 above shows the range of periods during which the 26 participants underwent formal-pre-university education and also delineates the periods during which different curricular regimes operated regarding the teaching of English. Most of the participants commenced their formal education during the period 1977 – 1995 during which the teaching of English was not mandatory at either prathom or mathayom level. However in practice, with the exception of WAN, who did not

commence learning English until mathayom 4, all who commenced their formal education during that period learned English for between six and twelve years. Six people commenced their formal education before 1977 when English was compulsory from prathom 5 and three subsequently began learning English at that stage even though by then the 1977 curriculum under which learning English was not compulsory was in force. Of the remainder, JEN and NAM both learned at private schools and began learning English at prathom 1, whereas GEE whose whole formal education was completed prior to the implementation of the 1977 curriculum did not start to learn English until mathayom 1, two years after the then regulations indicated that she should have done. Overall therefore, the curricular period(s) during which the participants underwent their formal pre-university education seems to have had little practical effect on whether and when they learned English with none of the participants, other than arguably WAN actually following the strict letter of the curriculums in force at the appropriate time, suggesting that the decisions about when students began learning English were very much at the behest of the schools which they attended.

The overall aspects of the participant's education, such as their school types and their hours of exposure to English classes are summarized in Table 3 in Appendix 1 some of which feature as quantified variables in the regression analysis detailed above in section 4.2. However, those present only a partial picture of the participants' English educational experience and this section and that which follows will attempt to summarize the common features of those experiences.

Whilst there were some deviations from the general pattern, the most common description of the participants' learning experiences in school were of learning in large classes taught by Thai teachers using traditional teaching methods involving teacher-fronted and controlled classes conducted mostly in Thai, initially concentrating on English vocabulary with a later shift towards learning grammar, and heavily biased towards written media. Typical of these descriptions were:

“Just that old traditional lecturing style ... Went into the class with the fifty or sixty students...and then talk, I think also the Thai culture, or Thai believe that no one keep asking teacher.” (HAL, prathom, private school)

“ I think 80 % they speak Thai or nearly 90 % to explain us in Thai, except the word that she has to pronounce such as cat, tree...they use Thai. Especially in prathom 5 and 6 because we started to learn grammar...and they have to explain in Thai.” (JEN, prathom private school)

“...so in the past, normally the teacher come with the chalk and they write on the blackboard, and then, yeah, teach from the thing that they wrote on the blackboard...I mean, my experience, teachers spoke Thai in the class, he start to write something on the blackboard in English and then we read it in English.” (LIZA, prathom, government school)

“Very traditional, you see what I mean? Ok, open the book, number one, ok? You start from this page...follow from the book... Ok, and then ask the students to do the exercises, and then give us the homework...” (XIAN, mathayom, private school)

“Normally the teacher used Thai to teach English, yeah, the same methodology, the same kind of, you know, reading from the book and then answering questions.” (INA, mathayom, government school)

“But the thing that ... the teacher teaches is English but the communication between teacher and student is Thai.” (SAM, mathayom, government school)

Generally the students in these classes were not expected to speak beyond the repetition of the language being taught and such speaking as there was often based on written cues rather than spoken models as illustrated by these extracts:

“...we just repeat after when teacher speak...” (SAM, prathom, government school)

“Normally use the book, from a book, teach the word, reading, speaking the word from a book.” (KEN, prathom, government school)

“Grammar, vocab, writing. I mean it’s rare for the teacher to focus to speaking. It’s rare. But sometimes they gave us opportunity to speak, but it’s rare.” (XIAN, mathayom, private school)

“I think it’s mostly focusing on how to remember the vocabulary without, speaking...” (OYLE, prathom, private school)

Most people remember the same emphasis on learning vocabulary at primary level:

“For the first ... two years, prathom 5, prathom 6 ... they try to teach the vocabulary, some vocabulary ...” (TOM, government school)

“First they let us to remember the vocabulary. Three word, bat, rat, cat. Yes the first lesson. And this is a book, something like that is the first experience that I have.” (BEN, government school)

“... the teachers always asked the students to write vocab, very often ... Maybe ten words. Then check from teacher...” (XIAN, private school)

“I have to do the vocabulary test ever week, twenty words per week.” (VAL, private school)

“...we spent like, three hours a week probably, studying English and mainly based on vocabulary and some basic grammar.” (LIZA, government school)

But at mathayom, the emphasis was increasingly on learning grammar as these extracts illustrate:

Interviewer: *“... at mathayom, what do you think was the main emphasis of what they were trying to teach you at that stage?”*

ROB (government school): *“Basically grammar.”*

“When I study at mathayom, like I say, reading, grammar, and can find the error sentence...” (MON, government school)

“I can’t remember ... whether I learned grammar in primary school because mainly I can remember only the way the teacher taught me vocabulary... what I can remember was that ... I started to learn grammar in lower secondary. They emphasize on grammar...” (INA, government school)

The books used in class were predominantly produced by the Ministry of Education but In general the students recall these being completely in English.

“The book that school use are made from, I mean produced by the ministry... Ministry of Education...For English, yeah, mainly in English.” (LIZA)

Interviewer: *“Ok, so you were working from a book.”*

SAM: *“Yeah, from a book.”*

Interviewer: *“Was that book in English or was it in English and Thai?”*

SAM: *“English.”*

Interviewer: *“And was it a commercial textbook ...?”*

SAM *“I think it’s from... all the subject is from government...”*

However, other forms of learning material were also mentioned including teacher produced handouts, newspapers, reading books, and songs and many of the participants mentioned learning at high school in language laboratory settings.

During their formal primary and secondary education, none of the participants described learning in school classes consistently using communicative teaching methods although some of the participants who attended private schools described learning in classes where there were greater attempts to have the students participate in communication:

“ I can remember, role play, mathayom 4. In English we have to prepare something like group role play. Yeah, group conversation, we have to prepare with our friends and do the role play in English. Enjoyable. It’s fun for me.”
(XIAN, private high school)

“I remember that, she (the English teacher) gave us ... the sentence that people use in the life...And then she asked student to remember all the sentence. And she asked us to, like two person...and then you ask and you answer...But the way that she taught ...it’s not naturally. It’s like we have to remember that sentence. Like... I don’t know ... I think I didn’t even know the meaning...” (OYLE, private high school)

JEN also described her first experiences of English during the first three years in a private primary school as consisting mostly of playing games, singing songs and other enjoyable activities which were intended to create a positive impression of English before more formal learning began in prathom 4, which she believes was a common pattern although not one practiced at that time in government schools:

“Mostly in private school in Thailand, they have something fun during the first three years. But in public schools the method of teaching might different... I know from my friend, they start from vocabulary first.” (JEN)

A number of the participant“s suggested that, particularly in high school, there was an overt focus on teaching being aimed primarily at equipping the students to pass tests, particularly university entrance examinations, and this was the case for students at both private and government schools:

“Actually the teacher taught us only on grammar. Not much on speaking ... Most of the teacher focused on grammar because they want us to pass the entrance examination... Even if the name of the subject is listening-speaking, but the teacher still focus on grammar. That’s because they wanted the student to pass the entrance examination which focus only on grammar, the entrance test. ” (VAL, private high school)

“ I think ... in mathayom 4 to 6 the emphasis on grammar... because they ... had to prepare the student for entrance exam.” (ANN, government high school)

“They teach you how to, to do the exam. But that is not very useful in the real life. (ROB, government junior high school)

The participants' descriptions of their attitudes to English varied between those who enjoyed learning and those who did not.

"English is always exciting because it's foreign language." (GEE)

"I still love English, I always love English." (ZOLA)

"They made me really hate English at that time." (HAL, in respect of upper mathayom)

"I don't like English, and don't know anything. I hate the grammar." (YVES, in respect of mathayom)

"In my opinion I hate the English. English is difficult to me." (PAT)

A number commented that they studied English only because it was a necessary part of the school curriculum and some also commented on the fact that the reason for learning in terms of the importance of English as a means of communication was not emphasized. Others however appreciated the importance of English while in high school:

"At that time my idea is, I think, that English is very important because everyone use English in the world so we can communicate with another people." (SAM)

In terms of outcomes, most participants commented on their limited abilities in English at the end of their high school education. For instance:

Interviewer: *"How good do you think your English was when you finished mathayom 6?"*

OYLE: *"It was terrible."*

Only one participant, XIAN was completely positive about her ability that time saying: *"I feel proud my English ability..."* and said that when she went on to university to study as an English major nothing she was taught in the first year was new to her.

Generally the experiences described are very much in accord with the findings of the report from the Chulalongkorn University Academic Service Centre in 2000

cited in Foley, 2005 which found that students were being inadequately prepared to use English partly due to their own failings but also attributable to teachers failings and that there were inadequate learning media and extra-curricular activities, with English being taught in over-sized and inefficiently managed classes with learning being assessed mostly by multiple-choice tests. The report also concluded that at the end of their pre-university education most students were unable to reach the standard of English needed to use it in real-life and for these participants that was generally their own assessment of their level of English at that stage.

4.3.3. English in the university and beyond

All the participants studied for bachelor's degrees in Thai universities and with the exception of those who studied English either as their major (four participants) or minor (one participant) subjects, their English classes were generally limited to compulsory English classes in their first and/or second years and most said that there was no exposure to English outside of those classes nor any need for its use. However, in a few cases there was a limited need to use English and four of those who were not English majors or minors elected to take English courses during their undergraduate degrees. SAM said that he took English classes because

“...for my idea at that time, I think English is very important... because if you want to understand science, so you have to be able to read English to understand what the scientists say.”

and he studied courses both pertaining to the English relevant to his main field of study as well as conversation classes in which communicative methods were used. He was exposed to English textbooks during his courses and both he and ZOLA had to read English journal articles for presentations which were made in Thai in seminar classes.

ANN had a similar reason for learning: *“I think it can help for ... my work in the future”* and she also had more immediate needs to use English as some of the textbooks she learned from were in English and she was also required to read English

journal articles. EVE, who also took elective English courses, was offered English textbooks as additional materials in her main field in her undergraduate course whereas QUIN's decision to take an elective course was to accompany a friend, although later she had part of her course taught by an American teacher who used an English textbook so had considerable exposure to English towards the end of her undergraduate degree course.

KEN, who did not take elective English courses, had to read English textbooks from the third year, and in the fourth year of his BSc had to produce an undergraduate thesis which although written in Thai required him to read English journal articles. TOM and LIZA were also required to read English textbooks and LIZA and ZOLA also read journal articles and LIZA also attended a short course of lectures in English by a visiting professor whose wife accompanied him and arranged social events for the students to gain experience of speaking in English.

For the English majors, other than for EVE, whose English courses were all taught in English (with the exception of a course in translation), there was a mixture of classes taught partly in Thai and partly in English by Thai lecturers and classes taught by non-Thais entirely in English. She and her fellow English major students were required to use English materials, to speak in and comprehend English and to write although not necessarily in an academic style. JEN who studied English as her minor, initially found studying with teachers who spoke mostly in English quite difficult but in her case her out-of-university experience of sharing accommodation with a European English speaker eventually made a substantial difference to her confidence and English ability.

For the other participants whose English experience as undergraduates was limited to taking compulsory classes, most left university with their English level little improved from their entry level as these comments illustrate:

"In my class I'm very good. But for English, ... I don't have any confidence"

(ROB)

I can understand, but, I think it's just not too poor... but ... cannot speak with the foreigner."

(QUIN)

"I think in this time my English is not well because some idea or some concept ... that I would like to talk with ... the foreigner, I can't express..." (NAM).

After completing their undergraduate degrees, two participants immediately took positions as English teachers at schools and one took a non-teaching job at a school. Two took positions as lecturers and/or administrators at universities four took jobs outside of the education realm where they were required to use English and six took jobs where English was not required. All subsequently studied for higher degrees, two part-time while still working and thirteen returning to full-time studying. Of those, three went to study abroad, one in an Anglophone country and one in a non-Anglophone country but where English was used as the medium of studying and in a social context. Only one went to study abroad in a non-English speaking country where she did not use English. The remaining eleven all continued studying in Thailand without spending periods working. Nine took master's degrees in Thailand and two studied immediately for PhD's. Overall, at the time of editing their articles, 14 of the 26 participants had spent periods of more than one year studying abroad in contexts where English was used, of which eight were in Anglophone countries, and six were non- or partially Anglophone countries (three in China or Taiwan, one in Germany, two in Malaysia). Three had spent periods of less than a year studying abroad, two in Anglophone countries and one in the Netherlands. As indicated above, only one had studied abroad in a country where English was not used either for educational or social purposes as well as spending a year in a non-Anglophone country where she had very limited opportunities to use English. Overall, therefore, 18 of the 26 participants had studied abroad with eight participants never having done so.

For many of those who had not specialized in English as undergraduates, it was at the time of commencing post-graduate studies that the need for English became apparent and that their motivation to learn seriously began.

“The English for me, it started after I have had the career I go to continue my study in master ... in Prince of Songkla University” (BEN)

“No background in English. Until I study Master’s degree at Chulalongkorn University, I try to improve my English.” (TOM)

“... from that time when I finished my bachelor degree ... at that time I think that English is very important. So I realize that my English is like I say, terrible, it’s not good. Like speaking is not good, writing is bad...” (OYLE)

For those such as OYLE who enrolled on international post-graduate programs at Thai universities which were conducted entirely in English that need was immediate:

“I decided to take the international program ... because I want to practice English. I realize that my English is you know... the communication is terrible, it’s not good”

For many the need extended to all four skills including writing their theses in English, and even those on programs conducted in Thai, were faced with reading textbooks and journal articles in English. As the following extracts illustrate:

“Most courses were conducted in Thai...But the material they use is English... I have to get up maybe, very early in the morning, maybe five o’clock, try to read by myself (with) an electronic dictionary. Because it helped me to translate.” (ROB)

“... one of the students is from China. So every course is teach in English, and the text book I have to understand English. I learned more.” (BEN)

“I need English reading do the literature review. A lot of literature review related to international journal. And then that time I ... maybe the pressure to push me to read more English, and then it help me to improve my reading skill.” (MON)

The need to improve their English skills was addressed in a variety of ways. For some their institutions provided support by way of introductory English courses r

courses related to the need to pass an English examination as a graduation requirement:

“The first the subject they ask us to attend English, how to say, to prepare for every student, for three month. So I attend that course...” (OYLE)

“Have a prepare course before study in the program. They offer about one or two months, for initiative (sic) course or preparing for us.” (EVE)

“Need English because have... test before you’re graduate... I need to learn one program in English.” (DEE)

“It’s compulsory to take one course, English course for graduate student. You have to pass this course.” (BEN)

Most however learned through their own efforts particularly by reading books and many journal articles in English, often using their advisers or friends to support them, particularly for those who wrote their theses in English:

“So I think that my writing’s improve because of reading, that I read a lot of journal...And also ... the second reason is from my advisor, because she correct my writing. So I learned from that.”(OYLE)

“And I have a friend ... she graduate from abroad and she helped me to edit my thesis.” (UNA)

Many of the participants had taken graduate English tests prior to studying either at Master’s or Doctoral level and some took preparatory courses:

“But before I got the scholarship, I need to learn English...for TOEFL.. because you need a score to submit with your application. I took a short course at, British Council in Bangkok.” (LIZA)

Others prepared themselves through self-study such as ROB:

“ I have to pass a TOEFL test. So then at that time, two or three months, I study really hard.”

OYLE needed to pass a TOEFL before studying for a PhD in Thailand:

“I need to pass for a paper based 550 ... So I decided to took that course...”

But she could not achieve that score:

“...at that time it’s Internet based ... they accepted at 213, so it’s equal 550. So I got, the first time that I took TOEFL after this course, it’s 209...so I need to study English course as a core course throughout.”

Others took introductory English courses provided by overseas universities as a result of not being able to achieve a sufficient TOEFL or IELTS score, such as HAL:

Interviewer: *“What score did they demand?”*

HAL *“6.5, I think.”*

Interviewer: *“Did you have a problem getting that score?”*

HAL: *“Oh, of course, in Thailand of course. So that’s why I have to go ... there to study English course in the university first.”*

And ANN *“... actually they’re accept at 550 but I got 520...And then finally when I went to UK, I have to take... the course”*

As well as BEN *“I have a requirement to take the Step-up program for 3 months.”*

Others took those courses voluntarily:

“I got an offer at that time, unconditional offer so I don’t have to take any course ... But I still ...don’t feel any confidence so I just tell the government, can I take an English course? I want to improve my English.” (ROB)

The need for English skills and in particular the ability to write in an English academic style became more manifest at PhD level since all but one of the participants who studied at doctoral level in Thailand produced theses in English as well as all those who studied abroad either in Anglophone countries or in non-Anglophone countries where the course was conducted in English. In many cases it was also at this time that the need to write English journal articles first became manifest:

“...so when I started my PhD that was the first time that I need to learn how to write academic paper.” (INA)

A number of participants said they found that they could write by adapting sentences from existing work by other authors and that they learned to write academic English in that way:

“I think ... writing the thesis is not difficult, because you can read from the article. For example, for some sentence you can take from the article... I use the template from the article and then I can adapt to research. So I can change the nouns, I can change the sentence, but the structure is the same I think.”
(SAM)

“I read the article in the journal ... I follow the previous article... I write the thesis in myself. I compare with the previous article.” (PAT)

Most gained help from advisors or those around them at their university:

“You know even my professor there she woman...She teach me English not a problem.” (CHAZ)

“Lucky me that I had a kind of advisor who really gave a good advice. And we had a post-doc in the lab who can guide you how to write properly.” (LIZA)

“My friend, my foreign friends help me very much. Finally supervisor edit...”
(EVE)

Others had to pay for professional editorial services, such as HAL:

Interviewer: *“Did anybody help you? Either formally or informally?”*

HAL: *“I need to pay.”*

And DEE: *“I write my article ... and then send to my best friends to proof again and then send to editor”*

Interviewer: *“And you had to pay for that?”*

DEE: *“Yes”*

Those who graduated later generally had to publish their work in the form of one or more journal articles with two currently awaiting the publication of one or more articles in order to complete doctoral degrees (one of whom had resumed working without graduating in view of the difficulty of doing so). This was not however universal nor specifically tied to study in or outside of Thailand, though later PhD candidates in Thailand have all had to publish work in order to graduate.

4.3.4. Attitudes towards publishing in English

Opinions about the need to publish in Thai ranged from a mildly resentful attitude that it was necessary as a Thai academic to have to publish in English through to those who felt that it was a challenge which they enjoyed.

“It’s not fair. It’s not fair for Thai people.” (YVES)

“I think not fair, but you know can be like international ... so most of people in the world can understand my work. Have to.” (ANN)

“If I write paper in English, I think difficult, very difficult. Because I spend ... long time to do one article or one papers...” (DEE)

“I love challenging situations. I want to challenge myself.... I think publishing in English is a challenge for me and I am happy with that.” (INA)

“It’s challenge, it’s important, it’s useful for you and you will get more chance if your English is better...if other people can do it, I can do it.” (OYLE)

Most however simply accepted it as a necessary part of being an academic with a variety of reasons behind that attitude:

“ I think it’s fair because before I can write ... a manuscript, I have to read a lot of work, of other people. If they written in their own language, I won’t understand or gain some information...We get information from others ...we have to share it back. I think it’s fair.” (ROB)

“I don’t think that’s fair or unfair, because English is the international language that every people that have to use, whatever, Thai people or Cambodia people or Malaysia.” (NAM)

“No, I don’t think it’s unfair. I mean otherwise Chinese, Japanese, I mean all the other country that have their own language would think the same. It’s your own choice.” (LIZA)

“I think it’s quite fair. It’s better than writing in Thai, because writing in Thai just only 60 or 70 million people can read ...but written down in English more than ...2000 million people can read.” (HAL)

“I think it’s ok, because now we cannot focus in Thai... because we must to open the world.” (EVE)

“I don’t think it’s fair or not, but if you want to prove that you have more ability than the other, you can do more than...” (QUIN)

With regard to their reasons for writing in English there were two clear choices, the first being that it was because of the requirements of their career and its reward system:

“Because of my career want in English more than Thai. And I cannot claim, I cannot use for my position.” (WAN)

“Because in my faculty they pay that 30,000 Baht for the English journal. They pay just only 3,000 Baht for Thai journal.” (HAL)

“I think it’s because the government force us to publish, that is why we choose to write in English.” (ROB)

“If you want to improve your career so you have to publish in English. So right now I’m only doctor. If you want to be professor, so you have to, to make more publications” (SAM)

Others, however, felt that there was a duty on researchers to share and promulgate their findings:

“If we not publish that means you do nothing. You spend many time, you spend amount of money, but ... nobody knows. If we not transfer the knowledge that means for now maybe we are just barbarians. (CHAZ)

“...I choose to write in English because I think for my aim, I would like more than Thai people to read my finding or my contribution.” (JEN)

“I always taught my student that publication should be the ... your first mission as a researcher ... after you’ve finished your work, you have to publish or you have to share your work to other people or other researchers.” (OYLE)

with some people subscribing to both views. For instance:

“It’s difficult to answer. The first priority is my career, at this time. In the past time, in the other ways, I want my work to help other people in the world but for now the situation is changed. ...my career is coming first. (BEN)

“You need to comply with the assessment rule ... if you want to get promotion...But when you do research you don’t want to see your result lying on your desk for ever, you want to get it published.” (LIZA)

It was also interesting that a number of people said that they preferred to write articles in English because they found it easier than writing in Thai, either because they had learned to write for academic purposes primarily in English, or because there were limitations when writing in Thai, particularly with regard to expressing scientific findings where Thai may lack adequate vocabulary. For instance:

“To be honest, although my English is not excellent, but I’m not familiar with writing the research in Thai.” (XIAN)

“... I think it’s quite difficult to write in Thai... In Thai, as you know we didn’t have past tense, future, we just add more word, more word, and it become a long sentence.” (ROB)

“Sometime. Technical term in Thai is difficult.” (PAT)

“Because I work in specialty and most of the technical terms is in English, when I publish in Thai I have to translate these words in Thai and, oh, very complicated.” (UNA)

“In Thai it’s very difficult... in the limit of the language. English language is ... very easy to explain straight for clear and concise.” (TOM)

Nevertheless several expressed a commitment to continuing to write some articles in Thai and supporting the vernacular academic sector:

“But if the paper or the data dealing directly with a local content and I want Thai people to read, I will write it in Thai and submit in Thai journal. (UNA)

“... so the people who cannot read, write English much they got right to know. So I will not throw that Thai language article away, for sure. So ... within ten,

I try to make the proportion eight to English journal, two to Thai journal. Even though just only going to get only 3,000 Baht per journal” (HAL).

To summarize, therefore, these 26 people who all shared a common L1 and a Thai socio-cultural background, have all been faced with the need to learn to operate in English because of their chosen careers within academe or due to the demands of their post-graduate education. In particular, all have had to learn to write about their field in an English academic style and to be able to publish journal articles in English in international and in some cases in Thai journals. All have succeeded in this although to varying degrees as judged both from the perspective of the degree of structural accuracy with which they are able to use the language and also viewed from the perspective of the number of articles in English which they have succeeded in having published. Nevertheless to have reached the level of English required for that purpose, starting as they did from such limited backgrounds in terms of exposure to English is no small achievement and within Thailand they form a part of a relatively small minority who have developed their English to such a high level or indeed have had the need to do so.

Having therefore looked in overview at their experience, the section that follows will attempt to typify their overall learning, attitude and motivational trajectories based on their personal narratives.

4.4. Classifying the narratives

Following the thematic analysis of the interviews with the 26 participants they were summarized and those summaries appear as Appendix 2 although in most cases details have been omitted or obscured in order to ensure the anonymity of the participants. For convenience the participants’ English writing technique preferences and their preferred learning tools are summarized in Table 30 below. The narratives described were then classified based on their main themes. The classification was based on *Learner types* of which ten were identified, *Help types* of which three were identified and *Motivation types* of which six were identified. Of those, all the participants were identified as having had instrumental motivation to learn English for the purposes of completing their education and in order to operate in an academic context, particularly in order to be able to write and publish in English. The

Motivation types were therefore defined accordingly to distinguish those who had evinced only instrumental motivation and those who had combined instrumental with some other form of motivation. The 19 types identified are broadly described as shown in Table 28:

The distribution of learner, help and motivation types among the participants is shown in Table 29. In order to check for relationships between the different types and the quantitative measures of English language ability, NCUWRST, NCUSPST and PROBCOR, Pearson product moment correlations were derived and these appear at the base of each type column in Table 29. As can be seen there were no significant correlations with any of the various types against the writing structure variable, NCUWRST, nor against the meta-linguistic measure, PROBCOR. However, two of the learner types were found to be significantly correlated with the spoken structure variable NCUSPST. Of these *Dedicated* learners were moderately negatively correlated with NCUSPST (i.e., they tended to make fewer structural errors in their speech) at -0.43 $p < 0.05$, $df, 24$ and *Reluctant* learners were positively correlated at 0.59 (i.e., they tended to make more structural errors in their speech, $p < 0.01$, $df, 24$).

In order to check the apparent lack of relationships, or in the case of the NCUSPTR variable the indication of a partial relationship, regression analyses were conducted for all three outcome variables (NCUWRST, NCUSPST and PROBCOR) separately for the *Learner*, *Help* and *Motivation* types (i.e. nine separate regression analyses). In eight cases no models were found which were significant linking the three areas of classification with the outcome variable, but for the *Learner* types a significant relationship was found to exist with the NCUSPST outcome variable and the indices relating to the model are shown in Table 31 in Appendix 1. As can be seen the model which incorporated all 10 learner types had an R^2 of 0.76 (adjusted R^2 , 0.60) and the ANOVA was significant with a p value of 0.004. However, of the ten predictor variables, only the *Active* learner type was individually significant, whereas neither the *Dedicated*, nor the *Reluctant* learner types had p values lower than 0.05.

Since the NCUSPST variable had also been found to be predictable from a model based on the quantified variables derived from the interview data with an R^2 of

0.88, the finding of a second viable model based on a different set of independent variables was surprising. However, it must be borne in mind that there was inevitably some overlap between the quantified variables used in the former model, which were an attempt to objectively describe the participants' history of learning and using English, and the *Learner type* variables based as they were on a subjective assessment of a combination of *Dispositional Traits* and *Characteristic Adaptations* (McAdams and Pals, 2006) based on how those experiences were described by the participants and particularly their descriptions of how they had reacted to those experiences. This point will be further addressed below in the Discussion section which follows.

The findings set out above from both the quantitative analysis and the qualitative information will now be discussed in the following chapter.

Table 28 Learner, help and motivation type definitions

a. Learner types:

Active Adapter	Actively seeks and uses means of learning English. Learned English writing and continues to write by adapting his/her own and others' previous work.
Dedicated	Made a conscious decision to specialize in English and/or to teach English to others.
Experiential	Has learned most by experiencing and using English particularly in communication with native or other speakers.
Reactive	Learns English mainly when the need presents itself.
Redemptive	Started by hating English; realized that she/he needs it; works hard to improve; finally achieved his/her goal and can reflect on how others face similar problems and how they can be overcome.
Realist	Recognizes own limitations and difficulties in learning English.
Reluctant	Learned and uses English only because it is required but finds it difficult to do so.
Self-propelled	Learned English mostly through own hard work/efforts at times actively disliking having to rely on others.
Struggler	Clearly finds English difficult, but persevered and used available resources to try to improve.

Table 28 (cont.) b. Help and c Motivation type definitions

b. Help types

Help-seeker	Turns to others when own resources are not enough.
Limited help seeker	Only seeks outside help when absolutely necessary and where she/he has no alternative; otherwise relies on own devices.
Self-helper	Generally tends to organize any help he/she may need him/herself rather than asking others to assist.

c. Motivation types

Instrumental only	Major reason for learning was associated with other learning or career needs.
Instrumental and approval seeking	Also motivated by approval from others, fears the embarrassment of being seen to fail. Actively enjoys the respect of others gained from being able to use English well
Instrumental and comparative	Also measures her/himself against others around her/him and her/him and motivation is affected (positively or negatively) by how she/he views herself against others
Instrumental and culturally inspired	Also holds a positive attitude about English due to an interest in some aspect of western culture
Instrumental and integrative	At certain periods also had motivation based on the desire to meet and interact with native or other speakers of English
Instrumental and materialistic	Also driven by knowledge that failure entails a loss of investment in learning

Table 29 Participants' learner help and motivation types and their correlations with dependent variables

	a) Learner types										b) Help types		
	Active	Adapter	Struggler	Dedicated	Experiential	Reactive	Realist	Redemptive	Reluctant	Self propelled	Help-seeker	Limited help seeker	Self helper
ANN	0	0	0	0	1	1	0	0	0	0	1	0	0
BEN	0	0	0	0	0	0	0	1	0	1	0	1	0
CHAZ	0	0	0	0	1	0	0	1	0	1	0	0	1
DEE	0	0	1	0	0	0	1	0	0	0	1	0	0
EVE	0	0	0	0	0	0	0	0	0	1	1	0	0
FENI	0	0	1	0	0	0	1	0	0	0	1	0	0
GEE	0	0	0	1	0	0	0	0	0	0	1	0	0
HAL	0	0	0	0	0	0	0	1	0	0	0	0	1
INA	1	0	0	1	0	0	0	0	0	0	0	0	1
JEN	0	0	0	1	1	0	0	0	0	0	1	0	0
KEN	0	0	0	0	0	0	1	0	1	0	0	1	0
LIZA	0	0	0	0	1	1	1	0	0	1	1	0	0
MON	0	0	0	0	0	1	0	0	0	0	1	0	0
NAM	0	0	1	0	1	0	0	0	0	0	0	1	0
OYLE	0	0	0	0	0	0	0	0	0	1	0	0	1
PAT	0	1	0	0	0	0	0	0	1	0	0	1	0
QUIN	0	0	0	0	1	1	0	0	0	0	0	1	0
ROB	0	0	0	0	0	0	0	1	0	1	0	1	0
SAM	1	1	0	0	0	0	0	0	0	0	0	0	1
TOM	0	0	0	0	0	1	1	0	0	1	1	0	0
UNA	0	0	0	0	1	1	0	0	0	0	1	0	0
VAL	0	0	0	1	0	0	0	0	0	0	1	0	0
WAN	0	0	0	0	0	0	0	0	1	1	1	0	0
XIAN	0	0	0	1	0	0	0	0	0	0	0	1	0
YVES	0	0	1	0	1	0	0	0	0	0	1	0	0
ZOLA	0	0	0	0	0	1	0	0	0	0	1	0	0
NCUW RST _r	-0.38	-0.09	0.06	-0.24	-0.22	0.17	0.01	-0.08	0.12	-0.19	0.17	0.13	-0.36
NCUSP ST _r	-0.32	0.35	0.29	-0.43*	0.00	-0.04	0.28	-0.30	0.59**	-0.15	0.12	0.08	-0.25
PROBC OR _r	0.20	-0.10	-0.03	-0.10	-0.08	0.20	-0.13	0.02	-0.02	0.19	0.03	0.03	-0.08

Table 29 c) Participants' motivation types and their correlations with dependent

	Comparative/instrumental	Approval seeking/instrumental	Culturally inspired/instrumental	Materialistic/instrumental	Instrumental and integrative	Instrumental only
0	0	0	0	0	0	1
0	0	0	0	0	0	1
0	0	0	0	0	0	1
0	0	0	0	0	0	1
1	0	0	0	0	0	0
0	0	0	0	0	0	1
0	0	0	0	0	1	0
0	0	0	1	1	1	0
0	0	1	0	1	1	0
0	0	0	0	0	0	1
0	0	0	0	0	1	0
0	0	0	0	0	1	0
0	0	0	0	0	0	1
0	0	0	0	0	0	1
1	0	0	0	0	0	0
0	0	0	0	0	0	1
1	0	0	0	0	1	0
0	0	0	0	0	0	1
0	0	0	0	0	0	1
0	0	0	0	1	1	0
0	0	0	0	0	0	1
1	0	0	0	0	0	0
0	0	0	0	0	0	1
0	1	0	0	0	0	1
0	0	0	0	0	0	1
0	0	1	0	0	0	0
	0.02	-0.02	0.00	0.27	0.21	-0.30
	0.01	-0.26	-0.37	0.06	0.04	0.05
	-0.09	-0.30	0.23	-0.02	0.33	-0.19

Note: * Significant at $p < 0.05$; **significant at $p < 0.01$

Table 30 Participants' preferred writing methods and learning tools

	English writing preference	Preferred learning tools:
ANN	Originally adaptive but now writes from ground up in English or works from her advisees original drafts. Sometimes but not always has help with proof reading manuscripts	Courses or self-study
BEN	Works from Thai original and translates with the help of an on-line translator. Seeks help with proof reading	Own effort, dictionary and on-line translator, newspapers
CHAZ	Cooperating with others. Writes in English. Starts with figures and tables. Divides sections between writers then they check each other's work.	Own efforts. Interacting with others
DEE	Translating from Thai (writing or thinking) to English. Seeks help from others whenever possible	Classes and tuition. Other people's help
EVE	Writes in English, seeks helps from others to improve her writings	Own efforts, reading English.
FENI	Thinks and writes in Thai then translates to English. Always looks for help with proof reading sometimes from more than one source	Courses, Internet-based media
GEE	Write in Thai first then translate/expand to English. Have it checked by a native speaker.	Formal courses
HAL	Prefers to write in English	Immersion, English classes, imitating journal articles for writing
INA	Thinks in English and writes straight from her thoughts. Reviews and revises her writing to improve it sometimes with the help of others	Formal courses, reading, Internet-based media
JEN	Reads material thinks and writes in English. Always seeks help with final proof reading from a native speaker	Experience and exposure, reading.

Table 30 (cont.) Participants' preferred writing methods and learning tools

	English writing preference	Preferred learning tools:
KEN	Reads and adapts work by others. Reacts to comments and suggestions by others, particularly his adviser and peer reviewers	Classes
LIZA	Writes in English or edits papers presented to her in English by others. Writes results and discussion first to create a "framework for the story"	Experience, monolingual dictionary.
MON	Writes English based on a Thai original or related document. Needs help with proof reading	English classes
NAM	Ground up in English based on reading other articles	Courses, Internet based resources notably lectures in English
PAT	Writes only in English. Adapts other articles he has written	Imitating theses/journal articles for writing
QUIN	English only; seeks help with proof reading	Practice by herself and from experiencing the use of the language by others
ROB	Prefers to write in English; started by modeling work on that of others	Radio broadcasts, TV, books Modeling on other people's writing
SAM	Adapts others and own work	Classes
TOM	Prefers to write in English	Grammar book, movies and TV documentaries, Modeling on other people's writing
UNA	Thinks (but not writes) in Thai then writes in English. Seeks help from native speakers with proof reading as this is often required by journals	Learning from experience with other English speakers, courses and you tube. Dictionary for writing
VAL	Ground up in English then get help from others, sometimes more than one person	Reading, TV & movies, Internet based resources
WAN	Previously wrote after drafting in Thai. Now thinks and writes in English but then revises many times. Seeks help with proof reading which she prefers to be personal	Own considerable efforts. Courses when necessary

Table 30 (cont.) Participants' preferred writing methods and learning tools

	English writing preference	Preferred learning tools
XIAN	Prefers to write in English	Formal courses
YVES	Originally thought and wrote in Thai then translated but has now shifted to thinking and writing in English then getting work proof read by a native speaker	Courses and experience
ZOLA	Thinks and writes in English then gets personal assistance with proof reading	Western music and movies, classes, dictionary or on-line translator

5. Discussion

In this chapter the findings relating to the research questions identified in Chapter 2 will be summarized and their implications discussed. The first research question asked was:

What general and individual patterns of non-conventional language use emerge from the analysis of papers written in English by Thai academics for publication, and in their oral recounts of their experiences of learning English?

This question was addressed firstly by identifying the main categories in which NCUs were found, the patterns of their distribution and whether these were independent of the distribution of the different word classes by which the NCUs were categorized. It was noted that the occurrence of NCU in the writings analyzed was heavily weighted towards four sub-categories of the *Structure* category, *Articles and determiners*, *Verbs*, *Prepositions* and *Nouns* accounting together around 80 % of the overall total of 8931 *Structure* NCUs recorded, and for almost 89 % of the local (word-level) errors. Further, within those categories the distribution of errors was also concentrated among a small number of NCU types. For *Articles and determiners*, the omission of the definite article, *the*, was overwhelmingly the largest issue and combined with the use of *the* in situations where no article was required accounted for 3188 of the 3495 tokens in that sub-category, or more than 90 % of the NCUs, and overall for more than 40 % of all the *Structure* NCUs recorded. This is in line with the findings of Nopjirapong (2011) in which, respectively, 42 % and 20 % of the article errors recorded in her study of 2nd year English major students at Srinakarinwirot University were due to the omission or unnecessary use of *the*. Similarly, in the *Verb* sub category, the largest area of NCU was in confusion between the past and present simple tenses which together accounted for 460 out of 1352 tokens, or 34 % of *Verb* NCU. This finding is broadly in agreement with that of Suvarnamani (2017) who also found that transposing these two tenses was the major source of verb tense error, in her study of 1st year undergraduates at Silpakorn University, accounting for over 73 % of such errors. For *Nouns*, the main source of errors was in respect of the misuse of the singular or plural forms of nouns, accounting for 1024 or almost 75 % of the 1369

tokens, and in the *Prepositions* sub-category 1302 or almost 90 % of the 1456 tokens were due to incorrect choice, omission or unnecessary use of prepositions.

Next, the study considered whether there was a significant relationship between the frequency of NCUs in certain word classes and the levels of the occurrence of those word classes in the works analyzed. It will be recalled that the numbers of words in each word class and the number of NCUs in those word classes was correlated at $r = 0.86$ suggesting that around 74 % (based on R^2) of the variance in the distribution of the NCUs between the word classes was related to the frequency of the use of those word classes, which, it must be recalled, was highly correlated among the 26 manuscripts at average levels of well above $r = 0.9$. This is not something which has been considered in studies in Thailand previously, nor does it seem to have been considered elsewhere based on searches in various databases using the search terms, *error analysis + word count /or/ word frequency /or/ part of speech frequency*. In fact such a high correlation would suggest that word frequency is the main factor in the distribution of NCUs across word classes.

The study then looked at how the patterns of NCU varied, or as proved to be the case, were consistent between the individual participants. In fact the occurrence of NCUs was found to be generally highly correlated inter-individually with the average correlation between the participants at the individual coding level for the 192 structure codings being $r = 0.76$ and all the individual correlations were significant at $p < 0.001$, even though the level of occurrence of those codings was found to be significantly different ($p < 0.05$ level, $F = 1.5671$, $df 25, 4966$) by ANOVA.

Further, at the sub-category level, the average correlation was higher, at $r = 0.82$ with all the individual correlations being significant at or above $p < 0.05$ and no significant difference being found in the level of NCU at the *Structure* sub-category level ($p > 0.05$, $F = 0.8453$, $df 25, 338$). This is a remarkably high level of consistency, bearing in mind that this group of participants were by no means homogenous in terms of their age, nor identical in their experiences of learning English, nor were they drawn from the same academic field, their only commonalities being their Thai L1 and cultural background and their occupations as lecturers or in a small number of

cases as students at PhD level. Therefore in considering below, the factors which might have contributed to the pattern of NCU detected, it must be borne in mind that the effect of those factors is not the main influence on the way in which the NCUs are distributed between the different word classes which is largely related to the frequency of word types in the manuscripts analyzed but is restricted to influencing the variance in the degree to which the participants written English is subject to NCU.

The study next looked at intra-individual differences in patterns of NCU, and despite the high level of inter-individual consistency noted above, this obscures the fact that individually, the writers ability to use different word classes was not consistent and the finding that the correlations between the rate of NCU viewed per 1000 words of the overall word count and that viewed per 100 words of each word type varied between $r = -0.2$ and $r = 0.87$ indicates that while some writers had a relatively (and significantly) even ability to use different word types, for others that ability was not evenly spread across the word types indicating that they suffered greater problems in certain areas than in others. Nor was the tendency towards even ability restricted to those who produced the lowest levels of *Structure* NCUs with two of the four authors for whom the correlations were significant (INA and LIZA, respectively $r = 0.87$ and $r = 0.77$) producing structure NCU rates %w which were below the average of 7.91 %w (2.92 and 6.09, respectively), while ANN was close to the average (correlation $r = 0.67$, *Structure* NCU %w: 7.93) with TOM (correlation: $r = 0.64$ *Structure* NCU %w: 9.38) well above average. The implication of this finding is that even at this relatively advanced level of performance, there is an underlying level of and intra-individual variation. This points to variation in the way in which individuals have acquired the language and continuing difficulties for some participants in using particular areas of English, and suggests intra-individual differences in the way in which people's language skills develop leading to different levels of mastery of particular aspects of the language in some people but not in others.

The study also analyzed samples of the participants' speech extracted from the interviews and based on samples of around 1000 words, a similar degree of

consistency was found with the patterns of NCU among the 26 participants being correlated at an average level of $r = 0.91$ and the patterns individually between the written and spoken data were also found to be correlated, significantly for 16 of the participants, at levels averaging $r = 0.57$ with a one-way ANOVA finding no difference in the distribution of NCUs among the 26 participants. These results again point to a very high degree of consistency among the participants ability to speak structurally accurate English with the patterns of NCU being very similar. They also suggest that for more than half of the sample there was a moderate or in some cases high similarity between the pattern of NCUs in their speech and writing and at the level of the grouped data the NCUs in the two mediums were significantly correlated at $r = 0.61$. Therefore, overall the patterns were similar even though the degree of similarity varied among the individual participants.

The second research question asked: How has the participants' English been shaped by the English learning experiences they report? In answering this question, the analysis of the data extracted as quantitative, scalar and binary variables from the interviews with the participants produced three significant regression models, one for each of the spoken and written samples, with dependent variables based on the structure NCUs detected, and one based on the participants meta-linguistic awareness judged on their success at identifying the major areas of English which had caused them to produce the largest numbers of NCUs in their written work. These models identified 30 variables out of approximately 60 for which data were extracted from the interviews which were predictive of one, or in some cases two of the independent variables. Those 30 variables included data relating to the participants' age at their first experience of English classes, whether they had had any prior experience of English, the total period during which they had been exposed to English, the types of schools they had attended at various stages of their formal education, their fields of major study at university, where and in what languages they had studied at post-graduate level, the number of hours they spent studying in English classes, whether they had experienced being taught by native English speaking teachers or of communicative teaching methods or had attended classes aimed at teaching them

English academic writing, and whether they had attended non-formal English classes or had social or working experience of using English in Thailand.

It is notable that none of the 30 variables appeared in all three of the models and the direction of the influence as reflected by the correlation coefficients between the dependent and independent variables was not always in the direction which would have been expected. For instance, both pre-school exposure and the age of first experiencing English classes were negatively related to writing structural accuracy (as measured by the number of NCUs in the participants' work) although the age of first experiencing English classes was positively and significantly correlated with the meta-linguistic awareness evidenced by the participants' being able to successfully recognize the areas in which they produced the greatest number of NCUs in their written work. However, neither of these factors had a significant relationship with the number of NCUs in the participants' speech although the total period of exposure had a positive and significant influence (i.e. there was a significant negative correlation between the length of exposure and the number of NCUs, so that generally a longer period of exposure to English was associated with a lower number of NCUs). These findings are generally consistent with Huang's (2015) finding that there is no advantage in L2 contexts of early exposure to formal learning, a finding which was supported by Hartshorne et al. (2018) but the finding that length of exposure (which in this study ranged from 19 to 43 years) does not agree with Hartshorne et al.'s suggestion based on native-speaker performance in their study, that there is a leveling off of grammatical learning after the age of 30.

The findings with relation to formal pre-university education were also not entirely as would be expected, with primary education history only showing a small supportive effect of meta-linguistic awareness from having attended a government school, while at secondary level attending a private school was supportive of speaking accuracy while negatively associated with meta-linguistic awareness. There was also a small positive effect on writing accuracy from having attended a vocational college rather than a senior high school, but the largest effect from high school was a significant and moderate negative effect from the number of hours spent learning

English at high school level on meta-linguistic awareness and a smaller negative effect on writing accuracy. Moreover, whilst taking English-focused courses in upper high school had a small positive association with structural accuracy in speaking, it had a negative effect on meta-linguistic awareness. Overall, this would suggest that the periods which these participants spent learning English at mathayom (high school level) tended to be associated with a negative effect on their meta-linguistic awareness and that their written English accuracy was promoted by attending either a vocational college or a private high school (rather than a government school) although the spoken accuracy of high school English „majors“ tended to be better than that of participants who did not major in English. This was largely supported by the comments made during the interviews in which almost all the participants identified a lack of learning during their high school years as summarized by their perception of their ability to use the language at the end of that stage of their education, despite the fact that all of those who attended high schools must have achieved at least passing grades in tests in English as witnessed by the fact that they were all able to go straight from high school to university.

At undergraduate level, there were moderate effects in support of spoken English accuracy from both studying as an English major or minor (correlation significant at $p < 0.05$) and having taken elective English courses while at university. At Master's degree level, English majors again seemed to benefit from a positive (and significant at $p < 0.05$) effect on their spoken accuracy as did those who learned in both Thai and English at Master's level, while studying for a Master's degree entirely in Thailand was negatively associated with accuracy in writing and also with meta-linguistic awareness, with studying partly in Thailand and partly abroad having a positive effect on meta linguistic awareness.

At PhD level, studying partly in Thailand and partly abroad had a positive effect on writing accuracy, whereas studying abroad had a small negative effect with a slightly higher negative effect on meta-linguistic awareness, and studying for a PhD in Thailand had a larger effect still on spoken accuracy. In terms of the language in which PhD studies were conducted, studying in English was positively associated

with spoken accuracy while studying partly or wholly in Thailand had moderate negative associations with spoken accuracy, and for those who studied partly in Thai and partly in English the correlation coefficient was significant at $p < 0.05$. Finally, at PhD level, those who studied in scientific fields generally had more accurate writing and overall for university education there was a very small association between the total number of hours spent studying English and accuracy in written English.

Otherwise, being taught at some time by native speaking English teachers in subjects other than English was associated with lower writing accuracy as was having attended non-formal classes taught by communicative methods, while having experienced communicative teaching methods generally was positively associated with spoken accuracy (correlation significant at $p < 0.05$) and having taken classes for academic writing was also positively associated with writing accuracy although at a fairly low level. Meta-linguistic awareness was supported by having taken non formal classes taught by communicative methods and also those where writing was taught. Writing accuracy was positively associated with having had social or working experience of using English in Thailand and there was a significant correlation (at $p < 0.05$) between spoken accuracy and the total number of class hours spent learning English.

In presenting the findings from the regression models produced, it is worth stressing three points. Firstly, the findings of clearly consistent patterns of NCU among the participants in their written texts with correlation coefficients based on the 14 sub-categories used in the analysis averaging $r = 0.82$ and in their spoken English averaging $r = 0.91$, point to a general consistency in the grammatical accuracy of both the participants writing and speech, underscored by the findings from the respective ANOVAs of no significant differences between the writing and speech data grouped at sub-category level (although ANOVAs conducted at individual code level did detect significant differences between the participants). Therefore there is a clear underlying consistency in the pattern of the NCU data among the participants.

Secondly, the major influence in the distribution of the NCUs identified in the analysis of the written texts between the word types used to categorize the NCU data

was the distribution of those word types in the original texts, accounting for around three quarters of the distribution and with the finding that the word distribution in the 26 texts based on the 11 part-of-speech-specific sub-categories used in the analysis of the data were correlated at an average of $r = 0.98$, this again points to an underlying consistency among the participants in their ability to produce structurally accurate English.

Therefore in analyzing the participants' experience of learning and using English to seek clues relating to the NCU findings, it must be stressed that what was found relates only to the variance among the NCU of the participants; in other words it cannot be viewed as being the underlying cause of the NCU but only of the way in which that NCU was different for each of the participants as reflected in their written texts and speech samples,

Thirdly, it must be stressed that these findings are highly context and sample specific and that it would be highly unlikely that the detailed findings relating to these 26 participants would be replicated exactly in a similar study using different participants. Nevertheless what these findings do illustrate is the broad range of factors that are at play in the development of individual language ability and how their interplay results in the language ability of each individual at any particular point in their development at which it is measured.

The third research question asked: What other factors could account for or have contributed to their English? In dealing with this question it is necessary to recognize that there are clearly two levels of such factors which need to be considered, based on the findings relating to the second research question. In the first place, there are factors which underlie the consistent pattern of language areas in which NCU was found. Secondly, there are factors contributing to the inter-individual variation in the participants' ability to produce structurally accurate writing and speech and in their meta-linguistic awareness. These include the personal learning and experience factors noted above which appear to have contributed between 71 and 88 % of the variance noted in the NCU and meta-linguistic awareness detected, based on the results of the regression analyses conducted on the objective data extracted from

the interviews. But there must also be other factors which account for the balance of the variance in the NCU and meta-linguistic awareness.

5.1. Underlying factors contributing to NCU

In seeking factors which underlie the consistent patterns of NCU detected by the analysis of the participant's writing and speech, it is necessary to examine those factors which are common to their experiences which might help to explain how their language usage has been so consistently shaped as to produce such high levels of correlation between the NCU they demonstrate. The following factors all appear as likely candidates:

- All the participants share a common first language (Thai)
- All were brought up in a Thai socio-cultural environment and none indicated any significant exposure to other socio-cultural systems
- None of the participants had any substantial exposure to English during the early years of their lives while their internal Thai language system was developing⁶
- None of the participants had any meaningful social exposure to English before entering university i.e., before the age of 18-20.
- There was also a very low level of exposure to environmental English (i.e. English media such as TV or radio, movies, music, advertising or signage) during that period.
- Although individual details of their pre-university education in terms of types of school and preferred fields of study varied, the underlying educational system they experienced was common to all with all but one studying mostly in the 1977 -1995 period during which English

⁶ Two participants encountered English at Anubahn at age 4 while another did so at age 5. Six first encountered English between the ages of 6 and 9 with the remaining 17 doing so from age 10 upwards.

was not strictly a compulsory subject at either prathom or mathayom level under the national curriculum

- The nature of the English classes they experienced throughout their school learning were fundamentally similar and were based on traditional teacher controlled learning using mainly written material with very limited access to natural or authentic English.
- All developed instrumental motivation (Gardener and Lambert, 1972) to learn English based on educational needs and/or on the need to write and publish in English thereby accumulating social capital (Bordieu, 1977, cited in Norton Pierce 1995) although the time of the onset of that motivation was not consistent.

In seeking to synthesize these factors into a consistent whole, it is notable that the areas identified as producing the largest numbers of NCUs in both the writing and speech of the participants (article use, verb tense usage, noun pluralization and preposition use) are all areas where English differs substantively from the Thai language, which, has no direct equivalent of the English article system, beyond the use of demonstrative adjectives crudely equivalent to the English *this, that etc.*, nor does it indicate tense by inflecting verbs, favoring discrete time markers to indicate the time of an action where it is required, although these are often omitted where the time can be inferred from the context in which the verb occurs. Moreover, nouns are not marked as plural or singular with number being added by way of a post-positioned classifier and although there are prepositions in Thai there is no one-to-one correspondence with English prepositions nor the situations in which they are used, nor are they used consistently to the same semantic effect and are often omitted. (Bootchuy, 2008). On that basis it would be difficult to conclude otherwise than that the participant's L1 was a major factor in the NCUs recorded through the cross-linguistic influences and perceptual blocking of differences between the L2 and L1 suggested in Beckner et al., (2009) with the result that their L1 shaped their performance in the L2. This is particularly so in the use of articles and Pongpairoj (2007) found that Thai L1 learners of English made significantly more article errors in

her study than did French L1 learners concluding that this was because French L1 learners "...have this functional category in their grammars..." (p. 116), whereas Thai L1 learners do not.

Moreover, while the findings of this study are based on the performance and experience of academics with considerable experience of English within their educational and professional careers spanning periods of between 19 and 43 years, the overall pattern of the occurrence of NCUs is strikingly similar to the summarized findings of the 33 studies included in Table 1 in Appendix 1, the participants in which were generally at a much earlier stage of their development and were (with the exception of the participants in Hutyamanivudhi's (2001) and Chakorn's (2005) analyses of business correspondence and Sreebenjapol's (2003) and Bootchuy's (2008) analysis of post-graduate theses) either high school or undergraduate students. In particular, it is notable that the three areas most often identified as producing errors in those studies are also the three areas in this study that produced the highest rates of NCU (*Articles and determiners*, *Verbs* and *Prepositions*) with the other major sub-category in the present study, *Nouns*, and in particular noun pluralization also being identified frequently in those studies. The consistency between earlier results and those in the present study suggests that as Thai learners progress from the intermediate phases of learning to more advanced stages at which they have a real need to be able to actively and accurately use the language, the areas of NCU remain largely similar and closely related to areas in which Thai and English language structure differ markedly.

It is therefore suggested that the consistency in the patterns of NCU evinced by the participants has arisen because their early language experience was exclusively of Thai, to which they were exposed in both family and social situations at home and in their communities, and by the time they encountered English which in most cases was not until after the age of 9, the Thai language structure was already cognitively entrenched (Birdsong, 2018). This dominance of Thai was further reinforced during their schooling which was conducted almost exclusively in Thai and by the influence of their social peers and elders with whom they communicated exclusively in Thai as

demanding by the norms of the Thai socio-cultural environment in which they lived. Therefore in learning English largely as a field of knowledge (i.e. not as a means of communication), English language structure („grammar“) was encountered mainly as a set of rules to be learned and was perceptually blocked (Beckner et al., 2009) from becoming automatized by their existing Thai language structure. By the time they commenced university when exposure to English began to increase (although not with the same time of onset or frequency, or from the same source(s) for all participants) they had thus passed the end of the critical period suggested by the recent study of Hartshorne et al. (2018) at 17.4 years during which the most efficient language learning is able to occur, and hence when the need to improve their English arose, this was at a time when developing an internalized English grammar was highly unlikely to be successfully accomplished. Therefore, the underlying grammatical structure of their idiolects retains the same Thai-language-influenced structural deficiencies. These are based both on a lack of exposure to English structure during their language formative early years as well as the on-going dominance of Thai language structure during the remainder of Hartshorne et al.’s suggested critical period. Despite this, however, many have been successful in developing a very high ability to communicate effectively in English and to write in an English academic style enabling them to publish work relating to their fields of academic endeavor in international journals,

5.2. Other factors accounting for inter-individual variation in NCU

The factors constituting the independent variables in the three regression analyses relating to the participants’ writing, speech and meta-linguistic awareness, broadly cover quantifiable factors relating to the participants’ exposure to English during their formal education and in other contexts in which they were exposed to or had the need to use English. The regression findings would suggest that these factors are associated with more than 70 % of the variance in the NCU detected in the writing and speech analyzed from this sample. Therefore other factors must account for less than 30 % of the variance, but that is nevertheless a not insubstantial contribution and if the participants exposure to and learning experience of English are not involved,

that would suggest that the remainder of the explanation of the variance must subsist in factors which are internal to the participants, i.e. dispositional traits and characteristic adaptations (McAdams and Pals, 2005) notably motivation to learn English and attitude towards the language. While this study attempted use the content of the participants' narratives relating to their experience of English to categorize them into a number of discrete learner, help and motivation types, in general, these were not successful in capturing any detectable relationship with the variance in their NCU of English structure or their meta-linguistic awareness. In particular, neither the help types nor the motivation types detected correlated significantly with the NCU and problem area ordering data. Among the three help types, only the *self-helper* category showed any suggestion of a relationship with the NCU data, correlating at $r = -0.36$ with the writing NCU%w and at $r = -0.25$ with the speech data, suggesting that self helpers were likely to have a lower incidence of NCU than help seekers and limited help seekers for whom all the coefficients were positive but at a low level, suggesting a tendency to higher levels of NCU. However none of the regression analyses based on the three dependent variables (writing NCU%w, speech NCU%w and problem order coefficient) produced viable models.

The categorization into motivation types suffered from the problem that all the participants had eventually had instrumental motivation to learn English based on the need to use the language in their education and/or careers so that it was necessary to categorize the participants who had expressed some other motivation as having a composite of that motivation and instrumental motivation, e.g., *instrumental and culturally inspired*, with the remaining participants who had indicated no motivation other than the needs of their education or careers who constituted a majority (20 out of 26) being categorized as *instrumental only*. However, that preponderance rendered it extremely unlikely that any significant relationship would be found between the instrumental only category and any of the dependent variables, which proved to be the case with correlations of respectively, $r = 0.01$, 0.14 and -0.05 for writing, speech and meta linguistic awareness respectively, while for the remaining categories since there were only six participants spread across four categories the somewhat higher (although not significant) coefficients for the *Culturally inspired and instrumental* and

Approval seeking and instrumental categories were not reliable indicators being based on only two and one participants, respectively. Unsurprisingly, therefore, no viable regression models could be constructed using the motivational types as independent variables.

The categorization into learner types was more successful in capturing relationships with the three dependent variables and hence partially explaining the variance in the participants' NCU and meta-linguistic awareness. However this produced something of a conundrum in that a viable regression model for the speech NCU%w dependent variable based on the learner types as independent variables was found which was significant at $p < 0.01$ with an R^2 of 0.76 (adjusted $R^2 = 0.60$). Since the regression for the quantitative variables extracted from the interviews had produced an R^2 of 0.86 and was also significant at $p < 0.01$, this appeared to suggest that the two models accounted for more than 100 % of the variance, which was clearly impossible. The explanation for this clearly lies in the fact that the data on which the two regression analyses were based were both derived from the same interview contents which were viewed from different perspectives, one based on quantized aspects of the participants' experience, the other based on assessing their trait-induced and adaptive behaviors and attitudes and categorizing them into certain subjectively (i.e. subjective to the researcher) assessed types. Therefore the two approaches had clearly captured common aspects of the participants' behavior since positive attitudes towards English resulting in *Learner type* categorizations such as *Active* or *Dedicated*, would likely be reflected in, for instance, having experienced a higher number of learning hours or a greater tendency to take elective or non-formal classes, whereas categories such as *Struggler* or *Reluctant* would tend not to adopt such behaviors. Clearly therefore the two approaches to analyzing the participants' narratives have both captured the same underlying trends in the data resulting in the two competing models for the speech data. This was also reflected in the correlation coefficients for the *Learner type* classification being generally higher and in some cases significant, with *Active* and *Dedicated* learners in particular showing a greater tendency towards lower NCU%w in both their writing and speech and better meta-cognitive awareness,

whereas, particularly for speech the *Reluctant* learner type showed a significantly greater tendency to produce a higher NCU%w ($r = 0.59, p < 0.01$ df, 24).

Overall therefore whilst the qualitative assessments of learner, help and motivation types do not support a definite finding that trait-like and adaptive behaviors accounted for the balance of the variation in the NCU and meta-linguistic variables, a tentative hypothesis would be to attribute around 70-80 % of the variance in those variables to quantifiable aspects of the participants' exposure to and learning of English. These include their length of exposure to English, aspects of their formal education to graduate level, and particularly to their post-graduate education and whether it involved learning in English-speaking contexts or in using English as the medium of study. The balance of 20-30 % of the variance would seem likely to have its origins in characteristic traits and adaptive behaviors evinced by adopting positive attitudes to learning English, being self-sufficient in their learning and being motivated through their educational and career needs to use English as well as in other motivational tendencies.

5.3. Synthesis of the findings

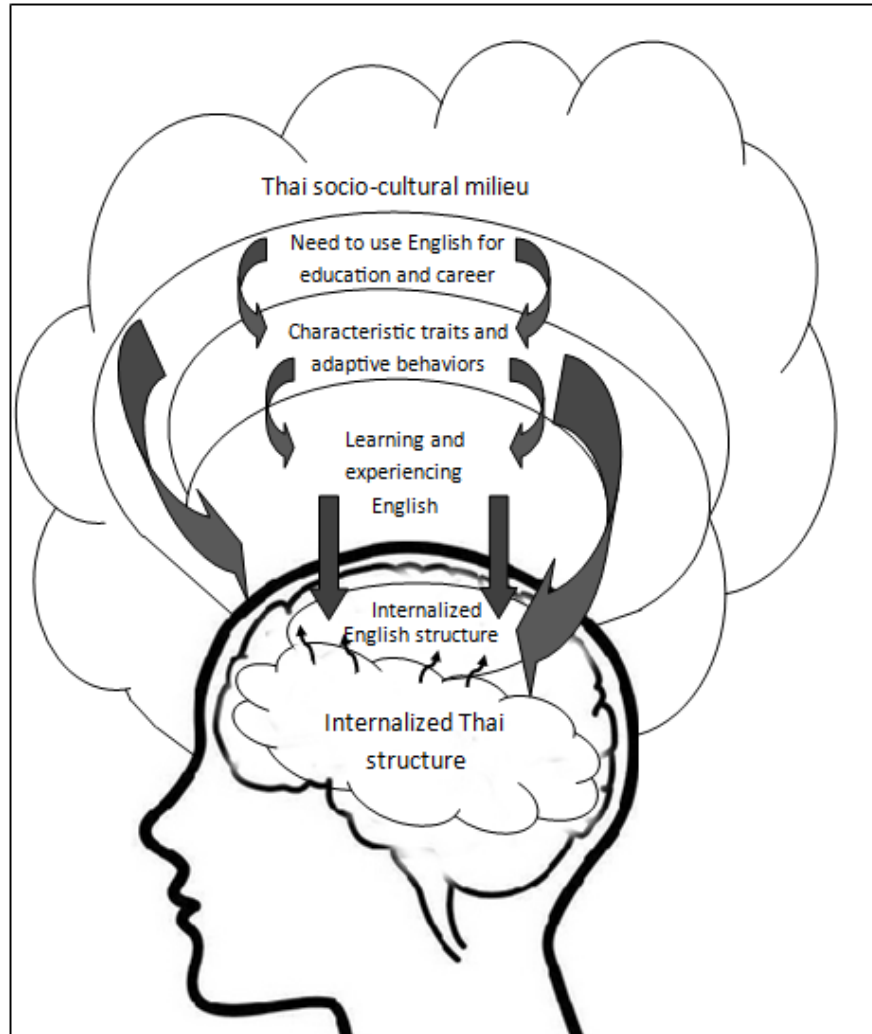
Taken together, the quantitative finding of a close similarity in the pattern of structure NCU among the 26 participants, points to a substantial influence on their English from their shared Thai language, and their socio-cultural and educational background. Nevertheless, the finding of significant variance in the extent to which that affects both their writing and their speech as well as their awareness of the aspects of the language which present them with the most problems, is more likely to be primarily linked to their exposure to and experiences of learning and using English and only to a lesser degree to their characteristic traits and adaptations as expressed through their language learning behaviors and attitudes, and their motivation. Moreover, that motivation is particularly likely to have arisen through the needs of their education and careers as academics within Thai universities.

This range of influences suggests that the development of their English and in particular their failure to develop the kind of automatized internal grammar which

native speakers possess, is underpinned by the hierarchy of influences illustrated below in Figure 6. These influences date back to their infancy, when, as all human children they possessed the innate ability to learn language (Pinker, 2003; Birdsong, 2018), which they did on the basis of the stimuli presented by the language environment around them. In the case of all the participants, this environment was exclusively Thai, with the result that by the time they were exposed to any English whatsoever, which for most was after the age of nine, they had already developed an internalized language structure based on a neural architecture, for the Thai language, which was markedly different to the structure of English. Thus when exposed to English the structure which developed was largely based not on the grammatical structures which a native English speaker would have developed, but on the existing structure of Thai grammar.

This situation would have been constantly reinforced by the socio-cultural environment around them in which the overwhelming means of communication and information transfer was through the medium of Thai, with no appreciable environmental exposure to English occurring other than the input in their English classes, most of which were anyway conducted using Thai as the medium of instruction. Even when later during their learning they were presented with aspects of the grammatical structure of English, this was as a set of overt rules rather than as a naturally occurring phenomenon with the result that though they might have been aware of the existence of, for instance, articles, verb tenses and noun pluralization the extent to which those aspects of language became a part of their developing *ideolects* was limited by the competing influence of the Thai language structure which was by then dominant. Moreover, this situation prevailed for the whole of the CP during which language learning occurs most effectively (Hartshorne et al., 2018) and even for those who had developed an interest in learning English before that CP ended, the period during which that interest resulted in an increased exposure to English was limited and the time spent learning English was both restricted and still framed in a presentational environment dominated by the Thai used in class as the medium of instruction. Outside of those classes, Thai continued to dominate and to reinforce its cognitive dominance in the sphere of language.

Figure 6 The hierarchy of influences on Thai learners internalized English language structure



The second layer of the hierarchy in the developmental structure of the participants' English is the variance in the growth of an internal English structure based on the learning of and opportunities to use English that they experienced, which in turn were affected by the third layer of the hierarchy, their characteristic traits and adaptive behaviors, which also had a direct although lesser effect on their developing internalized language structure. The adaptive behaviors were in turn influenced by the fourth layer which was the need to use English in their education and career which developed at different times for different learners and this also had a direct effect on the opportunities to learn and use English as well as an indirect effect through their motivational and attitudinal adaptations which in turn led to learning behaviors.

This nested structure is illustrated in Figure 6 and it can be seen that the hierarchy represents the interplay of biological factors and socio-cultural factors with the outer layers of the hierarchy representing socially motivated behaviors which are then operationalized through innate characteristic traits and adaptive behaviors resulting from them, which in turn result in socially operationalized learning behaviors, which then cause internalized cognitive and neural structures to form, which in turn compete with and are heavily influenced by the dominant structures of the Thai language formed from infancy. The model of learning proposed supports the notion of second language development being a complex adaptive and dynamic system involving the interplay of a wide range of learning-related factors combining with the learners' innate characteristics and their socially-motivated behavior to produce an internalized language structure, with their Thai language structure creating attractors in those areas where the languages differ which tend to distort the resulting English structure and result in a distinctive idiolect incorporating many Thai-language-like features, and thus differing from a typical native-speaker idiolect in a characteristic way.

It must be stressed that the detailed findings of this study are highly specific to the sample of manuscripts analyzed and to the participants' narratives relating to their experiences of learning and using English, and also that those participants and their experiences are highly specific to the linguistic and socio-cultural contexts in which they are situated. Thus, it is highly unlikely that in a similarly-sized sample even if it were drawn from a similar socio-cultural and academic context would produce precisely the same outcome in terms of the exact factors which were found to be associated with the variance in the NCU data. Further, were the sample to be drawn from a different context than academics or from people who learned English as a second language from infancy, then the balance of influence between educational and experiential factors and that deriving directly from trait-induced and adaptive behaviors would be unlikely to be the same. Moreover, the findings are highly specific to their linguistic context and a sample of learners with a different L1 would quite probably produce a completely different pattern of NCU, even assuming that it was found to follow such a closely correlated pattern as was found in this study.

Therefore, it is not the intention of this researcher to claim that the detailed results of this study can be generalized outside of the sample, except insofar as they are in broad agreement with other studies which have found similar results in the past in Thailand among other groups of participants. Nevertheless, in suggesting support for CDST as an appropriate theoretical framework for SLA, the model of language development suggested above and illustrated in Figure 3 is proposed as a potentially useful paradigm for future generalized studies of second language development in non-immersion contexts.

5.4. Implications

The first implication of this study is at a global level and relates to the general question of how far individual studies can reach conclusions about the way in which second language development occurs. Larsen Freeman (2017, p. 56) has proposed that complexity should be regarded as a meta-theory which “informs object theories” and notes (p.40) that: “Complexity theory claims that natural systems are complex and that there is therefore no simple algorithm that can be used to explain the phenomena of nature.” The findings of this study clearly support that position and the relevance to CDST to SLA and point to the futility of seeking simple reductionist explanations of how language development and in particular SLA occurs. Perhaps the reason why so many “object theories” of SLA have been proposed but found wanting is simply that there are no simple “silver bullet” solutions and that the development of a second language is a such a complex process involving such a wide variety of biological and socio-cultural factors that varying any one of them is unlikely to result in any consistent effect on the whole process. Moreover, the effect of the learning context in terms of the socio-cultural, educational and linguistic background of the learner as well as their cognitive capacities, their need to learn and their motivation for doing so are so specific that it is tempting to suggest that no study’s findings are truly generalizable beyond their immediate context and that the future direction of SLA research should be context specific studies of groups such as that studied in this research who share similar backgrounds, experiences, needs and motivations. Only then is it likely that realistic conclusions about influential factors in successful

learning can be drawn and applied through practical measures based on those findings.

The other implications of this study arise at a local level and relate to the teaching of English and its use in academic contexts in Thailand. The first such implication can be drawn from the analysis of the manuscripts and the consistent pattern of structure NCUs found as well as the similar though not identical pattern found in the spoken samples from the interviews. Those particular areas identified as giving rise to the greatest number of NCUs bear a disproportionate importance for Thai academics who aspire to publish their work in English. This is firstly because the word types identified as problematic are those which constitute the main types of words employed in writing academic articles. Moreover, based on the congruence between the findings of previous studies with Thai learners of English at earlier stages of development and the academics in the present study, those are the areas which give rise to the largest numbers of errors in written work by Thai users of English at all levels from high school upwards. Pedagogically, this means that a relatively small number of areas, particularly the use of the definite article *the*, the use of verb tenses and in particular the present and past simple tenses, the use of plural and singular nouns, and preposition use and collocations generally need to be targeted, not by the teaching of rules as was in the main experienced by the participants in this study but by usage-based instruction, where learners are exposed to correct usage and themselves experience using those aspects of the language correctly, with frequent feedback to prevent the possibility of errors in these areas becoming entrenched at later stages of their development.

The second local level implication which can be drawn from the finding of intra-individual variation among the participants is that learners cannot be assumed to develop language skills in the same way and that particularly. Therefore, where targeted remedial instruction is attempted as had been experienced by a number of the participants in this study, it is essential that this be based on a needs analysis to identify whether there are specific aspects of English which each individual learner has failed to develop adequately and which require specific remedial attention. If that

is found to be the case targeted instruction would be desirable. Alternatively, if their development is more even across the whole spectrum of English usage, then a more general remedial course would be appropriate.

The third local implication relates to the problems encountered by academics seeking to publish work in English and the findings of this study raise a question mark against two of the assumptions made by Jaroongkhongdach et al. (2012), that Thai academics generally can call on assistance from native speakers and those with better English skills, and that ELT professionals in particular have satisfactory levels of English writing skills, so that those factors are not an influence in the generally low number of publications by Thai academics in English. To deal with the second point first, there were four past or present ELT professionals among the sample in this study (GEE, INA, VAL and XIAN) representing 15 % of the sample, so above Jaroongkhongdach et al.'s figure of 8-10 %. They had structure NCU %w of respectively 14.7, 2.92, 7.35 and 8.15, thus literally spanning the whole range of NCU rates of the participants in this study, so the suggestion that ELT professionals necessarily have a higher level of English skills is clearly not supported. Moreover, the importance of academics having access to English language assistance was clear from the comments that almost all the participants made in the interviews to the effect that they regularly needed to have their work reviewed, if possible by a native speaker before submission to high-impact-factor journals, since otherwise their work would be either rejected or returned for the purpose of improving the English. This is obviously, therefore an important issue for Thai academics seeking to have their work published internationally and there are scant grounds for assuming that assistance with the English language is readily available to all academics. Rather, this study should emphasize that universities who increasingly require their faculty members to publish in English need to provide formal mechanisms for the authors to obtain the language support they need rather than leaving this to each person to organize casually as best they can. It seems more likely to this researcher that the burden of writing in English is a considerable disincentive to many Thai researchers whose work is worthy of publication and that contrary to Jaroongkhongdach et al.'s assumptions, this may be

a contributory factor in why relatively few articles are published by Thai academics in international journals.

5.5. Significant findings

Finally, here is a summary of the study's most significant findings:

- A clear and significant pattern of structure NCU was evident from the comparison of the data derived from the participants' writing. This suggested that similar causes were associated with the pattern of structure NCUs.
- The grouped structure NCUs were highly correlated with the number of tokens of each word type in the manuscripts suggesting that 75% of the pattern detected was directly related to the distribution of word types in the manuscripts.
- The main structure sub-categories giving rise to the NCU were the use of articles and determiners, verbs, prepositions and nouns which accounted for about 80% of the structure NCUs. Within those areas a small number of error types gave rise to almost 90% of the NCUs.
- The main NCU types all arose in areas where the structure of the Thai and English languages does not correspond and the type of errors being made were indicative of a mother tongue effect from the participant's L1. This finding is also in agreement with most of the recent error analysis studies which have been conducted in Thailand. This suggests that the other 25% of the pattern of NCU detected in the participants writing was associated with this mother tongue effect.
- It is suggested that the mother tongue effect is the underlying cause of the NCU but that the way it is expressed in any text type or medium will vary according to the distribution of word types in that text .
- A similar although not identical pattern of structure NCUs was also found in the participants' speaking and overall the writing and speaking NCU data were moderately correlated.
- The same four structure sub categories, articles and determiners, verbs, prepositions and nouns again accounted for 80% of the structure NCUs although the relative proportions of the four sub-categories were different.

- At an individual level there were a range of correlations between the participants speaking and writing structure NCUs with not all being significant.
- There was variation in the extent of structure NCU between individuals in their writing which was significant at the level of the individual codes used to classify the NCU as well as in their speech. This suggests that individual factors were associated with the extent of structure NCUs.
- Quantifiable data relating to the participant's experience of learning and using English extracted from the participant interviews and used in multiple regression analyses with the NCU data as dependent variables produced significant models for the speech and writing NCU data explaining more than 80% of the variance in the extent of NCU. A third regression model based on meta-linguistic awareness explained 71% of the variance in that dependent variable.
- The independent variables explaining the variance in the extent of NCU and the level of meta-linguistic awareness were not the same in the three models although they broadly covered the whole range of variables extracted relating to the participant's experiences ranging from their early experience of English, their primary secondary and university education, periods spent using English overseas or in Thailand for education or social purposes, non-formal English learning and their experience of publishing in the English language.
- It is suggested that these experiential factors account for between 70 and 80% of the variance in the extent of the NCU and meta linguistic awareness measured for this sample of participants.
- The qualitative analysis of the interviews with the participants indicated that the participants came from similar Thai linguistic and socio-cultural backgrounds and had broadly similar experiences of learning English during their primary and secondary education. However, their attitude towards, and success in learning English during those periods varied as did their experience once they attended university. The need to use English, particularly to read textbooks etc. and to write in academic English became most evident when they commenced post-graduate education and that need was dealt with in a variety of ways influenced by the participants' dispositional traits and characteristic adaptations.

- It is suggested that the variance in the NCU/meta-linguistic awareness data beyond that explained by the participants' experiences of learning and using English can best be accounted for by factors associated with the participants' personal characteristics including their motivation to learn, the learning strategies they adopted and their aptitude to learn languages. It was noted however that this latter factor could have been affected by the closing of the critical period for effective language learning recently proposed as occurring at 17.4 years.
- The study broadly supports complexity theoretic approaches to understanding second language development.
- The study's results are noted as being specific to the sample of manuscripts and the participants who took part in the study and it is suggested that the crucial role of learners' socio-cultural and linguistic backgrounds, the learning situation, and the highly specific experiences they encounter in learning and using English render, it difficult for any findings from specific samples to be generalized beyond their immediate context.

6. Conclusion: summary, contributions and limitations

This study analyzed the suggested changes recommended by a native-speaking editor to the texts of 26 pre-publication manuscripts written by Thai academic authors, in order to establish if there were patterns in the NCU of English produced by the authors. The analysis was conducted based on the numbers of tokens falling into individual codes based on a purpose-developed coding nomenclature with the codings then being grouped into six different categories of NCU type covering language structure (*Structure*), lexical issues (*Lexical*), rhetorical style (*Style*), *Cohesion*, *Information content* and *Miscellaneous*, with the language structure category being further sub-divided into 14 sub-categories.

The results of the analysis showed considerable variation in that the rates of occurrence of NCUs in the manuscripts. Although the numbers of NCUs per participant when compared by ANOVA were significantly different when compared at individual code level, there were no differences when they were compared based on the data grouped by the 14 *Structure* sub-categories or by the six main categories. Moreover, there were high and significant correlations among the 26 manuscripts based on both the individually coded NCUs and the grouped NCU data.

The analysis of the coded data showed that *Structure* was for all the participants the largest category. Among the 14 *Structure* sub categories, *Articles and determiners* accounted for the largest number of NCUs, with *Prepositions*, *Verbs* and *Nouns and Compound nouns* also accounting for substantial percentages.

Within the 14 sub-categories it was found that certain codes accounted for a disproportionate number of the NCUs. In particular, problems with the use or non-use of the definite article, *the* and with the omission of articles in obligatory situations were major problem areas, as was the correct selection and use of prepositions. Within the *Verb* sub-category, the major problem area was in distinguishing between instances of use of the present and past simple tenses, with verb form generally being a significant problem and passive voice formulation also causing problems for these authors. Finally, for the *Nouns and compound nouns* sub-category, the overwhelming

majority of NCUs arose from confusion between the use of singular and plural forms of common nouns.

The original un-edited manuscripts were then analyzed to determine their composition based on parts-of-speech and the *Structure* sub-category NCU data was adjusted into ten word types and it was found that the contents of the 26 manuscripts based on word types were closely correlated. Further the correlation between the manuscripts word-type content and the numbers of NCUs falling into those word types was also high although, intra-individual comparisons of how the NCUs from each manuscript fell into the ten word types and the numbers of those word types in their manuscripts produced widely varying correlations with only four authors producing significant correlations, indicating that their ability to use different word-types correctly was spread evenly. For the remaining 22 authors the correlations were much lower and in some cases negative indicating that their ability to use different word types correctly was very uneven.

Following the analysis of the manuscripts, the 26 authors were interviewed with a view to obtaining details of their experiences of learning and using English. The interviews were recorded and transcribed then subjected to thematic and content analysis. A section of the interview was also analyzed for structure NCUs based on the same 14 *Structure* sub-categories as had been used for the analysis of the manuscripts. That analysis while again finding a wide range of NCUs per 100 words, found no significant difference among the participants. and correlations between the speech sample NCU data for the 26 participants were found to be generally slightly higher than those for the writing data. Intra-individual comparisons between the writing and speech NCU data produced moderate to high correlations for the participants with half of the correlations being significant. Among the *Structure* sub-categories, the same four dominated the NCU data as had been the case for writing although the *Verb* sub-category was larger than *Articles and determiners* which was in turn greater than *Prepositions* and *Nouns and compound nouns*.

During the interview the authors were also asked to order a number of areas of English according to how difficult as they perceived them to be. The areas were

selected individually based on which areas had accounted for the largest numbers of NCUs in their writing. Their perceived order and the actual order was then compared based on the Spearman rank order coefficient which was taken as an indication of their meta-linguistic awareness. In general, the authors were not very successful at identifying the areas which caused them most problems.

The contents of the interviews were first analyzed quantitatively and details of the authors' English language education and use were reduced to a number of fields which were then tested as potential independent variables in multiple regression analyses with the writing and speech NCU data and the meta-linguistic sensibility coefficients as the dependent variables. Models were constructed for all three dependent variables with R^2 of above 0.7, all of which were significant based on ANOVAs. For the speech and writing models there were 14 independent variables each, while for the meta-linguistic data, there were 12 independent variables. However it was notable that the variables were not the same in the three models with a total of 30 variables featuring in the three models of which only 10 featured in two models and none featured in all three.

The contents were then thematically analyzed based on McAdams and Pals (2006) New Big Five model as adapted to language learning by Dornyei and Ryan (2015). This resulted in a qualitative summary of the authors' narratives and the construction of a broad model of their trait-like and adaptive behaviors based on ten learner types, three help types and five motivation types. Attempts to use these classifications in correlation and regression analyses with the same dependent variables as had been used in the quantitative analysis were in general unsuccessful but for the speech NCU data a viable regression model with an R^2 of 0.76 was found with the ten *Learner types* as independent variables which was significant based on the ANOVA. Although this seemed to conflict with the model created using the quantitative data, it was pointed out that there was inevitably some overlap between the quantified variables, which were objectively derived, and the *Learner type* variables which were based on a subjective assessment of how the authors had described their English learning and use experiences and how they had reacted to

them and that this explained why it was possible to derive a second viable model for the speech NCU data.

The study's main conclusions are:

- That the four language structure areas identified as being responsible for around 80 % of the speech and writing NCUs are clearly associated with structural differences between the Thai and English languages in these areas and that LI interference and perceptual blocking is therefore the main causative factor in the underlying consistency of the NCU detected.
- The largest part of the variance in that NCU was a result of a combination of learning and usage experiential factors which based on the regression models accounted for between 71 and 88 % of the variance.
- The balance of the variance seems likely to be the result of the participants' characteristic traits and adaptive behaviors which would have both contributed indirectly through their learning and usage experience as well as contributing directly to the variance noted in the data.

A model of how the context and the various factors identified affected the participants' learning was proposed

The implications drawn for the study of second language acquisition and development are that:

- The notion of SLA as a complex dynamic and adaptive process is broadly supported by the findings of this study, with the learners' Thai identities and their learning and use experiences combining with their personal characteristics to produce an internalized English language structure heavily influenced by their internalized Thai language structure.

- SLA theories proposing that individual factors may account for the development of second language skills seriously misjudge the complexity of the process and the importance of the situational and linguistic context
- That complexity may seriously limit the ability to apply the findings of any study beyond its immediate context.

The implications for the teaching of English in Thailand and its use as a language of academic exchange are that:

- Greater attention needs to be given to inculcating a better appreciation of the four areas identified as giving rise to the majority of the problems detected in these authors' work
- Teaching in those areas should go beyond the kind of rote learning of rules which was unsuccessful in developing the participants' abilities to use those areas in their writing and speech.
- The intra-individual differences in how language problems affect different users noted suggest that remedial English writing classes should be based on a needs analysis rather than simply being conducted on a general basis, since some learners may have problems associated with certain language areas which may require specific attention.
- Universities and other educational institutions who increasingly place pressure on their academic staff to publish journal articles in English, should provide formal support for their faculty members in the area of English writing and in particular to provide them with access to the kind of editing and proof-reading services which the authors in this study regularly required.

The study is the first in Thailand and apparently more widely to:

- Compare tokens of structural „errors“ with the numbers of particular word types in texts.

- Analyze pre-publication academic journal articles for evidence of language learning difficulties.
- Offer evidence of the appropriateness of a CDST approach to second language learning by highlighting the interplay of a wide variety of factors resulting in the variance in the English structural accuracy of this group of participants. No previous study traced has offered such evidence.

This latter result is interesting because by the nature of the sample of authors who made up the participants, a number of factors were „held constant“ in that their linguistic and socio-cultural context was similar as was their general experience within the Thai education system, and additionally all had a similar degree of instrumental motivation to learn English by virtue of the need to use English in their post-graduate studies and to write and publish journal articles describing their own research in English thereby accumulating social capital. Thus while the context of the research represents a limitation on the generalizability of the results to other groups of learners not sharing a closely similar context, the results are able to “inform theory” as Larsen-Freeman (2017) suggests and support CDST as a valid approach to the study of SLA and the factors which encourage and inhibit the learning of second languages. Moreover, contrary to much of the literature on CDST casting doubt on the ability of traditional Gaussian statistics to be capable of investigating language as a CDST (see for example Lowie, 2017, and Larsen Freeman 2017) this study through adopting an approach similar to and developing on Dornyei’s (2017) RQM by incorporating a quantitative as well as a qualitative view of the data, has successfully illustrated the relevance of CDST to SLA using traditional statistical methods which are readily understood both in their application and interpretation which cannot always be claimed for other methods which have been proposed and employed in recent CDST studies (e.g., Murakami, 2016) to achieve findings not substantially different from those from non-CDST studies.

The main limitations of this study are the relatively small size of the sample of participants and the difficulty of ensuring that this was representative of Thai

academics who publish articles in English. Moreover, the restriction of the articles analyzed to those edited by only one native English speaking editor might introduce an element of personal language „prejudices“ into the outcome of the analysis. Future studies with English users at this level might usefully be based on work from more than one source university/region of Thailand and include edited work from more than one editor.

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Appendix 1. Tables

Table 1 Reports of generalized error analysis research in Thailand between 2000 and 2017

Study	Year	Participants	Material analyzed	Main problems detected	Attributed to
Thananart (cited in Sompong, 2014)	2000	U/g students at Chula Uni	Compare and contrast paras	GS, VF, WC, Sp, transition signals.	(Unknown)
Chownahe (cited in Bootchuy, 2008)	2000	High school students	Student writing	Adj, V, Trans, WO	Inter E, Intra E & Dev E
Likitrittanaporn [cited in Benui (2008)	2001	3rd yr business students at Srinakariniwiroi Uni.	Student writing	SS & WO, art elip	Trans
Hutyamanivudhi	2001	Staff at Ital-Thai Development Co Ltd.	109 Business letters	V (22%), Prep (19%), Det (16%)	Inter E, overgen and lack of practice in English writing
Pongsriwet (cited in O'Donnell, 2016)	2001	1st yr u/g students at Kasetsart Uni	In-class narrative writing assignments	Sub/Vagr, VF & T, NPI, WF, frag, Art, Prep, Pro	Inter E
Srichai	2002	1st yr u/g students at PSU	Writing based on pictures and Thai words		
Pongpairaj (cited in O'Donnell, 2016)	2002	1st yr. Arts faculty students at Chula Uni	Student writing	Det, VT, Prep, Lex, Frag, WO	Inter E
Lush	2002	3rd yr u/g students at Thammasat Uni	Students' essays	Syn & Lex E, Prep Coll, pl of n/c N, use of existential 'there'	Inter E, Ignorance of
Ayucharatana (cited in Bootchuy, 2008)	2002	4th yr Eng major students at KK Uni	Research proposals	Art, sing/pl Ns, interchanged & incorrect VT, Preps, Sub/V agr,	(Descriptive study)
Khaoural	2002	Eng major students at Raja, NP	Eng compositions	Punc, Sub/V agr, Frags & ROSs	Inter E
Serebenjapol	2003	Mahi Uni postgrad science students	Scientific theses	Preps, VT, Det, Contractions, SS, WC SS, WO, ME, Trans. overgen	IRA & IRR, Inter E & FCH
Khamput	2004	Mattayom 5 (yr 11 high school) students	Student writing	Art, V, NPI, Subordinators and conjunctions	Carelessness, IRA, Inter E
Rurakwit	2004	Thamma Uni u/g students	Eng essays and quizzes	WO, Trans, elip Sub	Inter E, Intra E & Dev E
Na-Ngam	2004	1st yr u/g Students at PSU	Eng essays	Frag, obj, V & Sub elip, misplacement of advs & adjs	Inter E
Chakorn	2005	Company officers	109 Business letters	Incomplete S, N, Sub/Vagr, Sp, VT, Art	Inter E, IRA, FCH, avoidance, carelessness
				V (22 %), Prep (19 %), Det (16 %)	Inter E

Table 1 (cont.) Reports of Generalized error analysis research in Thailand between 2000 and 2017

Study	Year	Participants	Material analyzed	Main problems detected	Attributed to
Banlomchon	2006	Grade 12 high school students from NP	Purposive writings based on topics and picture	Dets. W/C, VF&T, Ns, Sub/Vagr, Preps (57%), Lex (25%), ME (18%)	Inter E, overgen, IRR, IRA, FCH
Sattayatham and Honsa	2007	1st yr. medical students, Mahidol University	Translations of S and paras from Thai to Eng	Overgen, IRA, FCH	Inter E
Bennui	2008	3rd yr English-minor u/g students, Thaksin Uni	Final exam papers from basic Eng writing course	Voc, WO & SS, VT, Sub/Vagr, inf, elip G morph, Prep, Det, overgen and double marking, have/there conf	Inter E, Trans, L1 cultural knowledge and writing style
Sattayatham and Ratanapinyowong	2008	1st yr medical students at Mahi Uni	Opinion paras related to medical ethics	No intro & conc, coh or org. Difficulty using Eng G and paras	Lack of writing ability at a paragraph level
Boothuay	2008	1st yr Eng MA students at a uni in Bangkok	Writing task and final term paper	Elip S elements (38%), compound & complex S (23%), WO (9%)	Inter E (47%), IRA (9%)
Jenwitheesuk	2009	3rd yr Eng students at Raja Uni (RMUTSV)	6 pieces of writing	Det, Sub/Vagr, VT, Prep	Inter E, FCA ignorance of Eng SS and G
Ampornratana (cited in Phetdannui 2016)	2009	Mathayom 6 high school students	Student writings	VF & T, Pro, Adj, sub/Vagr, Prep, Conj, N, overuse of and elip be, sub/obj repetition	Inter E, Intra E and Dev E
Watcharapunyawong and Usaha	2012	2nd yr Eng major students at Raja Thepatsiri	3 paragraph length writings on assigned topics	VT&F, WC, SS, Art, Prep, mod &aux, NPI, Frag, Pro, ROSSs, Sub/Vagr, Inf/Ger, transitions,	Inter E (assumed)
Nonkukhetkhong	2013	1st yr. Eng major students at Raja Udon Than	200-250 word essays	V, N, Poss, Art, Prep, Adj and Adv 47%, Syn (20%) substance & ME(19%) Lex(12%)	Inter E, overgen, IRR, IRA
Runkati	2013	Master's students at PSU	Thesis abstracts	Art(26%), N(18%), Prep(13%) V(6%)	
Iamsiu	2014	2nd yr Eng minor students at Srinakarinwirot Uni	20 writings	WC (46%), SS (33%), Sub/Vagr (13%), WO (11%)	Inter E
Andania	2015	2nd grade high school students in Narathiwat	Compositions	NPI, VT, Sub/Vagr, WF, extraneous Sub, Punc.	(Descriptive study)

Table 1 (cont.) Reports of Generalized error analysis research in Thailand between 2000 and 2017

Study	Year	Participants	Material analyzed	Main problems detected	Attributed to
Rattanadilok-Na-Phuket and Othman	2015	2nd and 3rd yr u/g Eng major students in Songkhla	300 word essays	Trans, VT, Prep, WC, VF, Sp, VT, ME, Art & Det, Pro, NPI, Sub/Vagr, Prep	Inter E, Intra E, overgen, IRA, IRR
O'Donnell	2015	1st yr students at Burapha Uni	1st draft dialogues	Sub/Vagr, Prep	Weak language skills, not noticing & Inter E
Phetdanniucs and Ngonkum	2016	2nd yr u/g Eng Major students at KK Uni	550-650 word essays	Sub/Vagr, Det, ROS, Trans, VT SS, NPI, Punc, VF, Prep WC	Inter E, IRR, IRA, FCH
Promsupa, Varasarin and Brudhiprabha	2017	2nd yr Eng major students at a private Thai Uni	Eng essays	Morph E (82 %) NPI (34 %), Art (22 %), Prep (5 %), Syn (18 %),	Inter E, Intra E & and Dev E
Suvarnamani	2017	1st yr arts u/g students at Silpakorn Uni	Descriptive writing from final exam papers	VT (Past/present simple) (72 %), elip V be, Frag, Prep	Wrong pron, inconsistency, lack of care, Inter E, Trans
Sermsook	2017	2nd yr Eng major students at a Thai Uni	Student writings	punc, Art, Sub/Vagr, V & VT, frag, capitalization, Prep, Sp	inter, lack of grammar knowledge, carelessness

(See next page for key)

Table 1 (cont.) Reports of Generalized error analysis research in Thailand between 2000 and 2017

Key.

Participant aspects etc.: Chula - Chulalongkorn; Eng - English; ELI - English Language Institute; KK - Khon Kaen; Mahi - Mahidol; NP - Nakhon Pathom; PSU Prince of Songkla University; Raja - Rajabhat Institute/University; RMUTSV - Rajamangala University of Technology Srivijaya; Thamma - Thammasat University; u/g - undergraduate; Uni - university; yr - year.

Problem types: Adj - adjective(s); Adv - adverb(s); Art - article(s); be/have - confusion of be and have; coh - cohesion; conc - conclusion; Conj - conjunction(s) Coll - collocation; Det - determiner(s); elip - elipsis; Frag - fragments; Ger - gerund; Inf - infinitive; G - grammar/grammatical; GS - grammatical structure; have/there conf - using have instead of there (is/are); intro - introduction; ME - mechanical error(s); morph - morpheme(s)/morphological; mods & auxs - modal and auxiliary verbs; morpheme(s)/ morphological; n/c - non-count; N - noun; NPl - noun plural(ization); Obj - object(s); org - organization; para - paragraph(s); Poss - possessive (s/case); Prep - preposition(s); Pro - pronoun(s); Punc - punctuation; ROS - run-on sentences; S - sentence(s); SS - sentence structure; sing - singular; Sp- spelling; Sub - subject(s); Sub/Vagr - subject verb agreement; Syn - syntax/syntactical; V - verb(s); VF- verb form; VT - verb tense; Voc - vocabulary; WC - word choice; WF - word form; WO - word order

Causes etc.: Dev - developmental; E - error(s) FCH - false concepts hypothesized; IRR - ignorance of rule restrictions; Inter - interlingual (including L1 transfer & mother tongue influence); Intra - intralingual; IRA - incomplete rule application; overgen - overgeneralization; pron - pronunciation; Trans -(direct) translation from Thai.

Table 3 Summary of data fields extracted as quantified data from participant interviews

Data field	Variable created	Summary of data
N		26
Female (n)	GEN	17
Male (n)		9
Age range (yrs) /Mean age (yrs) (Age)	AGE@ED	31 – 56 / 39.88
Age of first exposure to English (n)	PRESCH ¹	4 5 6 7 8 9 10 11 12 14
Age of first formal English classes (n)	ISTEXP	3 1 2 1 2 0 6 7 2 1
Overall exposure to English (yrs) at time of editing article (n)	EXPPER	0 1 4 2 1 1 6 7 2 1 <21 21-25 26-30 31-35 36-40 >40 1 5 10 4 3 19 -43 / 30.42
Range (yrs) /Mean (yrs) / Overall exposure to English classes (yrs)	CLASPER	<11 11-15 16-20 21-25 26-30 >30 6 6 6 6 1 17.12
Mean (yrs)		
Primary school		
Government (n)	PRIMGOV	16
Private (n)	PRIMPRIV	9
Government/private (n)		1
Estimated learning hours (n)	PRIMMEANHRS	0 1-200 201-400 401-600 601-800 801-1000 >1000 3 13 4 2 0 3 1 291.92
Mean estimated hours		
Junior high school (mathayom 1-3)		
Government (n)	JHIGHGOV	18
Private (n)	JHIGHPRIV	6
University demonstration (n)	JHIGHDEM	2

Table 3 (cont.) Summary of data fields extracted as quantified data from participant interviews

Data field	Variable created	Summary of data
Snr high school (m. 4-6 etc.)	HIGHGOV	20
Government (n)	HIGHPRIV	2
Private (n)	HIGHDEM	2
University demonstration (n)	HIGHVOC	2
Vocational college (n)		<250
High school etc. learning hrs (n)		2 6 11 3 2 2
Mean estimated hours	HIGHMEANHRS	648.17
Bachelor's degree		
Arts (English major/minor) (n)	BACHARTS &	5
Science (n)	BACENGMJAJ	17
Medical (n)	BACHSCI	1
Business (n)	BACHMED	3
English language program (n)	BACHBUS	1
Elective English courses	BACHENGPROG	9
Master's degree (n)	BACHELEC	23
Arts (n)	MASARTS ²	5
Science (n)	MASSCI ²	13
Medical (n)	MASMED ²	1
Business (n)	MASBUS ²	4
Studied all in Thailand	MASINTHAI	19
Studied all overseas	MASOS	2
Studied partly in Thailand, partly overseas	MASOS&HOME	2
Studied in English only	MASENGPROG	6

Table 3 (cont.) Summary of data fields extracted as quantified data from participant interviews

Data field	Variable created	Summary of data
Studied in English and Thai	MASMAJENG&L1	3
Studied in Thai only	MASL1	14
Took English classes	MASCOMPENG	9
Wrote thesis in English	MASTHENG	9
PhD (completed or still studying for ³) (n)		23
Arts (n)	PHDART ²	3
Science (n)	PHDSCI ²	15
Medical (n)	PHDMED ²	1
Business (n)	PHDBUS ²	4
Studied all in Thailand	PHDINTHAI	6
Studied all overseas	PHDOS	12
Studied partly in Thailand, partly overseas	PHDTHAI&OS	5
Studied in English only	PHDINENG	16
Studied in English and Thai	PHDINL1&ENG	3
Studied in Thai only	PHDINL1	4
Took English classes	PHDENGCOUR	11
Wrote thesis in English	PHDTHENG	21

Table 3 (cont.) Summary of data fields extracted as quantified data from participant interviews

Data field	Variable created	Summary of data
University estimated English learning hrs (n)	UNIMEANHRS	>500 500-1000 1001-1500 1501-2000 >2000 16 4 3 1 2
Mean estimated hours	NFCLMEANHRS	648.37
Study hours in non-formal English classes (n)		0 1-100 101-200 201-300 301-400 401-500 >500 6 5 5 2 5 1 2
Mean estimated hours		215.19
Non-formal class type/content ⁴ (n)	NFCOMMENG	11
Conversation/communicative (n)	NFEXAM	8
Exam preparation (n)	NFNONENG	9
Non-English tutorial (n)	NFWRIT	7
Writing (n)		
Estimated total English classes (hours) (n)	TOTMEANCL-HRS	<1000 1001-2000 2001-3000 3001-4000 4001-5000 >5000 8 8 7 1 1 1
Mean estimated hours		1833.07
Period spent learning in English overseas (yrs) (n)	ENGEDOS	0 >0<1 1-2 >2-5 >5 9 4 3 9 1
Exposed to native speaking English teachers (n)	NSTENG	22
Exposed to Eng. n/s teachers in other subjects (n)	NSTOTH	5
Social/work experience of English in Thailand (n)	SOCENGH	9
Using English overseas (education or non-ed) (n)	SOCENGOS	18
Exposure to CLT methods for English (n)	COMTEACH	20
Tuition for academic writing (n)	ACWRTEACH	14
English teaching experience (1 year +) (n)	TEACHENG	4
Publications in English (inc. proceedings) (n)	NUMPUBS	1 2-5 6-10 11-20 >20 2 11 4 1 8

(See next page for notes)

Table 3 (cont.) Summary of data fields extracted as quantified data from participant interviews

Notes

- ¹ Based on those participants (5) who had experience of English before beginning formal classes in prathom
- ² Also the source of four combined variables: PGRADARTS, PGRADSCI, PGRADMED and PGRADBUS
- ³ One participant was actively studying for but had not completed a PhD, one had been studying but had resumed work before graduating. Both are included in the figures relating to PhD study.
- ⁴ More than one possible

Table 4 Final coding nomenclature used in analyzing writing samples.

Category	Sub-category	Description	Code
Structure	Word Order	Quantifier placed between adjective and noun or after noun	Gwo q/adj
Structure	Word Order	Order or position of adjectives relative to a noun	Gwo adj pos
Structure	Word Order	Miscellaneous word order error	Gwo misc
Structure	Prepositions	Incorrect or poor choice of preposition	Gprep choice
Structure	Prepositions	Not using any preposition where one needed	Gprep need
Structure	Prepositions	Using a preposition where none needed	Gprep n/n
Structure	Prepositions	Using a preposition where an adverb is appropriate	Gprep →adv
Structure	Prepositions	Using a preposition where a verb/clause is more appropriate	Gprep →verb
Structure	Prepositions	Using a verb to express an idea better expressed by a preposition	Gprep verb →prep
Structure	Prepositions	Using a preposition instead of a conjunction	Gprep →conj
Structure	Prepositions	Using a preposition instead of a relative pronoun	Gprep rel pro
Structure	Prepositions	Using a preposition after 'be' other than for location	Gprep be non loc
Structure	Prepositions	Using an adverb to express an idea better expressed by a preposition	Gprep adverb →prep
Structure	Verbs	Incorrect tense → correct tense	
Structure	Verbs	Present simple → present perfect	Gv tense pres s →pres perf
Structure	Verbs	Present simple → past simple	Gv tense pres s →past s
Structure	Verbs	Present simple → present continuous	Gv tense pres s →pres con
Structure	Verbs	Present simple → past continuous	Gv tense pres s →past con
Structure	Verbs	Present simple → future (simple)	Gv tense pres s →future
Structure	Verbs	Present simple → past perfect	Gv tense pres s →past perf
Structure	Verbs	Present continuous → present simple	Gv tense pres con →pres s
Structure	Verbs	Present continuous → present perfect	Gv tense pres con →pres p
Structure	Verbs	Present continuous → past continuous	Gv tense pres con →past con

Table 4 (cont.) Final coding nomenclature used in analyzing writing samples.

Category	Sub-category	Description	Code
Structure	Verbs	Present continuous → past simple	Gv tense pres con → past s
Structure	Verbs	Present perfect → present simple	Gv tense pres p → pres s
Structure	Verbs	Present perfect → past simple	Gv tense pres p → past s
Structure	Verbs	Present perfect → past perfect	Gv tense pres p → past p
Structure	Verbs	Present perfect continuous → present perfect	Gv tense pperf con → pres p
Structure	Verbs	Past simple → present simple	Gv tense past s → pres s
Structure	Verbs	Past simple → past continuous	Gv tense past s → past con
Structure	Verbs	Past simple → present perfect	Gv tense past s → pres perf
Structure	Verbs	Past simple → past perfect	Gv tense past s → past p
Structure	Verbs	Past perfect → past simple	Gv tense past p → past s
Structure	Verbs	Past perfect → present simple	Gv tense past p → pres s
Structure	Verbs	Past perfect → present perfect	Gv tense past p → pres p
Structure	Verbs	Past continuous → past simple	Gv tense past con → past s
Structure	Verbs	Future simple → present simple	Gv tense future → pres s
Structure	Verbs	Future simple → past simple	Gv tense future → past s
Structure	Verbs	Using was/were with V1, V2 etc. to construct a past tense structure	Gv tensebe+V2/V1
		Incorrect form → correct form	
Structure	Verbs	Verb1 → infinitive with to	Gv form V1 → inf/to
Structure	Verbs	Verb1 → Verb plus ing	Gv form V1 → V-ing
Structure	Verbs	Verb1 → Verb2	Gv form V1 → V2
Structure	Verbs	Verb1 → Verb3	Gv form V1 → V3
Structure	Verbs	Verb1 → perfect participle	Gv form V1 → perf part
Structure	Verbs	Verb2 → infinitive with to	Gv form V2 → inf/to

Table 4 (cont.) Final coding nomenclature used in analyzing writing samples.

Category	Sub-category	Description	Code
		Incorrect form → correct form	
Structure	Verbs	Verb2 → Verb plus ing	Gv form V2 → V-ing
Structure	Verbs	Verb2 → Verb1	Gv form V2 → V1
Structure	Verbs	Verb2 → Verb3	Gv form V2 → V3
Structure	Verbs	Verb3 → Verb1	Gv form V3 → V1
Structure	Verbs	Verb3 → Verb2	Gv form V3 → V2
Structure	Verbs	Verb3 → passive plus modal verb	Gv form V3 → passive/modal
Structure	Verbs	Verb plus ing → infinite with to	Gv form V-ing → inf/to
Structure	Verbs	Verb plus ing → Verb1	Gv form V-ing → V1
Structure	Verbs	Verb plus ing → Verb2	Gv form V-ing → V2
Structure	Verbs	Verb plus ing → Verb3	Gv form V-ing → V3
Structure	Verbs	Verb plus ing → passive	Gv form v-ing → pass
Structure	Verbs	Verb plus ing → past continuous participle	Gv form ving → past con part
Structure	Verbs	Infinite with to → Verb plus ing	Gv form inf/to → prep+V-ing
Structure	Verbs	Infinite with to → present simple (V1 or V1s)	Gv form inf/to → pres s
Structure	Verbs	Infinite with to → Verb2	Gv form inf/to → V2
Structure	Verbs	Infinite with to → passive	Gv form inf → pass
Structure	Verbs	Present modal → past modal	Gv form presmod → pastmod
Structure	Verbs	Past modal → present modal	Gv form pastmod → presmod
Structure	Verbs	Modal +V1 → Verb1 (present simple)	Gv form modal → pres s
Structure	Verbs	Modal +V1 → Verb2 (past simple)	Gv form modal → past s

Table 4 (cont.) Final coding nomenclature used in analyzing writing samples.

Category	Sub-category	Description	Code
		Incorrect form → correct form	
Structure	Verbs	Modal +V1 → passive	Gv form modal → pass
Structure	Verbs	modal +V1 → Verb-ing (can- being able to)	Gv form modal → V-ing
Structure	Verbs	Modal +V1 → past perfect	Gv form modal → past p
Structure	Verbs	Modal + V1 → present perfect	Gv form modal → pres perf
Structure	Verbs	Pres simple → modal verb	Gv form pres s → modal
Structure	Verbs	Past simple → modal verb	Gv form past s → modal
Structure	Verbs	Regularizing an irregular Verb2 or Verb3 form	Gv form irreg V2/V3
Structure	Verbs	Incorrect attempt to use/construct passive voice	Gv unsucc pass
Structure	Verbs	Omitting the verb be in a passive construction	Gv pass V be omit
Structure	Verbs	No verb in a sentence	Gv no verb
Structure	Verbs	No auxiliary verb where needed	Gv no aux
Structure	Verbs	Placing a verb where not necessary	Gv verb n/n
Structure	Verbs	Using an auxiliary verb where not needed	Gv aux n/n
Structure	Verbs	Using the verb be before a present simple verb	Gv be+V1
Structure	Verbs	Confusion between the uses of be and have	G be/have conf
Structure	Verbs	Successive verbs in verb1 form	Gv double verb
Structure	Articles and determiners	Not using any article before a determined (definite) noun	Gart def det
Structure	Articles and determiners	Not using an indefinite article before a singular count noun	Gart indef sing
Structure	Articles and determiners	Not using a possessive adjective where needed	Gart poss omit

Table 4 (cont.) Final coding nomenclature used in analyzing writing samples.

Category	Sub-category	Description	Code
Structure	Articles and determiners	Not using a demonstrative adjective where one needed	Gart no dem adj
Structure	Articles and determiners	Use of a general no article instead of a number	Gart gen → number
Structure	Articles and determiners	Omission of each where appropriate	Gart gen → each
Structure	Articles and determiners	Use of no article where some or any is needed	Gart gen → indef pl
Structure	Articles and determiners	Use of 'the' or a quantifier before a general plural or non cont noun	Gart def → gen
Structure	Articles and determiners	Using 'the' before a name or title	Gart def_title
Structure	Articles and determiners	Use of an indefinite article where the noun general	Gart indef → gen
Structure	Articles and determiners	Use of a possessive where a general no article is needed	G art poss → gen
Structure	Articles and determiners	Use of a demonstrative instead of a general no article	Gart demo → gen
Structure	Articles and determiners	Using an article where none is needed	Gart n/n
Structure	Articles and determiners	Using 'the' instead of an indefinite article	Gart def → indef
Structure	Articles and determiners	Using 'the' instead of a possessive adjective	Gart def → poss
Structure	Articles and determiners	Using 'the' instead of a demonstrative adjective/pronoun	Gart def → demo
Structure	Articles and determiners	Use of 'the' where each, both or a quantifier is more appropriate	G art def → each/both/quant

Table 4 (cont.) Final coding nomenclature used in analyzing writing samples.

Structure	Articles and determiners	Using an indefinite article instead of 'the'	Gart indef→def
Structure	Articles and determiners	use of an indefinite article instead of a possessive adjective	Gart indef→poss
Structure	Articles and determiners	Use of an indefinite where a demonstrative is appropriate	Gart indef→demo
Structure	Articles and determiners	Use of a singular indefinite article instead of a plural (some/any)	Gart indef sing→pl
Structure	Articles and determiners	Use of a plural (some/any) indefinite article instead of a singular	Gart indef pl→sing
Structure	Articles and determiners	Confusion between a, an and one	Gart a/an/one
Structure	Articles and determiners	Using a possessive adjective instead of 'the'	Gart poss→def
Structure	Articles and determiners	Using a possessive adjective instead of 'a' or 'an'	Gart poss→indef
Structure	Articles and determiners	Use of a possessive adjective where a demonstrative is appropriate	Gart poss→demo
Structure	Articles and determiners	Using a demonstrative instead of 'the' or a possessive adjective	Gart demo→def
Structure	Articles and determiners	Form of demonstrative incorrect	Gart form of demo
Structure	Articles and determiners	Use of a quantifier instead of a definite article or demonstrative	Gart quant→def
Structure	Adverbs	Inappropriate position of adverb(ial)	Gadv pos
Structure	Adverbs	Omission of an adverb where appropriate	Gadv miss
Structure	Adverbs	Inappropriate choice of adverb	Gadv ch
Structure	Nouns & comp .nouns	Use of a singular noun where a plural noun required	Gn sing→pl

Table 4 (cont.) Final coding nomenclature used in analyzing writing samples.

Category	Sub-category	Description	Code
Structure	Nouns & comp. nouns	Use of a plural noun where a singular noun is appropriate	Gn pl→sing
Structure	Nouns & comp. nouns	Use of a pluralized form of a non-count noun	Gn pl→n/count
Structure	Nouns & comp. nouns	Adding s to an already plural noun	Gn add s to pl n
Structure	Nouns & comp. nouns	Unnecessary use of possessive s in a compound noun	Gcompn→poss
Structure	Nouns & comp. nouns	Incorrect word order in a compound noun	Gcompn w/o
Structure	Nouns & comp. nouns	Pluralizing the first word in a compound noun	Gcompn pl 1st w
		Incorrect form → correct form	
Structure	Word form	adjective → adverb	Gwform adj→adv
Structure	Word form	adjective → noun	Gwform adj→n
Structure	Word form	adjective → comparative	Gwformadj→comp
Structure	Word form	adjective → superlative	Gwformadj→sup
Structure	Word form	adjective → verb	Gwform adj→v
Structure	Word form	comparative → adjective	Gwform comp→adj
Structure	Word form	Wrong adjective form used	Gwform adj→adj
Structure	Word form	adverb → adjective	Gwform adv→adj
Structure	Word form	adverb → comparative	Gwform adv→comp
Structure	Word form	adverb → noun	Gwform adv-n
Structure	Word form	Wrong form of adverb or adverb phrase	Gwform adv→adv (or ph)
Structure	Word form	noun → adjective	Gwform n→adj

Table 4 (cont.) Final coding nomenclature used in analyzing writing samples.

Category	Sub-category	Description	Code
Structure	Word form	noun → adverb	Gwform n→adv
Structure	Word form	noun → verb	Gwform n→v
Structure	Word form	noun → verb infinitive	Gwform n-v-inf
Structure	Word form	Wrong noun form used	Gwform n→n
Structure	Word form	verb → noun	Gwform v→n
Structure	Word form	verb → adjective	Gwform v→adj
Structure	Word form	Using a prefix instead of an adjective	Gwform pref→adj
Structure	Word form	Adding ing to a noun as if it were a verb	Gwform noun+ing
Structure	Word form	Incorrect form of negative	Gwform neg form
Structure	Word form	Using a superlative adjective to form a comparative structure	Gwform comp sup conf
Structure	Word form	Using more before a comparative adjective formed with er	Gwform more+comp/er
Structure	Conjunction	Using a conjunction where none needed	Gconj n/need
Structure	Conjunction	Inappropriate choice of conjunction (inc. and/or, so/so that)	Gconj choice
Structure	Conjunction	No conjunction where one needed	Gconj miss
Structure	Conjunction	Not placing elements of 'not only' 'but also' correctly	Gconj not only/but also
Structure	Conjunction	Using a conjunction instead of a relative pronoun	Gconj→rel pro
Structure	Conjunction	Using a conjunction instead of a preposition	Gconj→prep
Structure	Conjunction	Using a conjunction instead of a (sequence) adverb	Gconj→adv
Structure	Adjectives and mods.	Confusion between ed and ing forms of adjective	Gadj ed/ing conf
Structure	Adjectives and mods.	Pluralizing an adjective	Gadj pl adj
Structure	Adjectives and mods.	Using a pre noun adjective instead of a relative clause	Gadj →rel cl /adj

Table 4 (cont.) Final coding nomenclature used in analyzing writing samples.

Category	Sub-category	Description	Code
Structure	Adjectives and mods.	Using a pre-noun adjective instead of a post-noun modifier	Gadj→pnm
Structure	Adjectives and mods.	Using a relative clause instead of an adjective	G adj/rel cl→adj)
Structure	Adjectives and mods.	Not reducing a relative clause to a post noun modifier	Gadj rel cl→pnmod
Structure	Adjectives and mods.	Using a relative clause instead of an infinitive complement	Gadj rel cl→inf comp
Structure	Adjectives and mods.	Using a relative clause instead of an independent clause	Gadj rel cl→cl
Structure	Adjectives and mods.	Inappropriately using an adjective as a post noun modifier	Gadj pnmod→adj
Structure	Adjectives and mods.	Inappropriately reducing a relative clause to a post noun modifier	Gadj pnmod→rel cl
Structure	Adjectives and mods.	Using a post noun modifier instead of an independent clause	Gadj pnmod→ind cl
Structure	Adjectives and mods.	Using a post noun modifier instead of an infinitive	Gadj pnm→inf comp
Structure	Adjectives and mods.	omitting V-ing at the beginning of a reduced relative clause	Gadj (PNM)red rel cl no v-ing
Structure	Adjectives and mods.	Using an independent clause instead of a relative clause	Gadj ind cl→rel cl
Structure	Adjectives and mods.	Not reducing an independent clause to a post-noun modifier	Gadj (ind)cl→pnmod
Structure	Adjectives and mods.	Using an infinitive complement instead of a relative clause	G adj inf comp→rel cl
Structure	Adjectives and mods.	Using an infinitive complement instead of a post noun	G adj inf comp→pnm

Table 4 (cont.) Final coding nomenclature used in analyzing writing samples.

Category	Sub-category	Description	Code
Structure	Adjectives and mods.	Using an infinitive complement instead of an independent clause	G adj inf comp → ind cl
Structure	Possessives	Use of a noun with possessive s instead of a preposition+noun	Gposs → prep+noun
Structure	Possessives	Using preposition +noun instead of noun + possessive s	Gposs prep+n → poss-s
Structure	Possessives	Issue with possessive s on noun	G poss s issue
Structure	Possessives	Omission or issue with possessive apostrophe	Gposs apost
Structure	Agreement	Non-agreement of verb with subject (plural or singular)	Gagree n/v
Structure	Agreement	Non-agreement of demonstrative/pronoun/possessive with referent	Gagree n/demo/pro/poss
Structure	Agreement	Failure to agree number on two nouns related by a copula/verb	Gagree n-n
Structure	Rel. pronouns	Relative pronoun missing	Grel pro miss
Structure	Rel. pronouns	Relative pronoun used where not needed	Grel pro n/n
Structure	Rel. pronouns	Using the wrong or inappropriate relative pronoun	Grel pro ch
Structure	Rel. pronouns	Using a pronoun instead of a relative pronoun	Grel pro pro → rel pro
Structure	Rel. pronouns	Using a relative pronoun instead of a conjunction	Grel pro → conj
Structure	Rel. pronouns	Using a relative pronoun instead of a preposition	Grel pro → prep
Structure	Pronouns	No pronoun where needed	Gpro miss
Structure	Pronouns	Incorrect choice of pronoun	Gpro ch
Structure	Pronouns	Not using a reflexive pronoun where appropriate	Gpno reflex p
Structure	Pronouns	Using a pronoun where there is no referent	Gpro no ref
Structure	Miscellaneous	No subject with a verb	G no subj
Structure	Miscellaneous	No object with an obligatory transitive verb or preposition	G no obj
Structure	Miscellaneous	Omitting a Wh word	G no Wh w
Structure	Miscellaneous	Confusing negative forms (No, not, none)	G no/not conf
Structure	Miscellaneous	Issue with the use of 'there is/there are'	G ti/ta issue

Table 4 (cont.) Final coding nomenclature used in analyzing writing samples.

Category	Sub-category	Description	Code
Structure	Miscellaneous	Confusing either and neither	G either/neither conf
Structure	Miscellaneous	Duplicating the subject (noun and pronoun)	G subj dup
Structure	Miscellaneous	Run on sentence	G RO sent
Category	Description		Code
Lexical	Inappropriate word choice		Lex w/c
Lexical	Duplicating meaning in adjacent words/phrases		Lex dup
Lexical	Use of could for past sense of ability (vs were not able to)		Lex could ability
Lexical	Direct duplication of a word in the same or different form		Lex dup word
Lexical	Confusion between there, their and they('re)		Lex they/there
Cohesion	Appropriacy/necessity for the cohesive device used		Coh dev inapp
Cohesion	Not using a cohesive device where relevant		Coh no coh dev
Cohesion	Failure to use pronoun reference		Coh ref pro
Cohesion	Failure to use a possessive as a reference		Coh ref poss
Cohesion	Failure to use a demonstrative as a reference		Coh ref demo
Cohesion	Failure to use a substitution where appropriate		Coh no subs
Cohesion	Not using an appropriate device for anaphoric reference		Coh no dev anaph
Cohesion	Allow subject s to share the same predicate		Coh share predic
Cohesion	Not elipting part of a structure in repeated use		Coh not elip info
Style	Improved expression of idea		Style imp exp
Style	Unsuccessful or inappropriate nominalisation of a transitive concept		Style nom trans
Style	Not nominalising in an appropriate situation		Style nom not nom
Style	Use of a preposition (of etc) instead of using a compound noun		Style compn-prep
Style	Unsuccessful or awkward attempt to construct a compound noun		Style compn unsucc

Table 4 (cont.) Final coding nomenclature used in analyzing writing samples.

Category	Description	Code
Style	Not using a previously defined abbreviation or not defining an abbreviation or using an inappropriate contraction	Style abbrev issue
Style	Issue with form or use of references	Style ref issue
Style	Compounding/complexing two sentences where they should be split	Style split sen
Style	Starting a new sentence instead of compounding or relativizing	Style join sen
Style	Need for a hedging device to qualify a definitive statement	Style hedge
Style	Not using a passive voice construction where appropriate	Style act→pass
Style	Unnecessary or inappropriate use of passive voice	Style pass→act
Style	Using words for a number instead of figures	Style word→fig
Style	Figures used for a number where a word more appropriate	Style fig→word
Style	Depersonalizing an I/we sentence	Style depers
Style	Depersonalizing an I/we sentence using active to passive voice	Style depers(act→pass)
Style	Not keeping forms parallel in a repeated section	Style paral
Style	Not fronting a sentence with it to avoid a long subject	Style not front it
Information	Insufficient information included or meaning unclear	Info supp info/mean
Information	Irrelevant or unnecessary information/words deleted	Info omit inf
Miscellaneous	Punctuation problem	Misc punc
Miscellaneous	Error in capitalization	Misc cap
Miscellaneous	Spelling error	Misc spell
Miscellaneous	Missing or inappropriate use of a unit or symbol	Misc unit/symbol
Miscellaneous	Use of an exact figure after a term such as 'approximately'	Misc approx
Miscellaneous	Word left out assumed in error	Misc w omit
Miscellaneous	New paragraph needed	Misc para
Miscellaneous	Form of reference to previous work	Misc form of ref

Table 6 Codes used in thematic and content analysis of the interviews

Function of response codes	INST* codes	Definition
SoF	A	Anubahn
Recall	P	Prathom
Opinion	M	Mathayom
Evaluation	MLOW	Mathayom 1-3
Self-assessment	MLHIGH	Mathayom 4-6
Explanation	P&M	Prathom and mathayom
Confirmation	UGRAD	Undergraduate study
Correction	MASTERS	Master's degree study
Clarification	PHD	PhD study
Comment	PERS	Personal learning strategies
	LSCH	Study at a non-formal language institute
	GEN	Relating to the whole learning experience

Table 6 (cont.) Codes used in thematic and content analysis of the interviews

Theme/axial codes	Definition	Sub category codes	Definition
LEARNENG	Learning English or in English	INST*	Facts, features and qualities relating to the institution where a period of learning occurred
		TEACH	Teacher qualities and skills
		ST/METH	Teaching and learning methods used
		CONT	Skills and content taught
		MAT	Texts and materials used
		EVAL	Evaluation of features of the learning experience
		ASSESS	Interviewees' assessment of abilities or achievements from that learning experience
		WHY	Interviewee's reasons for learning at this stage
		SIG	Significant events occurring during that learning period
PERSHIST	Information relating to the interviewees life history		
TEACHEXP	The interviewees experience of teaching English		
OPINION	An opinion expressed by the interviewee	OPACAD	Opinion relating to academic writing in English
		OPLANG	Opinion relating to language
		OPLEARN	Opinion relating to learning
		OPENG	Opinion relating to English
		OPOTHER	Other opinions

Table 6 (cont.) Codes used in thematic and content analysis of the interviews

Theme/axial codes	Definition	Sub category codes	Definition
ARTICLE	The paper(s) reviewed and edited	WRITART	The method used to write paper(s)
PIE	Publishing in English	PUBART	The publication etc. of the paper
PIT	Publishing in Thai	PUBHIST	The interviewees publication history
PIO	Publishing in other languages	PROBLEMS	Problems encountered in publication and their solutions
		OPPUB	The interviewees opinions about publication
		WHYPUB	The interviewees reasons for publishing (in English, Thai or other languages)

TABLE 7 Summary of coding of changes suggested during editing

	ANN	BEN	CHAZ	DEE	EVE	FENI	GEE	HAL	INA
Word order	10	3	3	2	8	3	3	4	7
Preposition	38	20	13	47	114	86	84	140	48
Verb	38	62	6	40	105	80	52	80	20
Articles and determiners	253	69	21	151	131	105	81	263	108
Adverbs	2	0	1	10	5	11	3	5	3
Nouns & compound nouns	57	36	3	98	120	45	62	83	13
Word form	19	18	9	27	66	20	34	39	16
Conjunctions	16	0	7	26	31	10	30	7	16
Adjectives & modifiers	24	3	7	7	7	9	10	9	5
Possessives	0	0	0	9	1	0	3	9	0
Agreement	8	1	2	12	18	10	2	7	6
Relative pronouns	1	2	0	9	11	2	5	11	2
Pronouns	1	0	0	3	3	8	1	0	2
Misc. structure	4	4	0	7	13	6	20	14	3
Structure total	471	218	72	448	633	395	390	671	249
Lexical	53	57	41	78	126	157	86	91	49
Cohesion	7	14	2	43	54	13	12	49	5
Style	119	123	22	132	183	212	151	216	55
Information	106	30	16	84	105	95	83	151	19
Misc.	34	14	3	28	33	27	21	33	18
(Total words per Wmatrix)	790	456	156	813	1134	899	743	1211	395
NCU% overall	13.3%	20.4%	8.5%	14.9%	26.1%	16.8%	28.0%	23.7%	4.6%
NCU% structure only	7.9%	9.7%	3.9%	8.2%	14.6%	7.4%	14.7%	13.1%	2.9%

TABLE 7 (cont.) Summary of coding of changes suggested during editing

	JEN	KEN	LIZA	MON	NAM	OYLE	PAT	QUIN	ROB	SAM
Word order	3	3	2	4	1	13	2	5	3	6
Preposition	17	48	37	76	66	57	77	51	22	33
Verb	14	32	40	39	41	47	58	81	14	20
Articles and determiners	28	292	152	125	132	135	214	126	145	76
Adverbs	12	5	2	5	3	9	3	2	1	2
Nouns & compound nouns	4	29	8	42	27	32	34	38	20	41
Word form	5	24	6	33	13	36	27	13	4	15
Conjunctions	11	2	3	17	5	7	14	18	3	8
Adjectives & modifiers	9	7	1	3	3	4	5	16	4	4
Possessives	0	2	1	4	0	0	1	2	1	1
Agreement	3	1	1	10	3	5	1	5	6	3
Relative pronouns	4	2	1	2	2	1	2	4	0	0
Pronouns	2	1	0	2	0	0	0	1	3	0
Misc. structure	5	3	0	8	1	2	6	4	0	1
Structure total	117	451	254	370	297	348	444	366	226	210
Lexical	23	29	24	122	55	35	87	77	5	26
Cohesion	6	19	8	29	12	11	23	12	8	3
Style	65	78	32	197	125	81	102	83	41	70
Information	17	16	19	106	43	39	78	58	8	14
Misc.	87	19	11	61	17	4	75	33	58	18
(Total words per Wmatrix)	315	612	348	885	549	518	809	629	346	341
NCU% overall	4540	3901	4169	3522	2654	7459	4569	3824	5246	4093
NCU% structure only	6.9%	15.7%	8.3%	25.1%	20.7%	6.9%	17.7%	16.4%	6.6%	8.3%
	2.6%	11.6%	6.1%	10.5%	11.2%	4.7%	9.7%	9.6%	4.3%	5.1%

TABLE 7 (cont.) Summary of coding of changes suggested during editing

	TOM	UNA	VAL	WAN	XIAN	YVES	ZOLA	Totals
Word order	8	1	4	6	13	1	2	120
Preposition	55	60	43	25	83	57	59	1456
Verb	29	28	47	23	103	31	22	1152
Articles and determiners	154	102	114	77	161	97	141	3453
Adverbs	8	5	4	4	9	1	10	125
Nouns & compound nouns	48	35	53	13	42	71	45	1099
Word form	26	36	11	12	20	20	16	565
Conjunctions	22	13	13	3	12	11	11	316
Adjectives & modifiers	22	4	9	1	11	3	14	201
Possessives	0	0	1	0	4	0	3	42
Agreement	2	7	6	3	4	0	2	128
Relative pronouns	8	2	6	9	9	5	0	100
Pronouns	0	1	4	0	1	1	0	34
Misc. structure	0	12	4	0	8	6	9	140
Structure total	382	306	319	176	480	304	334	8931
Lexical	46	49	80	33	96	49	30	1604
Cohesion	27	12	28	5	20	16	8	446
Style	82	118	73	56	180	126	78	2800
Information	67	74	12	27	60	72	22	1421
Misc.	37	28	25	5	37	24	41	791
	Means							
	641	587	537	302	873	591	513	15993
(Total words per Wmatrix)	4071	3610	5733	2396	5890	3384	2388	112923
NCU% overall	15.7%	16.3%	9.4%	12.6%	14.8%	17.5%	21.5%	14.16%
NCU% structure only	9.4%	8.5%	5.6%	7.3%	8.1%	9.0%	14.0%	7.91%

TABLE 8 Summary of changes suggested during editing as percentages of the total NCUs

	ANN	BEN	CHAZ	DEE	EVE	FENI	GEE	HAL	INA
Word order	1.3%	0.7%	1.9%	0.2%	0.7%	0.3%	0.4%	0.3%	1.8%
Preposition	4.8%	4.4%	8.3%	5.8%	10.1%	9.6%	11.3%	11.6%	12.2%
Verb	4.8%	13.6%	3.8%	4.9%	9.3%	8.9%	7.0%	6.6%	5.1%
Articles & determiners	32.0%	15.1%	13.5%	18.6%	11.6%	11.7%	10.9%	21.7%	27.3%
Adverbs	0.3%	0.0%	0.6%	1.2%	0.4%	1.2%	0.4%	0.4%	0.8%
Nouns & comp. nouns	7.2%	7.9%	1.9%	12.1%	10.6%	5.0%	8.3%	6.9%	3.3%
Word form	2.4%	3.9%	5.8%	3.3%	5.8%	2.2%	4.6%	3.2%	4.1%
Conjunctions	2.0%	0.0%	4.5%	3.2%	2.7%	1.1%	4.0%	0.6%	4.1%
Adjectives & modifiers	3.0%	0.7%	4.5%	0.9%	0.6%	1.0%	1.3%	0.7%	1.3%
Possessives	0.0%	0.0%	0.0%	1.1%	0.1%	0.0%	0.4%	0.7%	0.0%
Agreement	1.0%	0.2%	1.3%	1.5%	1.6%	1.1%	0.3%	0.6%	1.5%
Relative pronouns	0.1%	0.4%	0.0%	1.1%	1.0%	0.2%	0.7%	0.9%	0.5%
Pronouns	0.1%	0.0%	0.0%	0.4%	0.3%	0.9%	0.1%	0.0%	0.5%
Misc. structure	0.5%	0.9%	0.0%	0.9%	1.1%	0.7%	2.7%	1.2%	0.8%
Structure total	59.6%	47.8%	46.2%	55.1%	55.8%	43.9%	52.5%	55.4%	63.0%
Lexical	6.7%	12.5%	26.3%	9.6%	11.1%	17.5%	11.6%	7.5%	12.4%
Cohesion	0.9%	3.1%	1.3%	5.3%	4.8%	1.4%	1.6%	4.0%	1.3%
Style	15.1%	27.0%	14.1%	16.2%	16.1%	23.6%	20.3%	17.8%	13.9%
Information	13.4%	6.6%	10.3%	10.3%	9.3%	10.6%	11.2%	12.5%	4.8%
Misc.	4.3%	3.1%	1.9%	3.4%	2.9%	3.0%	2.8%	2.7%	4.6%

TABLE 8 (cont.) Summary of coding of changes suggested during editing as percentages of the total NCUs

	JEN	KEN	LIZA	MON	NAM	OYLE	PAT	QUIN	ROB	SAM
Word order	1.0%	0.5%	0.6%	0.5%	0.2%	2.5%	0.2%	0.8%	0.9%	1.8%
Preposition	5.4%	7.8%	10.6%	8.6%	12.0%	11.0%	9.5%	8.1%	6.4%	9.7%
Verb	4.4%	5.2%	11.5%	4.4%	7.5%	9.1%	7.2%	12.9%	4.0%	5.9%
Articles & determiners	8.9%	47.7%	43.7%	14.1%	24.0%	26.1%	26.5%	20.0%	41.9%	22.3%
Adverbs	3.8%	0.8%	0.6%	0.6%	0.5%	1.7%	0.4%	0.3%	0.3%	0.6%
Nouns & comp. nouns	1.3%	4.7%	2.3%	4.7%	4.9%	6.2%	4.2%	6.0%	5.8%	12.0%
Word form	1.6%	3.9%	1.7%	3.7%	2.4%	6.9%	3.3%	2.1%	1.2%	4.4%
Conjunctions	3.5%	0.3%	0.9%	1.9%	0.9%	1.4%	1.7%	2.9%	0.9%	2.3%
Adjectives & modifiers	2.9%	1.1%	0.3%	0.3%	0.5%	0.8%	0.6%	2.5%	1.2%	1.2%
Possessives	0.0%	0.3%	0.3%	0.5%	0.0%	0.0%	0.1%	0.3%	0.3%	0.3%
Agreement	1.0%	0.2%	0.3%	1.1%	0.5%	1.0%	0.1%	0.8%	1.7%	0.9%
Relative pronouns	1.3%	0.3%	0.3%	0.2%	0.4%	0.2%	0.2%	0.6%	0.0%	0.0%
Pronouns	0.6%	0.2%	0.0%	0.2%	0.0%	0.0%	0.0%	0.2%	0.9%	0.0%
Misc. structure	1.6%	0.5%	0.0%	0.9%	0.2%	0.4%	0.7%	0.6%	0.0%	0.3%
Structure total	37.1%	73.7%	73.0%	41.8%	54.1%	67.2%	54.9%	58.2%	65.3%	61.6%
Lexical	7.3%	4.7%	6.9%	13.8%	10.0%	6.8%	10.8%	12.2%	1.4%	7.6%
Cohesion	1.9%	3.1%	2.3%	3.3%	2.2%	2.1%	2.8%	1.9%	2.3%	0.9%
Style	20.6%	12.7%	9.2%	22.3%	22.8%	15.6%	12.6%	13.2%	11.8%	20.5%
Information	5.4%	2.6%	5.5%	12.0%	7.8%	7.5%	9.6%	9.2%	2.3%	4.1%
Misc.	27.6%	3.1%	3.2%	6.9%	3.1%	0.8%	9.3%	5.2%	16.8%	5.3%

TABLE 8 (cont.) Summary of coding of changes suggested during editing as percentages of the total NCUs
Including ranges, and Structure sub-categories as a percentage of the Structure total

	TOM	UNA	VAL	WAN	XIAN	YVES	ZOLA	Totals	Range	% of str. NCUs
Word order	1.2%	0.2%	0.7%	2.0%	1.5%	0.2%	0.4%	0.8%	0.2% 2.5%	1.3%
Preposition	8.6%	10.2%	8.0%	8.3%	9.5%	9.6%	11.5%	9.1%	4.4% 12.2%	16.3%
Verb	4.5%	4.8%	8.8%	7.6%	11.8%	5.2%	4.3%	7.2%	3.8% 13.6%	12.9%
Articles & determiners	24.0%	17.4%	21.2%	25.5%	18.4%	16.4%	27.5%	21.6%	8.9% 47.7%	38.7%
Adverbs	1.2%	0.9%	0.7%	1.3%	1.0%	0.2%	1.9%	0.8%	0.0% 3.8%	1.4%
Nouns & comp. nouns	7.5%	6.0%	9.9%		4.8%	12.0%	8.8%	6.9%	1.3% 12.1%	12.3%
Word form	4.1%	6.1%	2.0%	4.0%	2.3%	3.4%	3.1%	3.5%	1.2% 6.9%	6.3%
Conjunctions	3.4%	2.2%	2.4%	1.0%	1.4%	1.9%	2.1%	2.0%	0.0% 4.5%	3.5%
Adjectives & modifiers	3.4%	0.7%	1.7%	0.3%	1.3%	0.5%	2.7%	1.3%	0.3% 4.5%	2.3%
Possessives	0.0%	0.0%	0.2%	0.0%	0.5%	0.0%	0.6%	0.3%	0.0% 1.1%	0.5%
Agreement	0.3%	1.2%	1.1%	1.0%	0.5%	0.0%	0.4%	0.8%	0.0% 1.7%	1.4%
Relative pronouns	1.2%	0.3%	1.1%	3.0%	1.0%	0.8%	0.0%	0.6%	0.0% 3.0%	1.1%
Pronouns	0.0%	0.2%	0.7%	0.0%	0.1%	0.2%	0.0%	0.2%	0.0% 0.9%	0.4%
Misc. structure	0.0%	2.0%	0.7%	0.0%	0.9%	1.0%	1.8%	0.9%	0.0% 2.7%	1.6%
Structure total	59.6%	52.1%	59.4%	58.3%	55.0%	51.4%	65.1%	55.8%	37.1%	73.7%
Lexical	7.2%	8.3%	14.9%	10.9%	11.0%	8.3%	5.8%	10.0%	1.4%	26.3%
Cohesion	4.2%	2.0%	5.2%	1.7%	2.3%	2.7%	1.6%	2.8%	0.9%	5.3%
Style	12.8%	20.1%	13.6%	18.5%	20.6%	21.3%	15.2%	17.5%	9.2%	27.0%
Information	10.5%	12.6%	2.2%	8.9%	6.9%	12.2%	4.3%	8.9%	2.2%	13.4%
Misc.	5.8%	4.8%	4.7%	1.7%	4.2%	4.1%	8.0%	4.9%	0.8%	27.6%

Tables 9 b-e. One-way ANOVAs on NCUs in participants' manuscripts

b. Based on coded changes by 234 individual codes

SUMMARY				
<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
ANN	234	577.51	2.468	103.09
BEN	234	884.9	3.7816	203.83
CHAZ	234	370.22	1.5821	52.889
DEE	234	645.14	2.757	84.737
EVE	234	1133.7	4.845	235.16
FENI	234	728.97	3.1153	144.96
GEE	234	1218.1	5.2057	315.76
HAL	234	1027.6	4.3916	245.51
INA	234	201.23	0.86	5.8926
JEN	234	301.33	1.2877	27.496
KEN	234	681.34	2.9117	257.6
LIZA	234	362.52	1.5492	42.088
MON	234	1091.3	4.6637	301.83
NAM	234	898.38	3.8392	208.9
OYLE	234	301.61	1.2889	19.065
PAT	234	768.98	3.2863	144.36
QUIN	234	714.37	3.0529	93.934
ROB	234	286.44	1.2241	46.194
SAM	234	361.83	1.5463	24.992
TOM	234	683.83	2.9223	112.42
UNA	234	706.19	3.0179	118.45
VAL	234	406.8	1.7385	28.483
WAN	234	547.41	2.3393	80.464
XIAN	234	643.71	2.7509	76.466
YVES	234	758.48	3.2414	117.67
ZOLA	234	932.98	3.9871	188.92

ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	8648.8	25	345.95	2.7413	0.0000	1.5079
Within Groups	764510	6058	126.2			
Total	773158	6083				

c. Based on coded changes by 192 structure codes

SUMMARY				
<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
ANN	192	471	2.4531	162.04
BEN	192	218	1.1354	25.594
CHAZ	192	72	0.375	2.1099
DEE	192	448	2.3333	77.291
EVE	192	633	3.2969	109.27
FENI	192	395	2.0573	43.876
GEE	192	390	2.0313	41.151
HAL	192	671	3.4948	220
INA	192	249	1.2969	12.587
JEN	192	117	0.6094	3.8623
KEN	192	451	2.349	244.36
LIZA	192	254	1.3229	42.209
MON	192	370	1.9271	41.911
NAM	192	297	1.5469	38.249
OYLE	192	348	1.8125	52.614
PAT	192	444	2.3125	130.26
QUIN	192	366	1.9063	49.311
ROB	192	226	1.1771	66.188
SAM	192	210	1.0938	16.18
TOM	192	382	1.9896	83.623
UNA	192	306	1.5938	34.064
VAL	192	319	1.6615	27.796
WAN	192	176	0.9167	19.972
XIAN	192	480	2.5	60.545
YVES	192	304	1.5833	30.956
ZOLA	192	334	1.7396	55.157

ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	2548.3	25	101.93	1.5671	0.0359	1.5083
Within Groups	323015	4966	65.045			
Total	325563	4991				

d. Based on coded changes by 14 Structure sub-categories

SUMMARY				
<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
ANN	14	344.33	24.595	2289
BEN	14	423.06	30.219	2106
CHAZ	14	170.88	12.206	206.99
DEE	14	355.52	25.394	1152.9
EVE	14	632.88	45.206	2540.6
FENI	14	320.31	22.879	840.48
GEE	14	639.43	45.673	2463.5
HAL	14	569.42	40.673	3990.5
INA	14	126.86	9.0612	214.76
JEN	14	111.93	7.9949	52.18
KEN	14	502.12	35.866	7207.2
LIZA	14	264.61	18.901	1802.1
MON	14	456.27	32.591	1932.8
NAM	14	486.03	34.717	3732
OYLE	14	202.63	14.474	461.56
PAT	14	422.06	30.147	3000.6
QUIN	14	415.69	29.692	1761.7
ROB	14	187.11	13.365	978.25
SAM	14	222.84	15.917	532.85
TOM	14	407.54	29.11	1865.1
UNA	14	368.15	26.296	1228.1
VAL	14	241.67	17.262	578.44
WAN	14	319.03	22.788	1348.6
XIAN	14	353.94	25.282	1247.2
YVES	14	390.17	27.869	1603.3
ZOLA	14	607.46	43.39	4751.6

ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	40548	25	1621.9	0.8453	0.6821	1.5387
Within Groups	648548	338	1918.8			
Total	689096	363				

e. Based on coded changes by 6 main categories

SUMMARY				
<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
ANN	6	577.5327	96.25545	15737.69
BEN	6	884.94	147.49	24508.62
CHAZ	6	370.2393	61.70656	4012.729
DEE	6	645.17	107.5283	15584.96
EVE	6	1133.789	188.9649	50132.95
FENI	6	729.0011	121.5002	13261.83
GEE	6	1218.192	203.0321	52560.32
HAL	6	1027.668	171.278	41343.13
INA	6	201.2388	33.5398	2187.157
JEN	6	301.3448	50.22414	1793.661
KEN	6	681.3724	113.5621	36909.03
LIZA	6	362.5404	60.4234	10088.62
MON	6	1091.347	181.8912	23069.86
NAM	6	898.4222	149.737	31551.27
OYLE	6	301.6187	50.26978	5819.86
PAT	6	769.0179	128.1696	21373.16
QUIN	6	714.4006	119.0668	22040.78
ROB	6	286.4553	47.74255	4979.128
SAM	6	361.8443	60.30738	6941.692
TOM	6	683.8581	113.9763	21140.99
UNA	6	706.2199	117.7033	17061.63
VAL	6	406.8192	67.80319	7688.455
WAN	6	547.4307	91.23846	13655.45
XIAN	6	643.7363	107.2894	16351.59
YVES	6	758.5185	126.4198	19271.25
ZOLA	6	933.0225	155.5037	50880.12

ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	337333.2	25	13493.33	0.6620	0.8846	1.5909
Within Groups	2649730	130	20382.54			
Total	2987063	155				

Table 10 Correlations between participants' writing NCU's based on coded changes by 234 Structure and non-structure codes

	ANN	BEN	CHAZ	DEE	EVE	FENI	GEE	HAL	INA	JEN	KEN	LIZA	MON	NAM	OYLE	PAT	QUIN	ROB	SAM	TOM	UNA	VAL	WAN	XIAN	YVES	ZOLA	
ANN	1.00																										
BEN	0.61	1.00																									
CHAZ	0.61	0.66	1.00																								
DEE	0.80	0.83	0.71	1.00																							
EVE	0.66	0.80	0.74	0.94	1.00																						
FENI	0.59	0.85	0.85	0.82	0.87	1.00																					
GEE	0.71	0.82	0.75	0.91	0.91	0.90	1.00																				
HAL	0.82	0.78	0.67	0.89	0.85	0.82	0.88	1.00																			
INA	0.61	0.69	0.79	0.77	0.81	0.83	0.79	0.79	1.00																		
JEN	0.42	0.45	0.43	0.50	0.47	0.52	0.52	0.48	0.47	1.00																	
KEN	0.88	0.47	0.46	0.63	0.45	0.37	0.48	0.71	0.49	0.32	1.00																
LIZA	0.88	0.58	0.56	0.68	0.54	0.52	0.57	0.78	0.63	0.37	0.93	1.00															
MON	0.68	0.80	0.81	0.86	0.88	0.95	0.92	0.86	0.82	0.63	0.44	0.57	1.00														
NAM	0.80	0.82	0.72	0.89	0.85	0.86	0.90	0.92	0.83	0.52	0.67	0.76	0.90	1.00													
OYLE	0.86	0.62	0.64	0.78	0.70	0.67	0.76	0.88	0.73	0.42	0.82	0.87	0.72	0.84	1.00												
PAT	0.91	0.68	0.74	0.82	0.72	0.70	0.76	0.88	0.75	0.48	0.87	0.89	0.75	0.86	0.89	1.00											
QUIN	0.69	0.84	0.72	0.80	0.74	0.82	0.76	0.78	0.72	0.48	0.54	0.72	0.79	0.79	0.71	0.75	1.00										
ROB	0.82	0.37	0.35	0.53	0.37	0.27	0.41	0.61	0.44	0.35	0.91	0.84	0.34	0.57	0.71	0.78	0.45	1.00									
SAM	0.81	0.66	0.57	0.81	0.73	0.65	0.70	0.77	0.68	0.45	0.71	0.74	0.68	0.80	0.77	0.77	0.73	0.66	1.00								
TOM	0.91	0.68	0.66	0.82	0.71	0.68	0.78	0.90	0.70	0.53	0.84	0.86	0.75	0.84	0.89	0.93	0.75	0.77	0.76	1.00							
UNA	0.80	0.78	0.72	0.91	0.88	0.87	0.93	0.94	0.80	0.57	0.62	0.69	0.93	0.93	0.83	0.84	0.75	0.54	0.74	0.86	1.00						
VAL	0.64	0.70	0.78	0.80	0.83	0.81	0.77	0.73	0.82	0.41	0.53	0.67	0.79	0.78	0.72	0.74	0.79	0.46	0.71	0.71	0.75	1.00					
WAN	0.93	0.65	0.72	0.80	0.71	0.69	0.74	0.87	0.71	0.42	0.86	0.88	0.75	0.84	0.90	0.94	0.70	0.76	0.78	0.90	0.83	0.70	1.00				
XIAN	0.66	0.85	0.74	0.85	0.84	0.90	0.87	0.88	0.85	0.51	0.53	0.68	0.88	0.92	0.77	0.78	0.85	0.49	0.71	0.77	0.87	0.83	0.73	1.00			
YVES	0.77	0.82	0.68	0.96	0.93	0.86	0.94	0.91	0.77	0.53	0.55	0.63	0.91	0.91	0.77	0.78	0.77	0.46	0.76	0.82	0.95	0.78	0.77	0.87	1.00		
ZOLA	0.89	0.59	0.58	0.75	0.63	0.57	0.67	0.81	0.67	0.57	0.89	0.88	0.66	0.79	0.86	0.89	0.66	0.82	0.83	0.88	0.77	0.64	0.88	0.67	0.71	1.00	

Min	0.27
Max	0.96
Mean	0.73

Note: All significant at $p < 0.001$; $df = 232$

Table 11 Correlations between participants' writing NCUs based on coded changes by 192 structure codes

	ANN	BEN	CHAZ	DEE	EVE	FENI	GEE	HAL	INA	JEN	KEN	LIZA	MON	NAM	OYLE	PAT	QUIN	ROB	SAM	TOM	UNA	VAL	WAN	XIAN	YVES	ZOLA
ANN	1.00																									
BEN	0.60	1.00																								
CHAZ	0.77	0.43	1.00																							
DEE	0.84	0.74	0.62	1.00																						
EVE	0.63	0.60	0.53	0.88	1.00																					
FENI	0.57	0.72	0.60	0.69	0.72	1.00																				
GEE	0.73	0.65	0.68	0.84	0.80	0.76	1.00																			
HAL	0.85	0.70	0.78	0.83	0.76	0.86	0.83	1.00																		
INA	0.60	0.44	0.65	0.62	0.67	0.74	0.68	0.77	1.00																	
JEN	0.72	0.37	0.73	0.57	0.46	0.56	0.66	0.73	0.59	1.00																
KEN	0.97	0.58	0.79	0.77	0.53	0.55	0.68	0.85	0.57	0.74	1.00															
LIZA	0.92	0.65	0.76	0.73	0.54	0.67	0.67	0.87	0.66	0.71	0.94	1.00														
MON	0.76	0.62	0.78	0.80	0.78	0.88	0.81	0.93	0.83	0.68	0.74	0.80	1.00													
NAM	0.89	0.66	0.79	0.82	0.70	0.78	0.80	0.91	0.76	0.72	0.88	0.92	0.92	1.00												
OYLE	0.86	0.54	0.79	0.75	0.65	0.72	0.78	0.90	0.72	0.74	0.86	0.89	0.85	0.88	1.00											
PAT	0.96	0.60	0.84	0.78	0.61	0.66	0.75	0.91	0.67	0.79	0.97	0.94	0.83	0.93	0.91	1.00										
QUIN	0.61	0.89	0.55	0.71	0.59	0.83	0.69	0.74	0.56	0.45	0.59	0.74	0.75	0.76	0.64	0.64	1.00									
ROB	0.97	0.57	0.77	0.76	0.53	0.53	0.67	0.84	0.56	0.74	0.98	0.92	0.71	0.86	0.85	0.97	0.56	1.00								
SAM	0.85	0.70	0.69	0.94	0.84	0.74	0.85	0.86	0.71	0.61	0.80	0.77	0.87	0.89	0.79	0.82	0.73	0.76	1.00							
TOM	0.93	0.64	0.84	0.80	0.64	0.71	0.80	0.93	0.68	0.80	0.93	0.91	0.85	0.89	0.90	0.96	0.68	0.93	0.84	1.00						
UNA	0.87	0.63	0.81	0.86	0.79	0.80	0.84	0.95	0.78	0.76	0.86	0.85	0.93	0.93	0.90	0.91	0.68	0.84	0.90	0.91	1.00					
VAL	0.70	0.56	0.58	0.78	0.78	0.76	0.76	0.78	0.69	0.53	0.62	0.73	0.84	0.79	0.76	0.68	0.73	0.60	0.81	0.73	0.78	1.00				
WAN	0.95	0.56	0.81	0.78	0.61	0.61	0.72	0.89	0.64	0.76	0.96	0.91	0.78	0.88	0.90	0.97	0.57	0.80	0.94	0.89	0.65	1.00				
XIAN	0.71	0.78	0.69	0.73	0.67	0.90	0.76	0.88	0.74	0.62	0.69	0.82	0.89	0.87	0.81	0.77	0.90	0.68	0.78	0.80	0.83	0.81	0.73	1.00		
YVES	0.81	0.70	0.65	0.95	0.90	0.74	0.86	0.87	0.69	0.58	0.74	0.74	0.85	0.85	0.77	0.79	0.72	0.72	0.94	0.81	0.87	0.84	0.77	0.78	1.00	
ZOLA	0.94	0.60	0.78	0.81	0.65	0.67	0.79	0.90	0.70	0.78	0.93	0.89	0.82	0.91	0.88	0.95	0.61	0.92	0.85	0.93	0.92	0.68	0.93	0.75	0.82	1.00

Min	0.37
Max	0.98
Mean	0.77

Note: All significant at p<0.001; df = 190

Table 12 Correlations between participants' writing structure NCUUs based on coded changes in 14 Structure sub-categories

	ANN	BEN	CHAZ	DEE	EVE	FENI	GEE	HAL	INA	JEN	KEN	LIZA	MON	NAM	OYLE	PAT	QUIN	ROB	SAM	TOM	UNA	VAL	WAN	XIAN	YVES	ZOLA
ANN	1.00																									
BEN	0.78	1.00																								
CHAZ	0.83	**0.68	1.00																							
DEE	0.91	0.83	**0.75	1.00																						
EVE	**0.68	0.88	**0.73	0.85	1.00																					
FENI	**0.76	0.89	0.80	0.81	0.92	1.00																				
GEE	**0.68	0.79	0.79	0.83	0.96	0.92	1.00																			
HAL	0.92	0.84	0.87	0.91	0.86	0.93	0.88	1.00																		
INA	0.94	**0.75	0.93	0.86	**0.73	0.85	0.78	0.96	1.00																	
JEN	0.80	**0.70	0.87	**0.70	*0.66	0.83	**0.73	0.84	0.88	1.00																
KEN	0.99	**0.75	0.83	0.87	*0.64	**0.75	*0.65	0.92	0.96	0.81	1.00															
LIZA	0.97	0.81	0.85	0.85	**0.69	0.83	**0.70	0.94	0.97	0.87	0.98	1.00														
MON	0.89	0.82	0.91	0.90	0.88	0.92	0.91	0.99	0.96	0.84	0.89	0.92	1.00													
NAM	0.93	0.83	0.89	0.89	0.82	0.93	0.85	0.99	0.98	0.88	0.94	0.96	0.98	1.00												
OYLE	0.93	0.87	0.90	0.89	0.83	0.90	0.83	0.98	0.97	0.85	0.94	0.96	0.97	0.98	1.00											
PAT	0.96	0.83	0.89	0.89	**0.78	0.88	0.80	0.98	0.99	0.88	0.97	0.99	0.97	0.99	0.98	1.00										
QUIN	0.88	0.94	0.83	0.87	0.85	0.94	0.83	0.93	0.89	0.86	0.86	0.93	0.91	0.94	0.94	0.94	1.00									
ROB	0.99	**0.74	0.81	0.88	*0.63	**0.74	*0.64	0.91	0.95	0.80	1.00	0.98	0.88	0.93	0.93	0.96	0.86	1.00								
SAM	0.92	0.85	0.84	0.98	0.89	0.87	0.88	0.96	0.92	**0.76	0.89	0.89	0.96	0.94	0.95	0.94	0.90	0.90	1.00							
TOM	0.97	0.79	0.90	0.94	0.78	0.83	0.80	0.96	0.97	0.85	0.96	0.95	0.95	0.96	0.96	0.98	0.90	0.96	0.97	1.00						
UNA	0.89	0.80	0.91	0.90	0.87	0.90	0.90	0.98	0.95	0.83	0.89	0.90	0.99	0.96	0.97	0.95	0.88	0.87	0.95	0.95	1.00					
VAL	0.94	0.91	0.81	0.96	0.87	0.91	0.86	0.97	0.92	0.81	0.91	0.93	0.95	0.96	0.95	0.95	0.96	0.91	0.98	0.96	0.93	1.00				
WAN	0.96	0.84	0.86	0.88	**0.76	0.86	**0.76	0.96	0.97	0.85	0.97	0.99	0.94	0.98	0.98	0.99	0.93	0.96	0.92	0.96	0.93	0.95	1.00			
XIAN	0.86	0.93	0.83	0.84	0.86	0.97	0.85	0.95	0.90	0.87	0.86	0.93	0.93	0.96	0.95	0.95	0.99	0.85	0.89	0.89	0.90	0.95	0.94	1.00		
YVES	0.84	0.83	**0.77	0.96	0.93	0.88	0.93	0.94	0.85	**0.71	0.80	0.81	0.94	0.90	0.89	0.88	0.86	0.81	0.98	0.91	0.93	0.95	0.86	0.86	1.00	
ZOLA	0.96	**0.78	0.88	0.93	0.79	0.85	0.82	0.98	0.97	0.85	0.95	0.94	0.96	0.97	0.96	0.97	0.89	0.95	0.97	0.99	0.96	0.96	0.95	0.89	0.92	1.00

Min	0.63
Max	0.99
Av.	0.83

Note: All values significant at p<0.001 except, * significant at p<0.05, **significant at p<0.01; df = 11. (Values corrected to 2 decimal places, Significance based on uncorrected values)

Table 13 Correlation matrix between participants' writing NCUs based on coded changes grouped into 6 main categories

	ANN	BEN	CHAZ	DEE	EVE	FENI	GEE	HAL	INA	JEN	KEN	LIZA	MON	NAM	NAM	OYLE	PAT	QUIN	ROB	SAM	TOM	UNA	VAL	WAN	XIAN	YVES	ZOLA	
ANN	1.00																											
BEN	0.93	1.00																										
CHAZ	0.87	0.88	1.00																									
DEE	0.99	0.95	0.89	1.00																								
EVE	0.99	0.95	0.91	1.00	1.00																							
FENI	0.92	0.98	0.94	0.94	0.94	1.00																						
GEE	0.98	0.97	0.91	0.99	0.99	0.98	1.00																					
HAL	1.00	0.95	0.87	1.00	0.99	0.94	0.99	1.00																				
INA	0.98	0.94	0.92	0.99	0.99	0.93	0.98	0.98	1.00																			
JEN	*0.72	*0.71	*0.53	*0.70	*0.69	*0.65	*0.70	*0.69	*0.74	1.00																		
KEN	0.98	0.92	0.86	0.99	0.99	0.90	0.96	0.98	0.99	*0.74	1.00																	
LIZA	0.98	0.90	0.88	0.99	0.99	0.89	0.96	0.98	0.99	*0.72	1.00	1.00																
MON	0.96	0.99	0.91	0.96	0.96	0.99	0.99	0.97	0.95	*0.72	0.93	0.92	1.00															
NAM	0.97	0.99	0.89	0.98	0.99	0.97	1.00	0.99	0.97	*0.73	0.97	0.96	0.99	1.00														
OYLE	0.99	0.94	0.88	1.00	1.00	0.93	0.99	1.00	0.99	*0.71	0.99	0.99	0.96	0.98	1.00													
PAT	0.99	0.91	0.89	0.99	0.99	0.91	0.97	0.98	0.99	*0.77	0.99	0.99	0.94	0.96	0.99	1.00												
QUIN	0.99	0.93	0.92	0.99	0.99	0.93	0.98	0.98	1.00	*0.72	0.99	0.99	0.96	0.97	0.99	1.00	1.00											
ROB	0.94	0.86	*0.76	0.94	0.93	0.82	0.90	0.93	0.95	0.86	0.97	0.96	0.87	0.91	0.95	0.97	0.95	1.00										
SAM	0.98	0.97	0.87	0.99	0.99	0.94	0.98	0.98	0.99	*0.78	0.99	0.98	0.97	0.99	0.99	0.98	0.98	0.96	1.00									
TOM	0.99	0.91	0.87	0.99	0.99	0.90	0.97	0.99	0.99	*0.73	0.99	1.00	0.94	0.97	1.00	0.99	0.99	0.96	0.98	1.00								
UNA	0.99	0.96	0.87	0.99	0.99	0.95	1.00	1.00	0.97	*0.73	0.97	0.96	0.98	0.99	0.99	0.97	0.98	0.92	0.99	0.98	1.00							
VAL	0.95	0.93	0.92	0.98	0.98	0.92	0.96	0.96	0.99	*0.71	0.98	0.98	0.93	0.96	0.98	0.98	0.99	0.94	0.98	0.97	0.95	1.00						
WAN	0.99	0.97	0.91	1.00	1.00	0.96	1.00	0.99	0.99	*0.70	0.98	0.98	0.98	0.99	0.99	0.98	0.99	0.92	0.99	0.98	0.99	0.98	1.00					
XIAN	0.98	0.98	0.90	0.99	0.99	0.97	0.99	0.99	0.99	*0.74	0.98	0.97	0.99	1.00	0.99	0.98	0.98	0.93	1.00	0.97	0.99	0.98	1.00	1.00				
YVES	0.99	0.97	0.87	0.99	0.98	0.96	1.00	0.99	0.97	*0.72	0.96	0.96	0.99	0.99	0.98	0.96	0.97	0.91	0.99	0.97	1.00	0.94	0.99	0.99	1.00			
ZOLA	0.98	0.93	0.85	0.99	0.98	0.90	0.97	0.98	0.99	*0.80	1.00	0.99	0.94	0.97	0.99	0.99	0.99	0.98	0.99	0.99	0.97	0.98	0.98	0.98	0.97	1.00		

Min	0.53
Max	0.9995
Av.	0.86

All significant at or above p<0.05 EXCEPT those preceded by * which are NOT significant (p>0.05); df = 4.

Table 15 Correlation matrix of numbers of tokens of word types in 26 manuscripts based on the 137 Wmatrix categories

	ANN	BEN	CHAZ	DEE	EVE	FENI	GEE	HAL	INA	JEN	KEN	LIZA	MON	NAM	OYLE	PAT	QUIN	ROB	SAM	TOM	UNA	VAL	WAN	XIAN	YVES	ZOLA		
ANN	1.00																											
BEN	0.96	1.00																										
CHAZ	0.91	0.88	1.00																									
DEE	0.96	0.97	0.90	1.00																								
EVE	0.97	0.95	0.90	0.98	1.00																							
FENI	0.96	0.98	0.89	0.99	0.98	1.00																						
GEE	0.94	0.90	0.92	0.94	0.96	0.93	1.00																					
HAL	0.98	0.96	0.91	0.96	0.96	0.97	0.96	1.00																				
INA	0.95	0.92	0.87	0.94	0.94	0.93	0.89	0.94	1.00																			
JEN	0.91	0.83	0.87	0.88	0.91	0.86	0.95	0.92	0.87	1.00																		
KEN	0.96	0.96	0.92	0.96	0.94	0.96	0.90	0.96	0.94	0.84	1.00																	
LIZA	0.98	0.96	0.93	0.97	0.96	0.97	0.94	0.98	0.95	0.89	0.99	1.00																
MON	0.98	0.95	0.94	0.96	0.97	0.95	0.96	0.97	0.94	0.93	0.95	0.97	1.00															
NAM	0.96	0.96	0.91	0.96	0.95	0.96	0.90	0.95	0.90	0.83	0.97	0.98	0.94	1.00														
OYLE	0.95	0.92	0.96	0.93	0.92	0.93	0.93	0.96	0.91	0.87	0.97	0.97	0.95	0.95	1.00													
PAT	0.95	0.96	0.90	0.96	0.93	0.96	0.90	0.95	0.92	0.83	0.98	0.98	0.94	0.99	0.96	1.00												
QUIN	0.95	0.95	0.95	0.95	0.93	0.94	0.94	0.97	0.92	0.89	0.96	0.97	0.97	0.95	0.96	0.95	1.00											
ROB	0.98	0.96	0.92	0.95	0.94	0.95	0.91	0.97	0.95	0.87	0.99	0.99	0.96	0.97	0.97	0.98	0.96	1.00										
SAM	0.97	0.92	0.96	0.94	0.94	0.93	0.96	0.96	0.91	0.93	0.95	0.97	0.97	0.95	0.98	0.95	0.97	0.96	1.00									
TOM	0.95	0.92	0.94	0.96	0.96	0.94	0.97	0.95	0.90	0.92	0.92	0.96	0.96	0.94	0.93	0.93	0.95	0.93	0.96	1.00								
UNA	0.97	0.97	0.91	0.98	0.97	0.98	0.94	0.97	0.92	0.88	0.97	0.98	0.96	0.98	0.95	0.98	0.95	0.97	0.96	0.96	1.00							
VAL	0.91	0.87	0.86	0.87	0.88	0.88	0.94	0.94	0.87	0.95	0.86	0.89	0.91	0.83	0.87	0.84	0.90	0.89	0.90	0.88	0.88	1.00						
WAN	0.94	0.96	0.90	0.96	0.93	0.96	0.89	0.94	0.89	0.81	0.96	0.96	0.93	0.98	0.94	0.98	0.95	0.95	0.94	0.94	0.98	0.82	1.00					
XIAN	0.94	0.90	0.88	0.91	0.91	0.91	0.94	0.97	0.91	0.95	0.91	0.92	0.94	0.86	0.91	0.88	0.92	0.92	0.93	0.90	0.91	0.98	0.85	1.00				
YVES	0.97	0.92	0.94	0.95	0.96	0.94	0.97	0.98	0.94	0.94	0.94	0.96	0.98	0.92	0.96	0.95	0.98	0.95	0.95	0.93	0.91	0.95	1.00					
ZOLA	0.96	0.97	0.89	0.98	0.97	0.99	0.93	0.97	0.93	0.85	0.97	0.97	0.95	0.97	0.93	0.97	0.94	0.97	0.93	0.95	0.98	0.87	0.96	0.90	0.93	1.00		

Min.	0.81
Max.	0.99
Av.	0.94

Note: All significant at $p < 0.001$; $df = 135$.

Table 16 Correlation matrix of numbers of tokens of word types in 26 manuscripts based on the 11 Structure sub-categories

	ANN	BEN	CHAZ	DEE	EVE	FENI	GEE	HAL	INA	JEN	KEN	LIZA	MON	NAM	OYLE	PAT	QUIN	ROB	SAM	TOM	UNA	VAL	WAN	XIAN	YVES	ZOLA			
ANN	1.00																												
BEN	0.98	1.00																											
CHAZ	0.96	0.97	1.00																										
DEE	0.98	0.98	0.99	1.00																									
EVE	0.98	0.96	0.97	0.99	1.00																								
FENI	0.98	0.98	0.99	1.00	0.98	1.00																							
GEE	0.97	0.95	0.99	0.98	0.99	0.99	1.00																						
HAL	0.99	0.99	0.98	0.99	0.97	0.99	0.98	1.00																					
INA	0.97	0.98	0.93	0.95	0.94	0.96	0.93	0.98	1.00																				
JEN	0.96	0.96	0.93	0.96	0.96	0.96	0.93	0.96	0.97	1.00																			
KEN	0.98	0.98	0.98	0.97	0.97	0.98	0.98	0.99	0.97	0.95	1.00																		
LIZA	0.98	0.97	0.97	0.98	0.98	0.98	0.99	0.97	0.96	1.00	1.00																		
MON	1.00	0.99	0.97	0.99	0.98	0.99	0.97	0.99	0.97	0.96	0.97	0.98	1.00																
NAM	0.99	0.99	0.99	0.99	0.98	0.99	0.98	1.00	0.97	0.96	0.99	0.99	0.99	1.00															
OYLE	0.98	0.98	0.98	0.98	0.96	0.98	0.98	1.00	0.97	0.94	0.99	0.99	0.98	0.99	1.00														
PAT	0.98	0.98	0.97	0.97	0.95	0.97	0.96	0.99	0.98	0.95	1.00	0.99	0.97	0.99	0.99	1.00													
QUIN	0.98	0.99	0.98	0.99	0.96	0.99	0.96	0.99	0.97	0.97	0.98	0.98	0.99	0.99	0.98	0.98	1.00												
ROB	0.98	0.98	0.96	0.96	0.95	0.97	0.96	0.99	0.98	0.95	1.00	0.99	0.97	0.99	0.97	0.99	0.98	1.00											
SAM	0.99	0.98	0.99	0.99	0.98	0.99	0.99	1.00	0.97	0.95	0.99	0.99	0.99	1.00	0.99	0.99	0.99	0.99	1.00										
TOM	0.98	0.96	0.98	0.99	1.00	0.99	0.99	0.98	0.95	0.96	0.97	0.98	0.98	0.98	0.97	0.96	0.98	1.00											
UNA	0.99	0.98	0.99	0.99	0.99	0.99	0.99	1.00	0.96	0.95	0.99	0.99	0.99	1.00	0.99	0.98	0.99	0.99	1.00										
VAL	0.97	0.99	0.95	0.97	0.95	0.98	0.94	0.98	0.99	0.98	0.97	0.97	0.98	0.98	0.97	0.98	0.98	0.99	0.99	1.00									
WAN	0.98	0.99	0.99	0.99	0.96	0.99	0.97	1.00	0.97	0.95	0.98	0.98	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.98	1.00								
XIAN	0.96	0.98	0.94	0.96	0.94	0.97	0.92	0.97	0.98	0.98	0.95	0.95	0.96	0.97	0.95	0.96	0.97	0.95	0.96	0.94	0.95	0.99	0.97	1.00					
YVES	0.99	0.98	0.98	0.99	0.98	0.99	0.99	1.00	0.97	0.96	0.98	0.99	0.99	0.99	0.99	0.98	0.99	0.99	0.99	0.98	1.00	0.99	1.00	0.98	0.99	0.97	1.00		
ZOLA	0.98	0.97	0.98	0.98	0.98	0.98	0.99	0.99	0.96	0.94	1.00	1.00	0.98	0.99	0.99	0.99	0.99	0.99	0.99	0.98	0.99	0.99	0.98	0.99	0.96	0.98	0.94	0.98	1.00

Min. 0.92
Max. 0.999
Av. 0.98

Note: All significant at p<0.001; df = 9

Table 18 (cont.) Comparison of rates of occurrence of NCUs per 1000 words of the manuscripts and per 100 words /word type

Per 1000 words Per 100 words/category	SAM	TOM	UNA	VAL	WAN	XIAN	YVES	ZOLA	TOTAL	t stat
Prepositions	7.1 6.1	11.5 12.1	14.1 13.2	6.7 6.0	9.5 9.0	12.6 12.7	14.3 13.9	20.4 15.3	11.2 10.0	2.21*
Verbs	5.6 5.0	6.9 6.6	9.4 8.9	8.1 5.1	10.6 8.6	16.7 9.6	8.8 7.5	10.4 10.2	10.4 8.3	3.81***
Arts, dets & poss	16.5 5.4	32.1 10.5	23.9 7.9	18.0 6.6	29.1 9.5	25.0 9.4	24.4 8.2	49.7 15.9	26.9 9.2	10.56***
Adverbs	1.1 6.8	1.7 4.9	1.6 7.3	0.9 2.9	1.5 12.5	1.7 6.4	0.3 1.6	5.2 21.1	1.2 4.7	-6.16***
Nouns	10.5 3.5	12.3 4.0	13.1 4.3	8.9 3.3	7.2 2.3	8.3 3.1	20.1 6.8	16.2 5.2	10.6 3.6	8.27***
Conjunctions	1.7 3.6	4.6 7.6	3.0 6.1	2.0 4.0	1.1 2.4	1.8 2.7	2.8 4.2	3.8 11.6	2.4 4.8	-6.30***
Adjectives. and mods.	1.3 1.5	7.3 8.1	2.6 3.1	1.9 2.7	1.5 2.3	0.6 0.9	2.3 2.5	5.5 7.3	2.5 3.1	-4.64***
Relative pronouns	0.0 0.0	1.7 0.0	0.5 10.5	0.9 15.0	3.4 75.0	1.4 13.4	1.3 27.8	0.0 0.0	0.8 16.2	-4.16***
Pronouns	0.0 0.0	0.0 0.0	0.2 7.7	1.1 4.5	0.0 0.0	0.2 0.6	0.3 4.5	0.0 0.0	0.4 4.1	-3.92***
Misc structure	0.2 1.6	0.0 0.0	2.1 13.2	0.0 0.0	0.0 0.0	0.0 0.0	0.3 3.6	0.3 50.0	0.2 3.4	-2.54*
Correlation [r]	0.53	*0.67	0.03	0.10	-0.02	0.54	0.09	-0.01	0.24	

Note: *Significant at p<0.05; **Significant at p<0.01; ***Significant at p<0.001; correlation df = 8; t test df = 25.

Table 19 Tokens per individual code from the analysis of the 26 manuscripts

(Sub-category) / code	Tokens	(Sub-category) / code	Tokens	(Sub-category) / code	Tokens
(Word order)		(Verbs cont.)		(Verbs cont.)	
Gwo q/adj	8	Gv tense pres p→pres s	13	Gv form V3→V2	2
Gwo adj pos	24	Gv tense pres p→past s	18	Gv form V3→passive/modal	1
Gwo misc	88	Gv tense pres p→past p	2	Gv form V-ing→inf/to	29
(Prepositions)		Gv tense pperf con→pres p	1	Gv form V-ing→V1	10
Gprep choice	829	Gv tense past s→pres s	93	Gv form V-ing→V2	14
Gprep need	231	Gv tense past s→past con	4	Gv form V-ing→V3	2
Gprep n/n	208	Gv tense past s→pres perf	50	Gv form v-ing→pass	6
Gprep→adv	0	Gv tense past s→past p	5	Gv form v-ing→past con part	1
Gprep→verb	98	Gv tense past p→past s	2	Gv form inf/to→prep+V-ing	29
Gprep verb→prep	52	Gv tense past p→pres s	2	Gv form inf/to→pres s	8
Gprep→conj	26	Gv tense past p→pres p	4	Gv form inf/to→V2	2
Gprep rel pro	4	Gv tense past con→past s	4	Gv form inf→pass	1
Gprep be non loc	7	Gv tense future→pres s	6	Gv form presmod → pastmod	8
Gprep adverb→prep	1	Gv tense future→past s	0	Gv form pastmod → presmod	17
Verbs		Gv tensebe+V2/V1	8	Gv form modal→pres s	18
Gv tense pres s→pres perf	51	Gv form V1→inf/to	20	Gv form modal→past s	6
Gv tense pres s→past s	367	Gv form V1→V-ing	48	Gv form modal→pass	1
Gv tense pres s→pres con	4	Gv form V1→V2	10	Gv form modal→V-ing	1
Gv tense pres s→past con	1	Gv form V1→V3	20	Gv form modal→past p	1
Gv tense pres s→future	9	Gv form V1→perf part	3	Gv form modal→pres perf	3
Gv tense pres s→past perf	1	Gv form V2→inf/to	2	Gv form pres s→modal	7
Gv tense pres con→pres s	7	Gv form V2→V-ing	12	Gv form past s→modal	1
Gv tense pres con→pres p	4	Gv form V2→V1	7	Gv form irreg V2/V3	4
Gv tense pres con→past con	1	Gv form V2→V3	1	Gv unsucc pass	54
Gv tense pres con→past s	2	Gv form V3→V1	2	Gv pass V be omit	33

Table 19 (cont.) Tokens per individual code from the analysis of the 26 manuscripts

(Sub-category) / code	Tokens	(Sub-category) / code	Tokens	(Sub-category) / code	Tokens
(Verbs cont.)		(Arts. and Dets. Cont.)		(Word order)	
Gv no verb	72	Gart def→demo	37	Gwform adj→adv	17
Gv no aux	6	Gart indef→poss	3	Gwform adj→n	105
Gv verb n/n	18	G art indef→demo	0	Gwformadj→comp	12
Gv aux n/n	0	Gart indef sing→pl	0	Gwformadj→sup	6
Gv be+V1	2	Gart indef pl→sing	3	Gwform comp→adj	6
Gv be/have conf	10	Gart a/an/one	4	Gwform adv→adj	20
Gv double verb	1	Gart poss→def	12	Gwform adv→comp	1
(Articles and determiners)		Gart poss→indef	6	Gwform n→n	108
Gart def det	1921	Gart poss→demo	0	Gwform n→adj	114
Gart indef sing	432	Gart demo→def	25	Gwform n→adv	1
Gart poss omit	55	Gart form of demo	4	Gwform n→v	34
Gart no dem adj	14	Gart quant→def	4	Gwform v→n	71
Gart gen →number	1	Gadv pos	74	Gwform v→adj	28
Gart gen→each	1	Gadv miss	32	Gwform pref→adj	1
Gart gen→indef pl	1	Gadv ch	19	Gwform noun+ing	1
Gart def→gen	450	(Nouns and comp. nouns)		Gwform neg form	2
Gart def_title	8	Gn sing→pl	804	Gwform comp sup conf	3
Gart indef→gen	26	Gn pl→sing	220	Gwform n-v-inf	5
G art poss→gen	6	Gn pl→n/count	23	Gwform adj-v	5
Gart demo→gen	4	Gn add s to pl n	1	Gwform adv-n	1
Gart n/n	74	Gcompn→poss	4	Gwform adv→adv (or ph)	7
Gart def→indef	212	Gcompn w/o	12	Gwform more+comp/er	1
Gart def→poss	54	Gcompn pl 1st w	35	(Conjunctions)	
G art def→each/both/quant	2	(Word form)		Gconj n/need	32
Gart indef→def	94	Gwform adj→adj	16	Gconj choice	108

Table 19 (cont.) Tokens per individual code from the analysis of the 26 manuscripts

(Sub-category) / code	Tokens	(Sub-category) / code	Tokens	(Sub-category) / code	Tokens
(Conjunctions cont.)		(Adjs. And Mods. Cont.)		(Rel. pros. cont.)	
Gconj miss	150	Gadj (pnm) red rel cl no v-ing	1	Grel pro ch	23
Gconj not only/but also	3	Gadj ind cl → rel cl	5	Grel pro pro → rel pro	4
Gconj → rel pro	8	Gadj (ind) cl → pnm	17	Grel pro → conj	15
Gconj → prep	14	G adj inf comp → rel cl	4	(Pronouns)	
Gconj → adv	1	G adj inf comp → pnm	0	Grel pro → prep	5
(Adjectives and modifiers)		G adj inf comp → ind cl	0	Gpro miss	1
Gadj ed/ing conf	33	(Possessives)		Gpro ch	8
Gadj pl adj	1	Gposs → prep+noun	6	Gpro reflex p	3
Gadj → rel cl / adj	5	Gposs prep+n → poss-s	6	Gpro no ref	22
Gadj → pnm	69	G poss s issue	25	(Miscellaneous)	
G adj/rel cl → adj	6	Gposs apost	5	G no subj	27
Gadj rel cl → pnm	24	(Agreement)		G no obj	38
Gadj rel cl → inf comp	1	Gagree n/v	101	G no Wh w	1
Gadj rel cl → cl	2	Gagree n/demo/pro/poss	20	G no/not conf	5
Gadj pnm → adj	10	Gagree n-n	7	G ti/ta issue	23
Gadj pnm → rel cl	22	(Relative pronouns)		G either/neither conf	1
Gadj pnm → ind cl	0	Grel pro miss	30	G subj dup	4
Gadj pnm → inf comp	1	Grel pro n/n	23	G RO sent	41
				Total	8931

Notes: See Table 4 for code definitions).

Some codes show a nil return above. These codes had tokens in other manuscripts analyzed beyond the 26 included herein, particularly in the additional manuscripts analyzed for participants VAL, ROB and JEN mentioned in footnote ² in section 3.1.

Table 20 Structure NCU distribution in speech samples and meta-linguistic awareness score

	ANN	BEN	CHAZ	DEE	EVE	FENI	GEE	HAL	INA	JEN	KEN	LIZA	MON
Word order	1	0	4	5	3	5	4	3	2	3	4	2	2
Prepositions	13	3	20	40	35	20	17	23	4	14	24	9	22
Verbs	73	29	37	89	63	69	99	65	20	50	87	64	59
Articles and determiners	27	6	23	47	44	25	16	36	11	21	62	33	34
Adverbs	1	2	2	2	1	3	2	4	2	3	7	1	0
Nouns and compound nouns	19	3	16	36	25	22	8	23	7	16	31	14	24
Word form	2	5	8	3	5	5	2	7	1	0	7	3	5
Conjunctions	4	0	4	8	11	4	4	2	0	7	5	8	7
Adjectives and modifiers	1	0	0	0	0	0	0	2	0	1	0	0	0
Possessives	2	3	0	5	0	0	0	0	0	3	2	5	1
Agreement	0	6	14	0	1	2	4	2	1	0	3	1	2
Relative pronouns	0	0	0	1	1	0	1	3	0	3	0	2	1
Pronouns	0	0	8	0	2	1	0	0	1	3	5	3	13
Misc. structure	15	0	5	39	19	7	18	14	0	6	26	9	5
Total	158	57	141	275	210	163	175	184	49	130	263	154	175
Total words analyzed	1020	1011	1016	1026	1030	1002	1007	1007	1059	1006	1046	1023	1012
NCU %ow	15.5%	5.6%	13.9%	26.8%	20.4%	16.3%	17.4%	18.3%	4.6%	12.9%	25.1%	15.1%	17.3%
Prediction order score	-0.14	0.26	-0.38	0.09	0.04	-0.41	0.71	0.09	0.67	-0.64	-0.31	0.50	0.36

Table 20 (cont.) Structure NCU distribution in speech samples and meta-linguistic awareness score

	NAM	OYLE	PAT	QUIN	ROB	SAM	TOM	UNA	VAL	WAN	XIAN	YVES	ZOLA	Totals	% of total
Word order	3	3	5	1	1	2	5	2	4	8	5	5	5	82	1.9%
Prepositions	20	16	42	15	9	20	32	16	8	17	8	49	17	513	11.8%
Verbs	39	74	124	68	55	49	91	72	40	66	39	70	42	1633	37.5%
Articles and determiners	52	23	70	40	19	30	25	16	21	24	16	49	29	799	18.3%
Adverbs	0	1	10	1	0	10	3	1	1	2	1	1	2	63	1.4%
Nouns and compound nouns	27	21	43	30	12	21	13	17	28	32	8	22	5	523	12.0%
Word form	9	5	8	2	2	2	6	2	0	11	0	7	9	116	2.7%
Conjunctions	5	5	4	9	5	3	3	3	5	1	3	7	4	121	2.8%
Adjectives and modifiers	0	0	0	0	0	0	0	0	0	0	4	2	0	10	0.2%
Possessives	0	0	4	2	0	0	0	0	0	0	0	0	2	29	0.7%
Agreement	1	1	0	1	0	2	0	1	1	8	0	0	1	52	1.2%
Relative pronouns	7	1	0	2	0	0	1	2	0	0	0	0	0	25	0.6%
Pronouns	0	1	5	3	3	1	7	2	1	0	1	1	2	63	1.4%
Misc. structure	20	2	19	22	4	7	0	9	5	44	7	16	8	326	7.5%
Total	183	153	334	196	110	147	186	143	114	213	87	229	126	4355	
Total words analyzed	1005	1010	998	1000	1023	1020	1010	1005	1002	999	1028	1001	1031	26397	
NCU %w	18.2%	15.1%	33.5%	19.6%	10.8%	14.4%	18.4%	14.2%	11.4%	21.3%	8.5%	22.9%	12.2%	Mean 16.5%	
Prediction order score	0.60	-0.14	-0.10	0.36	0.6	-0.09	0.25	0.20	-0.07	0.71	-0.43	0.1	0.18		

Table 22 Correlations between distribution of NCU's in Speech sample

	ANN	BEN	CHAZ	DEE	EVE	FENI	GEE	HAL	INA	JEN	KEN	LIZA	MON	NAM	OYLE	PAT	QUIN	ROB	SAM	TOM	UNA	VAL	WAN	XIAN	YVES	ZOLA
ANN	1.00																									
BEN	0.91	1.00																								
CHAZ	0.87	0.83	1.00																							
DEE	0.95	0.76	0.86	1.00																						
EVE	0.92	0.75	0.91	0.97	1.00																					
FENI	0.98	0.91	0.91	0.94	0.93	1.00																				
GEE	0.96	0.94	0.81	0.88	0.83	0.95	1.00																			
HAL	0.97	0.85	0.92	0.97	0.97	0.98	0.90	1.00																		
INA	0.95	0.88	0.91	0.88	0.91	0.97	0.88	0.96	1.00																	
JEN	0.99	0.95	0.94	0.93	0.93	0.99	0.94	0.98	0.97	1.00																
KEN	0.96	0.80	0.89	0.95	0.96	0.94	0.86	0.98	0.95	0.94	1.00															
LIZA	0.98	0.90	0.87	0.91	0.92	0.96	0.93	0.96	0.96	0.98	0.96	1.00														
MON	0.94	0.83	0.94	0.91	0.95	0.96	0.86	0.96	0.96	0.97	0.95	0.95	1.00													
NAM	0.78	0.55	0.80	0.86	0.91	0.77	0.61	0.88	0.81	0.78	0.91	0.81	0.84	1.00												
OYLE	0.98	0.93	0.89	0.90	0.90	0.99	0.95	0.96	0.97	0.99	0.91	0.96	0.95	0.73	1.00											
PAT	0.97	0.85	0.92	0.96	0.97	0.98	0.90	0.99	0.98	0.98	0.98	0.97	0.98	0.86	0.96	1.00										
QUIN	0.97	0.80	0.87	0.97	0.95	0.95	0.88	0.97	0.94	0.96	0.98	0.96	0.95	0.89	0.93	0.97	1.00									
ROB	0.99	0.93	0.88	0.91	0.90	0.99	0.96	0.96	0.96	0.99	0.93	0.98	0.95	0.74	0.99	0.96	0.94	1.00								
SAM	0.94	0.82	0.92	0.94	0.96	0.96	0.86	0.98	0.97	0.96	0.96	0.93	0.96	0.86	0.94	0.99	0.95	0.93	1.00							
TOM	0.94	0.92	0.89	0.87	0.89	0.97	0.95	0.93	0.93	0.97	0.87	0.93	0.93	0.67	0.98	0.94	0.87	0.97	0.91	1.00						
UNA	0.98	0.93	0.87	0.91	0.88	0.99	0.98	0.95	0.93	0.98	0.90	0.95	0.92	0.69	0.99	0.94	0.92	0.99	0.92	0.97	1.00					
VAL	0.92	0.77	0.86	0.89	0.89	0.93	0.80	0.93	0.94	0.93	0.91	0.90	0.93	0.83	0.92	0.93	0.95	0.91	0.93	0.84	0.89	1.00				
WAN	0.90	0.74	0.77	0.93	0.84	0.86	0.85	0.88	0.79	0.84	0.86	0.82	0.79	0.76	0.82	0.85	0.90	0.83	0.82	0.76	0.86	0.83	1.00			
XIAN	0.99	0.97	0.90	0.93	0.90	0.97	0.97	0.96	0.95	0.98	0.95	0.98	0.92	0.73	0.97	0.96	0.95	0.99	0.92	0.95	0.97	0.87	0.84	1.00		
YVES	0.87	0.77	0.95	0.93	0.98	0.90	0.81	0.95	0.87	0.90	0.91	0.87	0.92	0.86	0.87	0.94	0.88	0.86	0.94	0.89	0.85	0.81	0.76	0.87	1.00	
ZOLA	0.91	0.82	0.88	0.90	0.94	0.92	0.86	0.95	0.92	0.93	0.95	0.94	0.92	0.84	0.90	0.95	0.90	0.92	0.92	0.91	0.88	0.79	0.76	0.94	0.94	1.00

Min.	0.55
Max.	0.99
Av.	0.91

Note: All significant at or above $p < 0.05$. $df = 12$; (significant at $p < 0.01$ above $r = 0.66$; significant at $p < 0.001$ above $r = 0.78$)

Table 24 Multiple regression of factors associated with rate of occurrence of NCU in participants' manuscripts (NCUWRST)

Variables Entered/Removed		Variables Entered	Variables Removed	Method
Model	1	SOCENGH, ACWRTEACH, HIGHVOC, PHDSC, PRESCH, MASMAJENG, MASINTH, PHDTHAI&OS, NFCOMMENG, UNIMEANHRS, PHDOS, 1STEXP, PGRADBUS, HIGHMEANHRS		Enter

Model Summary

Model	R	R Square	Adjusted R Square	Std Error of the Estimate
1	.907 ^a	.823	.598	.0219986%

Descriptive Statistics

NCUWRST Valid N (listwise)	N	Minimum	Maximum	Mean	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
	26	.0258	.1472	.084500	.153	.456	.658	.887

ANOVA^b

Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression 247.688	14	17.692	3.656	.018 ^a
	Residual 53.2333	11	4.839		
	Total 300.921	25			

a. Predictors: (Constant), SOCENGH, ACWRTEACH, HIGHVOC, PHDSC, PRESCH, MASMAJENG, MASINTH, PHDTHAI&OS, NFCOMMENG, UNIMEANHRS, PHDOS, 1STEXP, PGRADBUS, HIGHMEANHRS b. Dependent Variable: NCUWRST

Table 24 (cont.) Multiple regression of factors associated with rate of occurrence of NCU in participants manuscripts (NCUWRST)

Coefficients ^a											
Model	Unstandardized Coefficients			Standardized Coefficients		t		Sig.		Collinearity Statistics	
	B	Std. Error	Beta			t	Sig.	Tolerance	VIF		
1 (Constant)	.753	4.383			.172	.867					
PRESCH	.026	1.570	.304		1.673	.123	.486		2.057		
1STEXP	2.626	.262	.219		1.084	.302	.395		2.529		
HIGHMEAN HRS	.004	.003	.348		1.562	.147	.323		3.093		
UNIMEANHRS	-.002	.001	-.493		-2.407	.035	.384		2.606		
HIGHVOC	-6.538	2.097	-.512		-3.118	.010	.596		1.677		
MASMAJENG	-.054	1.316	-.007		-.041	.968	.605		1.653		
MASINTHAI	4.003	1.194	.522		3.352	.006	.663		1.507		
PHDOS	.223	1.215	.033		.184	.858	.507		1.971		
PHDTHAI&OS	-3.828	1.457	-.443		-2.627	.024	.564		1.772		
PHDSC	-.875	1.468	-.127		-.596	.563	.354		2.824		
PGRADBUS	1.909	1.994	.202		.958	.359	.360		2.779		
NFCOMMENG	2.648	1.201	.385		2.204	.050	.528		1.893		
ACWRTEACH	1.798	1.234	.264		1.457	.173	.489		2.047		
SOCENGH	-.400	.512	-.150		-.780	.452	.433		2.312		

a. Dependent Variable: NCUWRST

Table 25 Multiple regression of factors associated with rate of occurrence of NCUs in participants' speech (NCUSPST)

Variables Entered/Removed		Variables Entered	Variables Removed	Method
Model	1	TOTMEANCLHRS, MASMAJENG&L1, PHDINTHAI, PGRADBUS, EXPPER, NSTOTH, MASMAJENG, HSENGMAJ, PHDINL1&ENG, COMTEACH, BACENGMAJ, PHDINENG, BACHELEC, HIGHPRIV		Enter

Model Summary

Model	R	R Square	Adjusted R Square	Std Error of the Estimate
1	.936 ^a	.876	.717	.033898%

Descriptive Statistics

NCUWRST Valid N (listwise)	N	Minimum		Maximum		Mean		Skewness		Kurtosis	
		Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error	Statistic	Std. Error
	26	.046	.338	.164	.589	.456	1.030	.887			

ANOVA^b

Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression Residual Total	889.139 126.400 1015.539	14 11 25	63.510 11.491	5.527 .004 ^a

a. Predictors: (Constant), TOTMEANCLHRS, MASMAJENG&L1, PHDINTHAI, PGRADBUS, EXPPER, NSTOTH, MASMAJENG, HSENGMAJ, PHDINL1&ENG, COMTEACH, BACENGMAJ, PHDINENG, BACHELEC, HIGHPRIV b Dependent Variable: NCUSPST

Table 25 (cont.) Multiple regression of factors associated with rate of occurrence of NCUs in participants' speech (NCUSPST)

Coefficients ^a											
Model	Unstandardized Coefficients			Standardized Coefficients		t		Sig.		Collinearity Statistics	
	B	Std. Error		Beta		t	Sig.	Tolerance	VIF		
1 (Constant)	18.814	4.5303			4.153	.002					
EXPPER	-.059	.148		-.059	-.398	.698		.511	1.956		
HIGHPRIV	-.865	6.764		-.037	-.128	.901		.136	7.351		
HSENGMAJ	-8.326	3.025		-.481	-2.753	.019		.371	2.695		
BACHENGMAJ	.630	3.287		.040	.192	.851		.263	3.797		
BACHELEC	5.247	2.731		.399	1.922	.081		.262	3.818		
PGRADBUS	11.755	2.712		.679	4.355	.001		.462	2.166		
MASMAJENG	-.920	2.640		-.062	-.349	.734		.357	2.800		
MASMAJENG&L1	3.389	3.642		.173	.931	.372		.327	3.063		
PHDINTHAI	6.651	2.465		.448	2.699	.021		.410	2.440		
PHDINL1&ENG	-2.429	3.514		-.124	-.691	.504		.351	2.862		
PHDINENG	-1.214	2.251		-.095	-.539	.600		.368	2.715		
NSTOTH	2.352	.828		.394	2.840	.016		.588	1.701		
COMTEACH	-3.622	2.249		.385	-1.611	.136		.492	2.031		
TOTMEANCLHRS	.001	.001		-.233	-.862	.407		.155	6.447		

a. Dependent Variable: NCUSPST

Table 26 Multiple regression of factors associated with participants' score in ordering problem areas (PROBCOR)

Variables Entered/Removed		Variables Entered	Variables Removed	Method
Model	1	NFWRIT,PHDINL1, MASOS&HOME, HIGHPRIV, NSTOTH, NFCOMMENG, HSENGMAJ, PRIMGOV, MASINTHAI, HIGHMEANHRS, 1STEXP, PHDOS		Enter

Model Summary

Model	R	R Square	Adjusted R Square	Std Error of the Estimate
1	.841 ^a	.708	.438	.286197

Descriptive Statistics

N	Minimum		Maximum		Mean		Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error	Statistic	Std. Error
NCUWRST	26	-.638	.714	.115	-.186	.456	-.890	.887		
Valid N (listwise)	26									

ANOVA^b

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	2.577	12	.215	2.622	.049 ^a
	Residual	1.065	13	.082		
	Total	3.642	25			

Table 26 (cont.) Multiple regression of factors associated with participants' score in ordering problem areas (PROBCOR)

Coefficients ^a											
Model	Unstandardized Coefficients			Standardized Coefficients		t		Sig.		Collinearity Statistics	
	B	Std. Error	Beta			t	Sig.	Tolerance	VIF		
1 (Constant)	-.543	.537				-1.011	.331				
1STEXP	.089	.036	.620			2.488	.027	.362	2.760		
PRIMGOV	-.242	.178	-.308			-1.363	.196	.440	2.274		
HIGHPRIV	.301	.288	.215			1.048	.314	.536	1.866		
HSENGMAJ	-.070	.204	-.067			-.342	.738	.583	1.716		
HIGHMEANHRS	.000	.000	-.417			-1.759	.102	.400	2.503		
MASINTHAI	.216	.175	.255			1.229	.241	.521	1.921		
MASOS&HOME	.826	.302	.588			2.736	.017	.487	2.052		
NSTOTH	-.111	.077	-.310			-1.430	.176	.479	2.087		
PHDOS	.041	.191	.054			.214	.834	.347	2.879		
PHDINL1	-.017	.242	-.017			-.072	.944	.413	2.421		
NFCOMMENG	.352	.162	.465			2.182	.048	.495	2.021		
NFWRIT	-.132	.177	-.157			-.745	.470	.509	1.964		

a. Dependent Variable: PROBCOR

Table 27a. Summary of variables appearing in the three multiple regression models and correlation coefficients (*r*) with dependent variables

Variable		Models in which variables are terms and direction of effect				Meta-linguistic score	
Name	Description	Type	Writing <i>r</i>	Direction of effect	Speaking <i>r</i>	Direction of effect	Direction of effect
PRESCH	Pre-school experience of English including kindergarten	Dummy Yes=1, No=0	0.27	-ve			
ISTEXP	Age at first formal English class	Quantified (age in years)	-0.18	-ve		*0.41	-ve
EXPPER	Period between first exposure to English and date of editing article	Quantified (years)			*-0.40	+ve	
PRIMGOV	Studied for all or part of primary school at a government school	Dummy I=yes, 0=no					0.17
HIGHPRIV	Studied for all or part of high school at a private school	Dummy I=yes, 0=no			-0.30	+ve	-0.28
HIGHVOC	Attending vocational college instead of upper high school	Dummy Yes=1, No=0	-0.20	+ve			
HSENGMAJ	Majored in English in upper high school	Dummy I=yes, 0=no			-0.33	+ve	-0.23
HIGHMEANHRS	Estimated total hours in high school English classes	Quantified (hours)	0.26	-ve			**0.52
BACENGMAJ	Majored in English at undergraduate level	Dummy I=yes, 0=no			*-0.43	+ve	
BACHELEC	Took elective English courses as an undergraduate	Dummy I=yes, 0=no			-0.31	+ve	
PGRADBUS	Business major at master's and PHD level	Dummy Yes=1, No=0	0.35	-ve	0.38	-ve	

Note: *Significant at $p < 0.05$; ** significant at $p < 0.01$

Table 27a (cont.) Summary of variables appearing in the three multiple regression models and correlation coefficients (*r*) with dependent variables

Name	Description	Type	Writing r	Direction of effect	Speaking r	Direction of effect	Meta- linguistic score r	Direction of effect	Note: *Significa nt at p<0.05
MASMAJENG	English used as only medium of instruction at master's level	Dummy Yes=1, No=0	-0.22	+ve	*-0.41	+ve			
MASMAJENG&LI	Both English and Thai used as medium of instruction at master's level	Dummy l=yes, 0=no			*0.47	-ve			
MASINTHAI	Studied for a master's degree in Thailand	Dummy Yes=1, No=0	0.24	-ve				-0.27	-ve
MASOS&HOME	Studied both in Thailand and overseas at master's level	Dummy l=yes, 0=no						0.31	+ve
PHDOS	Studied for a PHD overseas	Dummy Yes=1, No=0	0.11	-ve				-0.27	+ve
PHDTHAI&OS	Studied partly in Thailand and partly overseas for a PHD	Dummy Yes=1, No=0	-0.31	+ve					
PHDINTHAI	Studied all in Thailand at PhD level	Dummy l=yes, 0=no			0.38	-ve			
PHDINENG	English used as only medium studying at PhD level	Dummy l=yes, 0=no			-0.34	+ve			
PHDINLI&ENG	Both English and Thai used as medium studying at PhD level	Dummy l=yes, 0=no			*0.42	-ve			
PHDINLI	Thai used as only medium of studying at PhD level							0.33	+ve

Table 27a (cont.) Summary of variables appearing in the three multiple regression models and correlation coefficients (*r*) with dependent variables

Name	Description	Type	Models in which variables are terms and direction of effect				Direction of effect
			Writing <i>r</i>	Direction of effect	Speaking <i>r</i>	Direction of effect	
PHDSCI	Science major at PHD level	Dummy Yes=1, No=0	-0.35	+ve			
UNIMEANHRS	Estimated total hours in university English classes	Quantified (hours)	-0.14	+ve			
NSTOTH	Experience of being taught by English native speaking teachers in subjects other than English	Scalar (scale in years)			0.26	-ve	0.13
COMTEACH	Experience of communicative teaching methods in English classes	Dummy 1=yes, 0=no			*-0.43	+ve	
ACWRTEACH	Attended classes for academic writing skills	Dummy Yes=1, No=0	-0.13	+ve			
NFCOMMENG	Attended non-formal communicative English classes	Dummy Yes=1, No=0	0.27	-ve			0.35
NFWRIT	Took non-formal classes where writing in English was taught	Dummy 1=yes, 0=no					0.26
TOTMEANCLHRS	Estimated total hours in English classes of all kinds	Quantified (hours)			*-0.40	+ve	
SOCENGH	Social/working experience of using English in Thailand	Scalar Scale in years)	-0.20	+ve			

Note: *Significant at $p < 0.05$

Table 27b Individually significant independent variables and the regression models within which they appear

	NCUWRST			NCUSPST			PROBCOR		
	Beta	t	Sig. Effect	Beta	t	Sig. Effect	Beta	t	Sig. Effect
1STEXP							.681	2.927	.012 +ve
UNIMEANHRS	-.493	-2.407	.035 +ve						
HIGHVOC									
HSENGMAJ				-.457	-3.109	.010 +ve			
MASINTHAI	.522	3.352	.006 -ve						
MASOS&HOME							.552	2.749	.017 +ve
PHDTHAI&OS	-.443	-2.627	.024 +ve						
PHDINTHAI				.415	2.829	.016 -ve			
PGRADBUS				.767	5.373	.000 -ve			
NFCOMMENG	.385	2.204	.050 -ve				.594	2.982	.011 +ve
NSTOTH				.517	3.710	.003 -ve			

Note: Effect refers to the apparent effect on level of English as reflected by each dependent variable

Table 31 Regression model of learner type associations with rate of occurrence of NCUs in participants' speech (NCUSPST)

Variables Entered/Removed			
Model	Variables Entered	Variables Removed	Method
1	Selfpropelled, Reluctant, Realist, Active, Reactive, Experiential, Dedicated, Redemptive, Adapter, Struggler ^a		Enter

Model Summary

Model	R	R Square	Adjusted R Square	Std Error of the Estimate
1	.870 ^a	.757	.595	4.054753823
				519076E0%

Descriptive Statistics

NCUWRST Valid N (listwise)	N	Minimum	Maximum	Mean	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
	26	.046	.338	.164	.589	.456	1.030	.887

ANOVA^b

Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	768.923	10	76.892	.004 ^a
	Residual	246.615	15	16.441	
	Total	1015.539	25		

a. Predictors: (Constant), Self-propelled, Reluctant, Realist, Active, Reactive, Experiential, Dedicated, Redemptive, Adapter, Struggler

b. Dependent Variable: NCUSPST

Table 31 (cont.) Regression model of learner type associations with rate of occurrence of NCUs in participants' speech (NCUSPST)

Coefficients ^a						
Model	Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance
1 (Constant)	19.652	3.601		5.458	.000	
Active	-10.254	3.860	-.437	-2.656	.018	.598
Adapter	7.087	4.335	.302	1.635	.123	.474
Struggler	-.489	4.782	-.028	-.102	.920	.212
Dedicated	-6.848	3.979	-.432	-1.721	.106	.257
Experiential	.998	2.094	.074	.477	.640	.677
Reactive	-3.989	3.969	-.283	-1.005	.331	.204
Realist	2.255	2.615	.142	.862	.402	.595
Redemptive	-5.575	3.436	-.322	-1.622	.322	.411
Reluctant	4.952	3.887	.253	1.274	.253	.410
Selfpropelled	-2.922	2.595	-.216	-1.126	.216	.441
						VIF
						1.673
						2.110
						4.708
						3.889
						1.477
						4.902
						1.679
						2.431
						2.439
						2.268

a. Dependent Variable: NCUSPST

Appendix 2

Summaries of interviews with the participants in the study

These summaries have been adapted from the summaries produced as part of the thematic and content analysis process. The pseudonyms randomly allotted to the participants are used throughout and some details (e.g. the names of universities other than PSU and participants' faculty affiliations) have been removed in order to maintain the participants' anonymity.

ANN

ANN was born in 1968 and brought up in Satun where she studied prathom 1-4 before moving to Bangkok where she studied in prathom 5 and 6 and mathayom 1 to 3. She then moved to Hatyai and studied in a science stream at mathayom 4-6 before taking a Bachelor's degree at PSU in Hatyai. After working for a year she took a Master's degree at a university in Bangkok then worked in PSU as a lecturer for two years before winning a government scholarship to study for a doctorate in the UK, then returning to work at PSU where she is an Assistant Professor.

She moved from Satun when she was 8 and joined a school in Bangkok, where many of the children in her new class had been learning English since the age of 4. Before leaving Satun, although she had no experience of hearing or seeing English, she had taken private one-on-one classes with a Thai teacher in which she had learned the alphabet and simple vocabulary. Nevertheless, in the first year when she started learning English formally, because the teacher spoke mostly English only occasionally translating words, she could not understand the teacher's instructions in English and she did not enjoy the lessons. However, the teacher gave her extra lessons to help her and by the end of the first year she had caught up with the other children in the class, and she enjoyed English more in prathom 6 once she had caught up with the other children.

The prathom school in Bangkok was private and emphasized the learning of English. They learned for 3 hours a week in classes of about 35 children. The teacher was Thai and the lessons were mostly based on a lecturing style. The main area taught was grammar but they also had separate lessons for reading and listening in a language laboratory and the children had limited opportunities to speak by responding in English to questions asked by the teacher

She studied mathayom 1-3 in a private school in Bangkok commencing in 1980, where the English lessons were at a higher level. The teachers in mathayom 1 and 2 were Thai and again spoke more English than Thai, and in mathayom 3 they had lessons from an Australian teacher who did not speak Thai at all, which was her first experience of being taught by a non-Thai teacher or hearing naturally spoken English (and would be her only such experience in her primary and secondary

education). The classes were still mostly teacher-fronted but the children had some chance to speak although this was mostly to the teacher, and many students were reluctant to speak English. They learned from a textbook but the teachers also give out their own handouts. Although they didn't learn every day, on some days they had double periods of English so learned for about 4-5 hours a week.

At the end of mathayom 3, she went to live in Hatyai and attended a government school for mathayom 4-6 studying in a science stream. The English lessons emphasized learning grammar and were mainly aimed at getting students to pass the university entrance examinations. There was little listening and the main emphasis was on grammar and reading, with little chance to speak. All the teachers were Thai and she learned English for only 3 hours a week. At the end of mathayom she could only speak in words, not full sentences although she might have been able to understand and give directions to a foreigner, but she could only have read a newspaper if the content were simple and then only with the aid of a dictionary.

From there, she studied at PSU Hatyai for a Bachelor's degree. She took three compulsory English courses in the first two years and one elective course, and a further elective conversation course in the third year. The compulsory courses were all based on a teacher-fronted lecturing style and emphasized grammar, and the classes did not promote student communication. The compulsory courses occupied 3 hours a week, and the elective courses, which she took because she thought they would help her with her work in the future, occupied 2 hours a week. In her faculty, they used both English textbooks and journal articles on her course and she also attended 6 hours of lectures from an English speaking guest lecturer which she did not understand at all. She also found the journal articles very difficult to deal with and had to use a dictionary to understand them. At the end of her Bachelor's degree, she didn't think that her English had improved much beyond the level it was at the end of mathayom.

After that she worked for a year in a company, where her only exposure to English was in documents, and she had no need to speak English. She then took a Master's degree at a university in Bangkok on a Thai-language-based course. Although she used both English textbooks and journal articles to prepare for seminar

classes and for her research, there were no English classes and she wrote her thesis in Thai although with an English abstract, and did not publish the research. At the end of her Master's degree she had no personal experience of writing in an English academic style.

She then worked at PSU for 2 years as a lecturer before she was given a government scholarship, which covered study in the UK, and was accepted on a PhD program. During the time that she was working at PSU, she had some experience of using English in social and academic situations with a German exchange student studying in the faculty for a year and there was also an Australian visiting professor who helped her by correcting her English. Before going to the UK, she had to take a TOEFL and was required to achieve a score of 550. She studied in a Thai-language-based English school in Hatyai for more than 100 hours over 2-3 months to prepare. The classes were based on taking practice tests to familiarize students with the techniques needed for the test. To prepare for her TOEFL she also tried to learn more vocabulary on her own, bought a book to help her to practice grammar and also spent a lot of time practicing listening, which at that time she found difficult. However she was only able to achieve a score of 520 so she was required to take an English course at the university in the UK before starting to study in her PhD program. The English course lasted a month and they learned for around 6 hours a day. All the teachers were native English speakers and the classes covered more writing than she had hitherto been used to, but there was also a lot of opportunity to speak in group work and the course covered both academic and English for everyday needs.

To begin with in the UK she found it hard to make herself understood because of her accent and she lost confidence in her English. On the English course she took, the students were divided into three classes based on existing ability levels and she was placed in the second level but some of the other students had better English than her. However, the classes helped her because she was forced to speak English with other students, where their only common language was English. She lived on campus in an international dorm and although there were other Thai students she spoke mostly English in social situations. She said that it took her a term to begin to feel comfortable with English in academic situations as well as outside of the classroom

and she was only really able to speak English for the first time after she went to the UK to study.

Although her degree was research based she elected to do some coursework to help her with her research. Once she started studying, she found the material in the courses quite difficult and had to read textbooks to be able to understand it. In the second term she had to write her thesis proposal which was the first time that she had had to write an extended piece of academic English. Her advisor and a post-doc helped her with the English content of the proposal and they also helped her with the writing of the two papers that she had to write before her thesis. For her thesis she read other people's work and tried to adapt it to her own research

She also tried to adapt journal articles when writing her own papers but found it hard to paraphrase sentences. All her writing was directly into English and she never wrote first in Thai, a practice that she still continues, and the experience of being in the UK resulted in a big increase in the level of her English. She studied there for 3 years and 3 months before graduating, then came back and resumed her position at PSU in Hatyai.

The article I edited took altogether 4 years to be published. The research was initially presented at a conference then an article was submitted to the journal of the university who had hosted the conference for publication. The journal however did nothing with the article for a year and she had to remind them about the paper. She was then told that it was too long and it had to be resubmitted after revision. The article was then peer-reviewed and the peer-reviewers made some suggestions without any comments being made about the English. However, the editorial board of the journal asked for the English to be improved and at that stage it was sent to the RDO for editing. After the editing, she accepted almost all the changes recommended barring a small number which affected the meaning and were based on misunderstandings. The article was then resubmitted and was accepted without further comment by the journal.

Altogether, she has published or co-authored more than 20 articles in English. She published two papers in Thai with MSc students before going to the UK but she finds it easier to write articles in English than in Thai because she is used to doing so.

She generally publishes in international journals even though it is often easier to publish in a Thai journal. She is confident about writing in English even though she cannot always write in perfect English. However, she doesn't always have her work proof-read before submission to international journals but sometimes seeks her co-authors' help or help from visiting professors or more widely published members of her faculty. Her main reason for writing in English is because of the demands of the university but she also recognizes the importance of international exposure for her work. She thinks it is not really fair that she must publish in English but recognizes that she has no choice if she wants international exposure for her work. She commented that she finds that she often makes mistakes in the use of articles although she did not rate this as the most difficult area of English and she also said that she finds writing cohesive texts difficult.

Her spoken English was quite circumspect and in the interview she produced less than a third of the words spoken with a high proportion of yes/no or short answers. She also had a tendency to become confused in long utterances and to have to search for words. Nevertheless her comprehension was very good and there were very few instances of seeking clarification or of misunderstanding questions.

BEN

BEN was born in Surat Thani and attended prathom 1-6 there. He attended a university demonstration school in Pattani between mathayom 1-6 then took a Bachelor's degree in PSU, Hatyai campus. He then took a lecturing position at a technical college in Songkhla before returning to PSU to take a Master's degree and later going to America for a PhD. After that he returned to Thailand and is now an Associate Professor at a university in Songkhla.

He began learning English in prathom 5 in 1981. His teachers were Thai and were not trained as English teachers and could not speak English well. The lessons concentrated on getting the students to memorize vocabulary. At mathayom, in the demonstration school, the teachers were properly trained but they still spoke mainly Thai and concentrated on reading and grammar based on textbooks. He also took an elective course in English writing at mathayom5 but got an F grade. At PSU, Hatyai he took only two foundation English courses and his English at that time was poor

and he was placed in the lowest ability group. He described the whole of his formal education in English to that point as a “bad experience”.

His English improved significantly when he returned to PSU to study for a Master’s degree. The course was taught in English and he read English textbooks which he understood with the aid of a dictionary. He said that he had no problem in following grammar and could understand the vocabulary relevant to his field. He also read English newspapers, again using a dictionary and complemented his understanding by reading the same stories in Thai newspapers. His listening skill also improved and he successfully passed the PSU-GET before graduating

After completing his Master’s degree, he was accepted to study in the USA but the university required a TOEFL score of 550. He registered for a TOEFL preparation course at PSU but took a TOEFL test to check his level and achieved a score of 510 without attending the classes and the university accepted him at that stage but required that he attend a „Step-up English“ program for 3 months. He found this course very useful. He described the quality of the teachers and the communicative methodology they used as well as the relaxed atmosphere in the classes and generally between the students and the teachers. He said that such an atmosphere is difficult or impossible to achieve between teachers and students in Thailand.

He said that reading had been the biggest factor in achieving his current level of English. He does not enjoy memorization as a learning technique and found learning English different from learning other subjects which he approached by following and expanding on examples in textbooks. He did not feel that either the mathayom 5 writing course or the writing component of the Step-up English program were particularly useful in teaching him to write academic English with the latter course concentrating on aspects of formal writing such as grant applications rather than on the language needed to write articles.

Most of the roughly 10 papers he has written have been delivered as conference papers. He often speaks at international conferences in English and does not find this difficult. He uses PowerPoint presentations and prepares a script of what he will say. He approaches writing by working from a Thai version, and the most

recent article I checked was prepared by an undergraduate first, with K then translating it using Google Translate initially to translate the vocabulary he needed. He has published only one article in an English language journal. This was an account of the research he conducted in the USA for his PhD and was prepared with the assistance of his advisor as well as with some input from teachers in the Step-up English program at the university in the USA. However, the peer-reviewers required revision of the English which was achieved by me reviewing the article which was then accepted and published in a high impact factor journal. He regarded publishing articles in English as very difficult but felt that the need to write in English for publication was fair and accepted that to get his work read internationally he must write in English. His main reason for publication however is for career progression. He said that earlier he wanted to publish more to share his work with others in the field but family responsibilities have forced a more career-oriented attitude.

His spoken English is clear and generally quite accurate although he seemed to find tense control a struggle. He had some comprehension difficulties although these were always able to be repaired either by asking for repetition/clarification or by subsequent revision. He used vocabulary accurately but was rather conservative in his speech, often not going beyond short answers and not expanding answers beyond what was strictly necessary to answer the question. However his speech produced a slightly lower NCU rate than that in his written work, one of only two participants for whom this was the case.

CHAZ

CHAZ was born in a small town in Nakhon Sri Thammarat province where he attended prathom 1-6, beginning in 1988. He gained entrance to a Ministry of Science sponsored maths and science program and studied mathayom in a government school in Surat Thani. From there he went on to university in Bangkok. After graduating he worked in a hospital for 2 years and as a government officer for 3 years before winning a scholarship to study in China for a PhD. After graduating he worked for a year in China then returned to live in Thailand and now holds a lecturing position in PSU. In addition to Thai and English he also speaks Chinese and has studied Russian.

He began learning English in prathom 5. He described his early experience of learning English as “6 or 7 wasted years”. His teachers in prathom were not able to speak English nor were the prathom or mathayom teachers trained as English teachers. Although things were somewhat better in mathayom, all the classes in prathom and mathayom were basically teacher-fronted, the teachers speaking mainly Thai with a concentration on memorization and written exercises. There was no attempt made to teach or practice spoken English and it was not until he was taken by one of his teachers to watch the movie “Titanic” in mathayom 3 that he changed his mind about learning English. He described the early mathayom years as a springboard and says that he only began to understand English in mathayom 4 or 5. However he highlighted the fact that English was viewed by the students as something needed for university entrance and that in order to achieve the score necessary the students themselves had to rely on their own efforts. Nevertheless by the time he was in mathayom 6 he was able to read the first Harry Potter novel in English, although his summation of the learning of English at school is that it was “a bad experience”.

At university in Bangkok, he was, for the first time, taught English by native speakers who were mostly English as the aim was to teach “standard English”. Although he is somewhat critical of the concentration on British English pronunciation, he was generally impressed by the syllabus structure and the attempts made to get the students to speak English. However he accepts that at the time the main aim of the students, who he described as “like a baby” was to get the score needed to pass courses, and his overall view was that he did not realize how useful English would be to him in the future.

In China, he needed English both to study and also as a common language with other students who came from many different countries. He learnt Chinese successfully in 6 months although this was largely used outside of the university including helping other students, and he became the “president” of the Thai students at the university. Overall he reckoned that 80 % of his English came from real situations rather than from formal learning.

He has published about 25 articles, all but the first (which was published in Thai when he was still an undergraduate) being written in English. He likes to work

with other researchers and highlights the importance of teamwork with teams as small as two and as large as five or six people contributing to the writing of articles. He writes directly in English and generally the work is divided between co-authors and then checked and revised by them. He likes to begin by preparing the tables and figures then writes the text of the article based on them. He says that writing the summary is the most difficult part of article writing and this is normally done collectively rather than individually. He described academic writing as a “sign language” and not like writing English. He learned the system by reading and writing articles and says that his experience in China was helpful. However he sees English as a tool and thinks that students need to understand that it is a means of communication rather than as something to fear.

He is happy with the need to publish in English and feels that the use of major international languages aids the spread of knowledge which he thinks is key to human progress. His main reason for publishing articles is to share his knowledge and is not related to his career progression. He has experienced what he describes as “the Asian barrier” where an article might be rejected very quickly by a journal purely because it is being submitted by an Asian writer. Part of his reason for having his work edited by a native speaker is to be able to credit the editor in the acknowledgements as he thinks this encourages journals to accept papers. He rated publishing in English as not too difficult overall.

His summation of his English was that although he may not be “good in English” he is a good article writer. His spoken English is fluent but inaccurate. He is able to call on a good range of vocabulary and idiomatic expressions most of which he used correctly. He was often able to talk quite extendedly about aspects of his work and was able frequently to extend his answers beyond the immediate question asked.

DEE

DEE was born in Songkhla province in 1980 and attended prathom 1-3 near her home town. She then moved to Hatyai where she attended prathom 4-6 in a private school. She studied mathayom 1-3 in a private school in Hatyai then moved to a vocational college in Songkhla where she studied for 3 years. She then studied for a Bachelor’s degree in Ayutthaya then immediately went on to study for a Master’s

degree in Bangkok. She worked for 3 years as a lecturer at PSU, Surat Thani campus before studying for a PhD in Malaysia.

She thinks that it is difficult for young students in Thailand to learn English because it is not their mother tongue but feels that teachers are better trained these days than they were when she began learning. She started learning English in prathom 5 at age 10. She had had a very limited experience of English before starting to learn up to then but not in formal English classes, just exposure to the alphabet and simple words. The lessons in prathom 5 and 6 consisted of learning the alphabet and 'easy' grammar with a Thai teacher, although the teaching of grammar in prathom was not intensive. She also learned to read in prathom. The teacher 'lectured' about English although the students sometimes repeated words that the teacher spoke. They learned English for 2-3 hours a week in classes of around 50 students so it was difficult to indicate if they did not understand what was being taught. They learned from a book as well as in a language laboratory for listening to English spoken by native speakers consisting of sentences, to which students had to respond by speaking, as well as doing gap-fill exercises.

At mathayom, the teachers taught grammar more intensively and the school put more emphasis on English. She learned English for between 3 and 5 hours a week and though most of the teachers were Thai, there was also a sister from an English speaking country who taught them for an hour a week and spoke to them using English. The Thai teachers were strict and put pressure on the students to learn. The foreign teacher on the other hand was more understanding and tolerant of students' errors. The Thai teachers concentrated on teaching grammar which she did not enjoy and found difficult while the foreign teacher concentrated on conversation which she enjoyed and she learned more from the foreign teacher. At mathayom, however, she regularly failed English.

She left school after mathayom 3 in 1995 and moved to study in Songkhla at vocational school level. The English classes she attended at that time were based on conversation, rather than grammar and she learned with both Thai and native speaking teachers. She learned English for 1 or 2 hours per week using a book which was not published in Thailand and was totally in English, as well as a language laboratory

with gap-fill exercises. The classes were of 30-35 people and she learned throughout the 3 years with one course each semester. However, although she preferred the English lessons at vocational college, because they mainly covered conversation which she preferred, rather than grammar, her English was poor at the end of vocational college. She could understand and speak some English and she could also read but not write well. She continued to find grammar very difficult and did not know how to write English sentences. She emphasized her view that English is difficult to learn for Thai students.

She then went on to study for a Bachelor's degree in Ayuttaya where there was one English course every year for all the four years she learned there, but not every semester although in the final year there were two courses, speaking and reading. The teachers lectured rather than using communicative methods to teach. The classes occupied 1 or 2 hours every week and were based on American or English textbooks in classes of around 50, made up of students from different majors. At the end of her Bachelors' degree her speaking had improved and she had come to appreciate that English was necessary in order to get a job. Therefore she took a class in an English language school in Ayuttaya which was taught by a native speaker and concentrated on conversation in different situations. She had to take a TOEIC test as part of her course and sought help from the class teacher but the class was not primarily a TOIEC preparation class. The teaching was activity based and included role plays and the students giving presentations in English. It was based on a book with listenings from a tape. She studied one 30-hour course which helped her to be more confident about speaking English and not to worry about making errors in her speech. However at that stage her reading and writing were both still poor.

After her Bachelor's degree she went straight on to study in Bangkok at Masters' degree level. The program was in Thai and there were no English classes but she took one English class in the final year to help her to pass a post-graduate English test which was a requirement of graduating. While studying in Bangkok some teachers used English handouts even though they taught in Thai and one teacher even set some test questions in English which students could answer in Thai or English but gained more points for answering in English, to motivate the students to learn

English. She did not publish her Master's degree research as it was not required in order to graduate but she published one article in Thai while working at PSU Surat Thani before she went on to study in Malaysia.

She then worked as a lecturer at PSU Surat Thani for 3 years but did not use English materials or any English at all when teaching. The only writing class she took was before she went to study in Malaysia. The PhD program she enrolled in there was an international program and she was told that she would need to have English writing skills, so she took a one-on-one course with a Thai teacher. The course focused on grammar for writing but the emphasis was on sentence level grammar not on academic style. She studied every day for a total of 50 hours over 1-2 months. The course helped her but as it did cover academic writing it was of limited use when later writing her thesis.

At the university in Malaysia, everything was in English and she also took a compulsory English course in the first year run by the language and linguistics faculty. The course was 3 days a week, 2 hours per day for an entire year. She also had to study a course in the Malay language in the final year. Her program was research based but her supervisor assigned her to attend some Bachelor's and Master's degree lectures which were all in English and she found it very difficult to understand the accents of the lecturers particularly these who were Indian-Malaysians. She had difficulty understanding English journal articles even with the aid of a dictionary and had to ask friends to explain them to her. She said that she found American writers easier to understand than British.

She had to write her thesis in English, which she found very difficult. Her supervisor suggested that she write directly in English and not write in Thai first but she had to get help from Malaysian Chinese friends, who reviewed her writing to check if it was understandable before she submitted it to her supervisor. She also used a professional editing service to review the final version of her thesis and to rewrite some sentences in an academic style. She tried to adapt sentences from English journal articles which she had read into her own writing but still had to rely heavily on friends to review the work she produced, which she then revised before getting it professionally edited. Her supervisor only dealt with technical issues and gave no help

on English even though she noticed that DEE had problems with English grammar and her supervisor could often not understand what she wrote. Her PhD supervisor told her that she could understand when DEE explained things to her but when DEE wrote she could not understand it. DEE thinks this is because she thinks in Thai before writing then tries to translate when writing the English sentence.

She published one article from her PhD research and presented at three conferences. The article she published was adapted from material in her thesis and written in English but she also got help with the English content from a friend before sending it to be edited professionally and then sending it to her supervisor before submission to the journal. The article was written while she was still in Malaysia and was published with her supervisor as co-author. The university was not strict about the journal in which it was published and the eventual journal selected was in India. It was peer reviewed and the reviewers commented only on the article's content not on the English language content. It is the only article she has published in English although she has also written three proceedings papers.

In her present position at PSU Surat Thani, she now uses English material for one subject and encourages the students to practice English. The university requires her to publish but will accept publication in Thai in TCI-rated journals. She thinks that it is difficult in the social sciences to publish in ISI/Scopus journals and that it is easier to publish in Thai in TCI journals. She finds writing in an academic style in English very difficult and thinks that it would be too difficult for her to write articles in English and that she would spend too long doing so. Additionally, her subject matter is related to Thai issues and the literature she reviews mostly consists of Thai papers. She currently has two papers in the course of writing/publication in Thai and thinks that she will continue to publish in Thai even though she accepts that it would be better for her career to publish in English. She said that she has to provide abstracts in English for Thai papers which she writes then getting them reviewed by a colleague. However her colleague has suggested it would be easier for her to translate the Thai abstract than to try to understand DEE's writing in English!

For the article I edited, she accepted most of the suggested changes except where they affected the use of a technical term. The article was submitted to an

American journal but was rejected and was submitted to another journal who never responded even after being reminded 6 months later. She has not resubmitted the article and it has not been published. The initial rejection was because the journal said it was not within their scope but she thinks that may have been a 'polite reason' and the article was not peer reviewed.

DEE said that she is now confident about speaking English and is not worried about making mistakes. Her spoken English is however very inaccurate and any extended utterances she produced were highly ungrammatical, although her comprehension was quite adequate.

EVE

EVE was born in Nakhon Sri Thammarat and learned English from age 8 at both her prathom school and with private teachers including a native speaker. She opted for an arts and English program from mathayom 4 to 6 and later learned English throughout her undergraduate studies at university, including taking elective courses, where the teachers were native speakers and the lessons were conducted in English. She studied in a university in Bangkok for a Master's degree and later studied in China for a PhD in an English language program.

Although she attended anubahn in Nakhon Sri Thammarat, her father was a government officer and he was transferred away from Nakhorn Sri Thammarat just as she started prathom. Therefore although she was due to start learning English at age 5 in prathom 1, because the school she actually attended did not begin English in prathom 1 she only started learning English in prathom 4 in 1989 when she returned to Nakhorn Sri Thammarat aged 8, at the same school which she had been due to attend before her father's transfer. The school was small and the class size was around 20 students, per class. However, since the other pupils in the class had started learning English at prathom 1, she was initially upset that they were all considerably ahead of her in their English skills. So her mother arranged private classes with a Thai teacher from another school for 6 months and then with a native speaking teacher with whom she learned for 1 year. She had to start by learning the alphabet then moved on to

reading, and the native speaking teacher started by teaching her simple conversation which she did not understand at all at first. But her English improved quickly and she also practiced by reading and writing by herself so that by the time she moved up to prathom 5 she was probably better in those skills than other children in the same class. The teaching in the school was teacher-centered and because the other children had no opportunity to speak, her experience of learning with the native speaking teacher meant that her speaking ability was also better than that of other children.

She also studied mathayom 1-3 in Nakhon Sri Thammarat at a government school. Her English was good at that stage and she tried hard to learn more. In fact, she said that she was better at English than at other subjects. The classes had around 40 students and the teaching was still teacher-centered with homework regularly assigned by the teacher, who was Thai. There was some opportunity for the children to speak by repeating after the teacher but mostly the teacher used a book and audio material on cassettes. They also used newspapers for activities, such as finding job descriptions and the teacher also had the students perform a Christmas show in English. She took extra classes after school at a tutor school and learned English twice a week concentrating on grammar and vocabulary by doing exercises with a teacher (i.e. not a video screen).

At mathayom 4 she changed to a different and better school in Nakhon Sri Thammarat. The school concentrated on English and she chose the arts stream so studied English every day. The classes, which had around 40 students, were divided by skills with more than one class most days, including conversation, listening, writing and reading, but the school focused on listening and speaking more than reading and writing, which she thinks was the hardest skill to learn. They used textbooks and the teacher got the students to read simplified novels which she found difficult. There were both Thai teachers and native speakers, who taught speaking and listening. She completed mathayom in 2000 and at the end of mathayom 6 she could write but not with perfect grammar and could have conducted a conversation with a foreigner.

She then went on to university also in Nakhorn Sri Thammarat, where she studied for four years and took compulsory English classes for the first two years as

part of the course and then took elective courses in the last two years. On average she studied English for about 3 hours per week and on 2 days per week. Although the major she took was not English some of the materials offered for self-study were in English and all the teachers of English at the university were native speakers. The English classes largely concentrated on speaking but they also covered reading and writing, especially as homework. She studied English for Careers as an elective course which covered interviewing and writing resumes in English. All the classes used communicative techniques including group work, role plays and searching for information on the Internet, and were conducted completely in English.

She graduated in 2004 and went on immediately to study for a Master's degree at a university in Bangkok in a Thai-language program, although all the materials including textbooks and audio-visual material were in English. The university did not offer regular classes in English but there was a 2-month preparatory course which she took, which concentrated on English reading skills and was taught by both Thai and native speaking teachers. She did not have much experience of reading journal articles at that stage as the course was based mostly on reading case studies about companies around the world. She wrote her thesis in Thai. Some of the studies included in her literature review were written in English, others were in Thai. For the English language articles her main difficulty was with the level of the vocabulary but she managed to understand it with the aid of a dictionary and by predicting meaning using context. Her master's degree research was not published as a journal article.

She then worked at PSU Surat Thani after graduating at Master's level in 2006 and before starting her PhD in 2011. She prepared for studying abroad at PhD level by reading a lot in English even though she was not obliged to pass a proficiency test before taking the course, which was at a university in China. The course was an English language program but there were no actual English classes. Before doing a year's research, she did one year's coursework in English in classes conducted by English-speaking Chinese lecturers who she understood about 80 % of the time although initially she had some difficulty understanding them. Her fellow students were from many different countries and they used English to communicate within the university but outside the university she had to use Chinese and she took a preparatory

course in survival Chinese provided by the university. However, speaking English every day improved both her ability and her confidence.

She also read a lot in English when studying for her PhD as well as writing and she only started writing in an academic style at PhD level. All her course assignments in China had to be submitted in English and she wrote her PhD thesis in English as well as publishing three papers in English from her work. Although her supervisor gave her a little help with the English for both her thesis and the articles, she mostly looked to friends who had better English than her to help and support her. When she wrote both the thesis and the articles, she wrote straight in English not in Thai first. She found it difficult to begin with, but it got easier. Her supervisor conducted a final check and edit after her friends had helped her to correct the English. However her supervisor told her that he could understand her speech but he had difficulty understanding her writing. All the articles were published in international journals and all the journals to which the articles were submitted were peer-reviewed. There were comments from the peer-reviewers about the English language content and her friends again helped her to improve the language.

The article I edited was based on research conducted after she returned to Thailand. The work was done jointly with another lecturer at another PSU campus but she did 90 % of the writing in the article which was written directly in English. The other author checked the paper only when she had finished writing it. After I edited it she accepted all or most of my suggestions. However, the article was rejected by four journals, all of which were outside of Thailand. The first rejection was because it was outside the journal's scope but she thinks that the main reason for its rejection overall was that there was insufficient contribution. Therefore the article has not been published and she has given up trying to get it published.

She has had ten papers published altogether, five in English and five in Thai, in Thai journals. She thinks that publishing in Thai is easier because the period it takes is shorter and the peer-review is not so 'strong'. She publishes in English because she feels that international journals are more respected and more people can access and read her work, as articles published in Thai can only be read by Thais. Her main reason for publishing in English is because of her career and the incentives

offered by the university for publishing in English. She has no problem with English being the language of academic publication as it enables people to share their work internationally.

She thinks her own determination to learn English has been the biggest factor in enabling her to succeed in learning English to her present level. The main tool she used was reading, and only occasionally did she watch movies or listen to songs. She thinks that reading is her best skill and she said that she doesn't like speaking. Nowadays she only uses English socially when communicating with foreign teachers at the university, but she reads English journal articles and also writes her own articles in English.

Her spoken English is rather inaccurate both structurally and also in its use of vocabulary and she had a tendency at times to produce utterances which could only be interpreted based on context rather than content. Her comprehension was generally quite good although she often had to ask for clarification about the intent of questions. However, overall she was able to convey meaning quite successfully and produced some quite long utterances as well as asking her own questions during the conversation.

FENI

FENI was born in Phuket where she attended both prathom and mathayom schools. After mathayom 6, she studied for a Bachelor's degree at a university in Bangkok. She then worked in a number of jobs in Bangkok for both private and government organizations before returning to Phuket and taking a lecturing position in PSU. She studied for a Master's degree whilst working in Bangkok and at the time of the interview was planning to study for a PhD either abroad or in Thailand.

She began learning English in prathom 5. She recalls intensive drilling of vocabulary by her English teacher who she said could speak English well and sometimes used English in the classroom. There was also limited speaking practice and some grammar input, but the main aim was to teach vocabulary. At mathayom, there was initially no change in the methodology used, but at higher levels there was

more effort made to have the students speak including paired activities where the students spoke to each other in English and also to read and write English.

During her school years, FENI had family members who used English as they worked in jobs related to the tourist industry. She described spending time with her sister who had studied in Australia and ran a tour company, sitting at the tour desk at a hotel and speaking to foreign visitors in English. However, outside of these activities she never used or tried to use English in her daily life and never considered English as important, although she enjoyed learning it.

At university, she took foundation English for 2 years and described this as the most effective period of learning English as, for the first time, she understood the need to learn it. The teachers were again all Thai and the classes concentrated on grammar although there was some effort to get the students to write and speak, even if the tests on which her grades were based did not test these abilities. She felt that she benefitted from her early training, memorizing vocabulary and was generally good at English, getting A grades throughout the 2 years. However after the second year she ceased studying English and feels that her English then deteriorated.

After she left university and was working, she found some need to use English, particularly in writing e mails and so took a course at a language school which she found gave her confidence to use English and helped her to develop her ability to write business e mails. Later, in her third job after leaving university, she worked with colleagues from Indonesia, Malaysia and China who used English to communicate with each other. This forced her to use her English, which had deteriorated since she took her English course, but the experience helped her to develop her ability to use the language. This period lasted for 2 years after which she took a position as a lecturer at PSU in Phuket, where she was again faced with working with non-Thai colleagues with whom she either chose to or was forced to use English, and this situation continued up to the time of the interview as she then had both Japanese and native-speaking English colleagues.

She said that she finds that her English improves quickly when she does activities to develop it, for instance downloading and using preparatory material for the IELTS test. However, she said that if she stops doing these activities, her English

again deteriorates. She has taken the IELTS test once and achieved a score of 5.5 against the 6.5 she would need to study abroad. She felt that she could improve her writing by self-study but that it is more difficult for her to improve her listening skill without regular and extended exposure to native-like speech. She watches English-language cable TV channels to try to help her listening skills but says that she sometimes has difficulty understanding what is said.

Before coming to work at PSU she had not published or written academic papers, but was encouraged to do so by the Dean of the faculty. Her first attempt which was a conference paper in Thai was rejected largely because she had no understanding of how to structure a paper. After she studied the formats used she was able to revise the paper and it was accepted for presentation at a national conference. She has presented at three conferences altogether including her first paper in Thai. The other papers have both been in English and were presented at a PSU conference and at an IEEE conference.

The first paper that she sent to the RDO to be edited was submitted to a journal which rejected it as they did not feel that the paper contributed anything novel. The paper had been written jointly in Thai with a colleague and the writing was achieved by each writer writing different sections of the paper then cross checking each other's work before translating it into English. Before submitting the paper to the RDO she had used two proof-reading services, one English and one based in Thailand. Some time after the paper was rejected, she was contacted by the editor of a journal, who is known to her and was asked to revise and submit the paper for a special edition of the journal. After revising the paper this was again sent to the RDO and re-edited. She was confident that this paper would be accepted and published. She rated having papers published in English as very difficult. So far she has written articles in Thai first then translated them but accepts that this causes difficulties as the two languages are not easily translatable and her work in English tends to use too many words and sentences which are too long. She was experimenting with writing directly in English to try to improve her written English work.

She accepted the need to write for publication in English as neither fair nor unfair and viewed the use of English as beneficial as a means of making her work

accessible to others, as well as making other people's work available to her. However, she said that her main reason for publishing articles was to make progress in her career.

Her spoken English was very fluent even if rather structurally inaccurate. However, she had no difficulty in extended speech and was able to express her opinions freely and lucidly and was often able to extend her answers beyond the immediate question asked. She had some difficulty understanding questions but was always able to seek clarification successfully.

GEE

GEE learned English for only 5 years during her mathayom education but then went on to major in English at undergraduate level. Later however after working as an English teacher, she decided to switch her major field at Master's level and for her PhD for which she studied in the USA. She has also studied in Japan for which reason, she learned Japanese.

She started learning English in 1971 in mathayom 1 in Songkhla at the age of 14. She did not learn English at prathom level as she said that it was not required under the national curriculum at that time⁷. She had no previous experience of English before she began learning but described English as exciting because it was new and foreign. The teachers were all Thai and the lesson content students was grammar based and were taught in classes of around 35-40 with no special classes for reading, writing or speaking.

When she began learning English, she had no knowledge of written English and learned to read and write at mathayom 1. She described the lessons as being teacher centered but fun compared to other subjects, with activities in class. She said that the teachers were competent speakers of English and that they were more modern and were friendlier and less strict than teachers in other subjects. She also said that they were younger than teachers in other subjects and she thought that some of them had spent time abroad. The teachers made some attempt to get the students to

⁷In fact strictly speaking, it was.

speak English although there was not very much opportunity for speaking. English was a compulsory subject throughout mathayom. In lower mathayom they worked from teacher-provided material as there was no MoE textbook, but at upper mathayom there was a textbook. Although she was unable to remember precisely how many hours they learned each week, she did not think that the frequency of classes changed between lower and upper mathayom. She said that she learned more English in upper mathayom where she opted for the arts stream and she learned both English and French. She studied only mathayom 4 & 5 before taking and passing the university entrance exams.

She also studied at a language center in Songkhla for between 60 and 90 hours to help her pass the university entrance exams. Here, for the first time she experienced being taught by an American native speaker with the lessons focused on speaking as opposed to grammar. The teacher spoke only English and used a textbook. These classes gave her the confidence to speak and the language center also had a small library to encourage reading skills.

In 1976 she began studying a 4-year BA course majoring in English at PSU, Pattani campus. She said that the English classes very different at university and the methods the teachers used were very different from those used at her mathayom school. The course included specific classes for all skills taught by both Thai and native speaking teachers, although on average she only had one class per year with a native speaking teacher which could have covered any of the skill areas. The foreign teachers spoke only English in class while the Thai teachers spoke 60 % English and 40 % Thai. The class sizes were much smaller than at school which gave more scope for student involvement.

After graduating in 1980, she taught English at the demonstration school in PSU Pattani for 3 years and also worked at PSU. She studied for a Master's degree, but not as an English major, at a university in Bangkok, where, the course was all in Thai but for the first time, she had to read English journal articles in order to conduct research, as a result of which her reading skills improved. She also studied for about 150 hours at the same language center at which she had studied in Songkhla while studying for her Master's degree to help her with reading English. However, she

produced her thesis in Thai and did not have to publish her research in order to graduate, so was not required at this time to write in an English academic style.

After graduating, she then returned to work as a lecturer in PSU Pattani, before going to study in Japan on a diploma course. She studied Japanese from a book before she went and on arrival there, the university provided a preparatory Japanese language course. The diploma course was taught in Japanese and although she said that she found Japanese more difficult than English she did not find that an impediment to learning.

She then returned to PSU Pattani and worked until 2006 when she went to Boston in the USA to study for her PhD. Before she went, she took a TOEFL and passed with the requisite mark. She prepared for the TOEFL by buying a book and taking a preparation course in Bangkok which helped her as it was focused on the techniques needed to do the test. She studied for 5 years in Boston, graduating in 2011. Initially she found it difficult to cope with the need to use English outside of the university and she said that she continued to be nervous about using English throughout her time in the USA. She had a small number of Thai friends in the USA but had to speak English most of the time she was there.

The university did not provide any preparatory English classes as the overseas students had all 'passed' either a TOEFL or the GRE. But she said that all the Thai overseas students experienced some difficulties and had to adjust to the environment. In university she was able to understand the teachers who lectured entirely in English but had difficulty with writing in English because she had no previous experience of academic writing, having only studied general writing as an undergraduate. The need for English academic writing skills arose mainly at the time of writing her dissertation rather than for writing during the course itself but since the university required that she write her dissertation in English and her advisor made it clear that she had to produce native-speaker standard writing, she attended writing classes at the university's tutor school. Here, she learned with American students, many of whom were undergraduates and most of whom were from other academic fields. She felt that the tutor center was only 50 % successful in equipping her to write her dissertation and she had to seek help from her advisor with the English-language content.

She thinks that writing in English is very difficult and much more difficult than speaking because written work has to be up to the standard of native speakers whereas spoken English can be accented or not 100 % accurate. After graduating at PhD level she said that she felt confident about using English but even today although she writes articles on her own, she feels the need to have a native speaker check her written English. She was not required to publish her PhD research other than in the form of her dissertation but did present her work at a conference.

The first article I edited for her was based on research at PSU. The first account of the research was a research report which was produced in Thai which also included an English abstract and was sent only to the PSU library. Previously this Thai research report was all that was required by the university, but now research must be published in a journal because of a change in the MoE regulations. The article I edited was therefore based on an expanded translation of the Thai report. The only help she had with the English was that from the RDO's publications clinic when I edited the paper and the paper was submitted to the journal immediately after being edited by me. Generally she thinks that reviewers at better journals are more specific about what language needs to be improved in papers. Her current article (which I also edited) has had two rounds of peer review whereas the previous article (the first I edited) had just one round. In the past she has experienced the rejection of articles which she then submitted to a different journal.

She has published or is in the process of publishing two articles in English plus two sets of conference proceedings, one of which was presented at a conference in Prague. She found this challenging but was able to answer questions in real time at the conference. She has published about ten articles in Thai either jointly with Master's advisees or on her own about her own research. She finds that English language journals are quicker than Thai journals because the process is on-line and they are strict about time for stages of the publication process. However, the process is basically the same for Thai and English journals. She writes articles in English because of the university's performance assessment rules which accord higher credit to articles in English and because only articles in English are considered as eligible to count towards promotions. She accepts that if PSU and other universities in Thailand

are to achieve international status they must share their research by having articles published in English because English is an international language. Nevertheless she finds writing in English a big problem and finds using an academic style of writing in English particularly difficult. She thinks that it is a skill which needs a lot of practice and that undergraduates need to be taught to write in an academic style. However she pointed out that some Thai people also have difficulty in writing clearly in Thai.

GEE's Spoken English seemed superficially quite fluent and natural, particularly because it employs the fillers, *you know* and *kind of* very frequently, giving it a very vernacular feel. However closer analysis showed that these fillers were often used as a substitute for grammatical elements such as subjects and verbs. However she had no difficulty in conveying meaning and little difficulty in comprehension.

HAL

HAL was born and raised in Hatyai in a family with a Chinese mother and learned English throughout prathom and mathayom, and in his first year as an undergraduate at PSU. He also had to learn English in the first year of his Master's degree as he got only a low score in the English section of the entrance examination. He said that up until that point he did not like English but then began to appreciate its importance. After finishing his Master's degree while working as a lecturer in Trang, he spent two periods learning in intensive English classes in Bangkok, and then had to attend a preliminary English course before commencing studying for his PhD in Australia. While in Australia he became fluent in English mostly by living and working in Australian society.

Before he started learning English in 1983, he had had no previous experience of English as no one in his family spoke English and he said that the English spelling of his family name is different for him and his two siblings as they had all had to work out the spelling for themselves. He attended anubahn in Hatyai but does not recall learning English there, so his first recollection of the language was aged 5 or 6 in prathom 1. He had to learn the alphabet and how to read and write and also learned how to construct simple sentences although he was not taught about tenses. The lessons were teacher-centered in classes of 50/60 children. He does not recall having a

textbook at prathom and thinks that they were given little opportunity to speak, and when there were efforts to teach verbal skills through listening, the students were reluctant to speak and no one asked the teacher anything if they did not understand. He learned for 6 years in prathom and most of the learning was focused on reading and writing. However, he was not good at English nor did he enjoy it.

He studied mathayom in Hatyai from 1989 where the teaching style was much the same as he had experienced at prathom. Initially he studied in a general program but for mathayom 4-6 he studied in a maths and science program. Class sizes ranged from 50 in mathayom 4 down to 40 in mathayom 6, the reduction being due to students dropping out of the program. He was not good at languages generally, even Thai and barely passed English throughout mathayom. All the teachers were Thai as there were no native-speaking teachers at that time and he never experienced contact with native-speaking teachers of English in prathom or mathayom. The teachers therefore taught in Thai without attempting to use English as the medium of teaching and they used textbooks from the Thai MoE.

The classes were focused on different skill areas but most of the teaching was centered on reading and writing although the teachers did introduce listening material from videos and the radio, which he found very difficult to understand, as well as role plays or more communicative activities which were used for on average of about 1 hour a week out of the 4 hours for which they learned English.

Although there was more opportunity to speak than at prathom, the students generally did not try to speak in class. He said that he was conscious of his poor English so didn't try to speak himself, particularly as there were two people in his class who had studied abroad on AFS scholarships who had very good English which he found intimidating. Although the learning of vocabulary was emphasized in the classes, it was not contextualized and he recalls one teacher teaching vocabulary grouped by which letter the words started with, without giving any lexical connections. He said that at no time was he made to appreciate that language is a skill which would improve with practice, and the subject was taught as if it were knowledge. There were elective English courses during mathayom but he never opted to take them and even though he tried to practice English by reading, his ability did

not improve at that time. He said that throughout mathayom he hated English and at the end of mathayom 6 in 1995 he had poor speaking skills and lacked the confidence to speak, which was aggravated by his poor knowledge of vocabulary, and he could only write simple sentences at that stage.

He went on to study for a Bachelor's degree at PSU, Hatyai and although he studied foundation English (2 courses) for 3 hours a week in his first year, overall he only had to study four language courses over 4 years and he took no elective English courses. However he was quite complementary about the lessons on the foundation course which he said were different from those he experienced at prathom or mathayom. The teacher used a variety of materials and methods to teach including role plays that were relevant to the students' interests. The teacher encouraged the students to speak without worrying about tenses and grammar and they also learned in language laboratory based classes where the students also had to speak. His English grades were better at PSU although he said that his English was still the worst in the class. The teacher used 80-90 % English when teaching and he was able to understand most of what was said, guessing to make up for any gaps in understanding.

He found it difficult to take tests based on locating grammatical errors in sentences and at the end of his undergraduate degree his reading and writing had not improved much, but he was more confident about speaking even though he still had no experience of speaking to native speakers. However, he remembers helping some foreigners to order food in a restaurant on Koh Samui by interpreting for them while he was on vacation there with some friends.

After graduating in 1999, he worked for 3 to 4 months then went on to study for a Master's degree at a university in Bangkok based on a scholarship to study at both Master's and PhD level in Thailand. The university had an entrance exam including an English section which he barely passed and as his English level was low he had to study English throughout the first year. The courses focused on all skills in classes of only 20 students with a teacher who was Thai. In his Master's program they used all English materials but the teachers lectured in Thai. Although he had used some English materials in years 3 and 4 as an undergraduate at PSU, he found using all English materials difficult. However, he did not have to read English journal

articles at that stage and the citations in his thesis were mostly of other people's theses. His own thesis was written in Thai and all the references were of Thai material.

He graduated at Master's level in 2001. The poor result in English in the entrance exam had made him realize that he needed to improve his English but did not know how to go about it at that stage. After graduating with his Master's degree he went to work as a lecturer at the PSU Trang campus and during the 2 years he worked there, he went to Bangkok twice during semester breaks to study English intensively. He learned two, 6-week periods in those 2 years during which he studied for 6 hours a day, 5 days a week, learning in total for 180 hours each time. The teachers were all native speakers and the first course concentrated on general English with the second course being an IELTS preparation course. That course did not really help him to improve his English but overall the courses had quite a big impact on his English skills because by this time, he wanted to learn. He also co-authored a series of text books in Thai about his subject while he was lecturing in PSU Trang and he was offered the chance to go to study in Germany or Austria for his PhD while he was there but declined as he decided that when he went on to study further he wanted to do so in English

In 2003 he decided to leave the university and work in a bank, which he did for one year, first in Bangkok and then in Hatyai, where he did not have to use English at all but did have to use Chinese. He was then invited to go back to work in PSU, this time in the Hatyai campus. He worked at PSU Hatyai for 2 years then went to Australia to study for his PhD in mid-2007. At that time he did not have a deep knowledge of research methods and his English was also still relatively poor. The university required an IELTS score of 6.5 which he could not achieve before leaving Thailand so he had to take preparatory English courses in the university before starting his PhD. He studied three, 5-week modules over 15 weeks and most of his fellow students in the preparatory classes were Chinese or from the Middle East, with the courses concentrating on communication.

He studied for 4 years (2007-2011) in Australia. Initially he had difficulty because he lacked knowledge of research methodology and he also still had some

problems with English and particularly had difficulty understanding the lecturer in the research techniques class which he was obliged to take. He was aware that many of the people on the course had higher levels of English than he did and he skipped many of the classes. Nevertheless in his third year he went back and attended the same class and was then able to understand it.

He used English almost exclusively to communicate in Australia both at the university and outside it. Initially he found this hard but he lived outside the campus in private accommodation and tried to immerse himself in Australian society so that by the third year he was completely fluent. Although he had a scholarship as well as being supported by his family he worked as a waiter in a Greek-owned coffee shop and his English improved much more because of using English outside the university than in it. He also took on the role of a counselor for other Thai students. He feels that a lot of Thai students try to stay within Thai culture when they are studying abroad so don't learn to speak or understand English as well as he did

He did no coursework for his PhD and at the beginning of the program he concentrated on reading journal articles in his area of interest and his knowledge of English academic writing was helped by having to read English journal articles. He never had specific classes relating to academic English but learned to write by adapting other people's sentences. He found articles by non-native speakers of English easier to understand than those of native speakers as they used more complex English. Initially he found it hard to find a suitable subject for his research but once he found a gap he became passionate about research. He wrote his thesis directly in English. He created a plan first and his advisor gave him some guidance about how to plan and link his writing. His advisor also gave him some help with the English in his thesis but he eventually had to pay a professional editor for proof-reading. The university required him to publish his research as they were aiming to become a top-ten university in Australia. He published three articles all in international journals. All the manuscripts submitted in 2011 were initially rejected. The first comments related to the academic content of the articles but the final comments were about poor English and at that stage his advisor, who was a co-author corrected the English. He came back to Thailand in 2012 and resumed his position at PSU in Hatyai.

The paper I edited was inspired by a question from a student at PSU about the skills needed to succeed in ASEAN. The research area was a new field for him and he had to develop a questionnaire for the project which was not grant-funded. There was no other account of the research written and the article was written in English. After I edited the article, he read through it carefully many times. He eventually accepted 70-80 % of the changes I suggested including all or most of the structural suggestions, but less of the improvements in style or information content. The article was submitted to a journal in Malaysia. It was peer-reviewed by three reviewers who made more than 20 comments, 85 % of which were related to the content and 15 % to the English. I reviewed the article again in respect of the English content before it was resubmitted and accepted. Altogether, the article took 1½ - 2 years to get published. He noted that the period needed to process articles in Thai is much quicker (5-6 months) than when having them published in international journals.

He finds writing in academic English easier than writing in Thai. He has had problems in publishing articles in Thai because he does not follow the Thai writing structure. The difficulty of writing in Thai in his field is mostly related to the use of language style rather than to any lack of technical terms which he said is more of a problem in scientific fields. He has had about 30 articles published, 10 in Thai, in Thai journals and 20 in English in international journals. The university pays a higher reward for publication in English only in international journals so there is no benefit in publishing in English in Thai journals. Nevertheless, even though he prefers to write and publish in English he realizes that this is not possible for all his students nor is it realistic to expect all Thai students at all levels to be able to read articles in English. Therefore he will continue to publish some articles in Thai and he tries to publish about one article in Thai to four in English. He encourages his Master's and Bachelor's students to publish in Thai unless their findings are very interesting in which case he will encourage and help them to write their thesis and to publish in English. He shares the publication reward given by the university with his students.

He prefers to publish in English as a way of spreading knowledge of the Asian context in his field which he thinks is different to Western contexts on which the majority of articles published are based. He does not feel under pressure to publish

from the university as he only needs to publish one article every 2 years. He currently has around 20 articles in various stages of processing and expects to publish around 300 by the time he retires. He thinks it is fair that he must write in English to get his work recognized as it gives him access to a far bigger audience. He thinks it is much more difficult to publish in ISI-rated journals than in Scopus-rated journals. He said that his writing in English is hampered because even though he thinks in English when writing, his language is still influenced by Thai language structure and his Thai background.

His spoken English was very clear and confident with a good vernacular feel and was easy to understand at all times although rather structurally inaccurate. His comprehension was also good and at a near native level. He was often able to produce extended utterances which went beyond the immediate scope of the question asked and overall his English had clearly benefitted from the 4 years spent in an English speaking environment.

INA

INA was born in 1970 and raised near Hatyai in a village on the southern outskirts of the city. Although she is a Muslim her mother tongue is Thai and she was brought up in a 100 % Thai environment and does not speak Jawi. She said that she was brought up in a reading environment and read a lot herself when she was young. She was educated at prathom level and at lower mathayom in the area where she was born, but for higher mathayom she learnt in a maths and English program in Hatyai. She then studied for a BA as an English major at a university in Bangkok, immediately going on to study for an MA at the same university during which time she spent 7 months studying in London She graduated top in her year and was taken on as a lecturer at the university in Bangkok, where she worked for 2 years before she joined the faculty as a lecturer at PSU Pattani. She later went on to study for a PhD in Malaysia graduating in 2016.

She started learning English at 11years old in prathom 5 in a government school in her village and had had no significant exposure to English before starting to learn although she thinks she may have seen English materials from older children, but only informally and it was restricted to seeing English written in books. She said

that she has been lucky always to have had good teachers of English throughout her period of learning and her first teacher, who was Thai, was very good at conveying ideas and she fell in love with English through his early influence. She learned English twice a week in a class of 30 children. They started by learning the alphabet and the used traditional teaching methods to teach mostly vocabulary, speaking Thai and using a book of which the children had a copy. The students copied words from the book or from the board into their notebooks and also used Thai phonetic transcriptions to aid pronunciation. They had no opportunity to speak English other than repetition of words modeled by the teacher and there was no attempt to teach spoken communication nor does she remember learning any grammar at prathom.

She only started learning grammar in lower mathayom which she also attended at a government school in her immediate area. They learned English two or three times a week in a class of 30 students and there was little difference in the teaching methodology used from that at prathom although the textbooks used were more difficult. The emphasis was on vocabulary and grammar which was learned by orally repeating rules and then doing exercises which consisted of answering questions with short sentences based on readings in the textbook, then reading out the answers when the teacher asked questions. There was no attempt to teach writing beyond answering simple questions and she did not attempt paragraph length writing until she was at university. However, she remembers that the teacher tried to make the lessons interesting by telling funny stories and although these were in Thai not English, the children were encouraged to learn by the good atmosphere in the class. He did not use any materials other than the textbook and the English teaching was traditional and not communicative.

She went to upper mathayom at a government school in Hatyai where the learning of English was more serious. She studied in a maths-English program and learned English for longer each week. The content was mostly grammar and reading with still not much writing. The reading passages were more complicated and they focused on more difficult vocabulary and grammar including compound/complex sentence structure. Much of the learning at school was based on receptive skills and focused on reading and grammar with the teachers speaking Thai to explain the

grammar points followed by students doing exercises. However, there were also some more communicative elements to the learning and they did role plays and performed plays in English, learned and sang popular songs in front of the class, made board/poster presentations and played games. She also read the Student Weekly and although at that stage she could not finish reading the whole newspaper she read easy material and did crosswords etc. All the teachers were Thai but she remembers having one lesson with a visiting English native speaking teacher which was exciting at the time. She enjoyed learning because she was interested in English and enjoyed the challenge as well as competing with other students to get the highest marks. She also began to find ways outside of school to improve her English. She watched Open University English broadcasts and also watched a Thai TV show featuring English songs and idioms. She also took courses at a tutorial school where the teacher taught linguistically inclined English explaining word structure as a way of teaching vocabulary. The teacher was Thai and the lessons were conducted in Thai but the vocabulary was illustrated by stories and movies to help students to remember it. She learned every weekend for 3 or 4 hours throughout higher mathayom.

At end of mathayom her reading skills were quite good although English books were too difficult for her at that stage. But her listening and speaking skills were poor and her writing was only at a sentence level. However her grammar was good and she got good grades. Nevertheless she was somewhat surprised to be awarded a place at a university in Bangkok, where she majored in English. The classes there were conducted by both Thai and native speakers and apart from the translation class which was taught in Thai, all used English as the teaching medium. At first she found that quite difficult as her listening skills were not that good but she did her best to adapt to the situation as she felt very lucky to be learning in an all-English classroom environment. She had difficulty understanding some of the native speaking teachers and was not familiar with some of the words they used which were familiar to her peers, many of whom were from prestigious schools in Bangkok and had a wider experience of English based on having already spent time abroad in English speaking countries. She found that her experience to that point had been very different from that of many of her friends, who already had fluent English speaking skills. This was her first real exposure to native speaking teachers and she found that

some of them were better teachers than others. The best made her feel empowered by their approach to teaching and their concern that the students should understand what was being taught and their acceptance of students' errors. The speaking classes were based on setting contexts for learning language, followed communicative principles and were mostly taught by native speakers. In her first and second years she could not always express her ideas in grammatically correct sentences and lacked confidence in speaking which may have been partly due to being intimidated by her friends' better English. She was more comfortable in writing classes and enjoyed literature-based classes including poetry. She found that she could make judgments both about the content of learning and the quality of the teachers at that stage reflecting her developing ability in English.

She did voluntary work at conferences to try to get experience of interacting with native speakers but still did not think that she was as fluent in speaking as some of her friends even at the end of her BA particularly in complicated situations. But in writing she could express ideas well in English although her grammar was not perfect, and she got high grades for many courses based on her essay writing ability. She took a series of writing classes including an advanced writing course but it was not based specifically on the English academic writing style. However on her own initiative, rather than as a result of any prompting from the university, she used the British Council library to find material to help her to become familiar with literary criticism and was exposed to academic writing style including journal articles. She thinks that her ability to find ways of learning outside of her formal education is based on a love of the English language. During her BA studies, she had two articles published in Thai in a journal based on her minor which was Thai literature. Therefore, her earliest experience of writing in an academic style was in Thai.

She took an MA immediately after her BA at the same university although not as an English major. The course was in Thai but was based largely on English translations of European texts. She also had to read journal articles in English although her thesis was produced in Thai based on a study of Thai writings and movies and was also the basis of articles published again, in Thai.

While studying for her MA she was given a scholarship to study in London for two semesters (7 months) which was the first time that she experienced living in an English speaking environment. By that time, her English was at a sufficiently high level that she did not find that difficult and could operate successfully at both an academic and social level. She said that she found it easier to speak English in an all-English environment than she had in Thailand as there was no pressure from other Thais to be absolutely perfect and she felt that English people made an effort to understand and that helped her to use the language naturally. Her experience speaking to native speakers at conferences when she worked as a volunteer helped her to be confident in using the language and in England she was never afraid to speak or to ask questions.

In the first 3 months she had some problems with comprehending spoken English since up to that point she had had little exposure to spoken English. The difficulties were largely related to individual speakers' accents with some easier to understand than others. Most people she learned with were British but there were some international students and she shared a room with a Singaporean who had very good English but spoke very quickly and this also helped her to adapt to different accents.

She graduated at MA level with the highest mark in her year and was recruited as a lecturer at the university at which she had studied. She taught in Thai but had to read a lot of English writing, particularly contemporary novels. She thinks that at that time she still struggled somewhat with English and had to use a dictionary when reading to help her to understand. After two years, she moved to PSU Pattani and she thinks that her English improved significantly from that time. She taught (and still teaches) using communicative techniques speaking 80 % English and this helped to improve her spoken English. At first she was able to interact with and learned a lot from native speaking teachers but after the beginning of the present troubles in 2004 most of the native speaking teachers moved out of the area. Since 2004 she has used Internet-based resources to develop her English, including TED talks and Voice of America broadcasts and she reads contemporary English novels when she can. She finds that she can learn a lot from students' mistakes in writing English.

In 2011 she commenced studying for a PhD. Largely for family reasons, she chose to study in Malaysia where she spent 4½ years at university graduating in 2016. The university is an international university and everyone there spoke English. The students were predominantly Malaysians but there were also students from other Islamic countries. She had to write article-length criticisms in English every week from the beginning of her course so her confidence in using English improved a lot. But as she had not up to that point written journal articles in English, she had to learn how to write in an English academic style which she did by reading a lot of journal articles and text books in her own time and then adapting what she read, particularly sentence structures and vocabulary, to her own writing. She concentrated on understanding vocabulary in context as a way of learning how to use it in her own writing. Her advisor for her PhD was a Bangladeshi who had native-speaker level English. When she wrote her thesis, he helped her both with the content and the English including helping her with sentence structure. He told her that she tended to write over-long sentences and that she should split them up to make them easier to understand.

She published her first work in English in 2016 and it appeared in the proceedings of a conference at a university in Penang. It was not compulsory for her to publish articles to graduate but she has to publish one article in English as a condition of a grant for writing her thesis. The article has already been submitted to a journal and is under peer review. She has had feedback from the peer reviewers which is mostly about phraseology rather than content which she finds annoying as the content of the article has been accepted for publication and the language itself is not grammatically incorrect. However, the editor of the journal is recommending that she follows what the reviewer is suggesting.

The article which I edited is a different article which has yet to be submitted to a journal. The article was adapted from her thesis which covered a broader area than the subject matter she wrote about in the article. The adaptation involved using some of the language from her thesis and adding other sections. She has yet to deal with the suggestions I made on this article but she has incorporated some of the suggestions in

the other article already under peer review. The article will eventually be submitted to an international journal.

She thinks that her style of writing is the same in Thai and English and sees no basic difference in the rhetorical structure of academic work in English and Thai. Because her English is at a high level she finds thinking and writing in English quite natural although she may need to revise complex sentences. Her main reasons for wanting to publish in English are because of her career and because she likes to do challenging things. There is also pressure on her from the university to publish articles in English. However in other non-academic circumstances she would choose to write in her native Thai. She does not think that having to write in English is unfair, it is just a challenge she accepts as necessary for her personal development. In the past she found writing in English difficult but now it is less so and in certain circumstances it is easier than writing in Thai where particular theoretic-based subject matter lacks suitable vocabulary in Thai. She thinks that using the (definite and indefinite) article system in English is difficult for her and even though it seems easy, she often makes mistakes. She also finds prepositions difficult for the same reason and thinks that article and preposition use are largely based on a natural grasp of the language. She also finds the use of idioms difficult and often has to be helped by her children who, following their experience of learning in English in Malaysia, have a natural grasp of the language, which she says is superior to hers. She uses English at home to speak to her children and they help her when she has difficulty understanding certain varieties of and accents in English, e.g., BVE.

Her spoken English is as close to a native level as it is possible to get without actually being a native speaker. Her English is very accurate and she effortlessly produced extended utterances which went beyond the immediate scope of the question asked. Her speech had a very natural „feel“ for the use of the language which must owe something to the relatively short period spent in the UK and the rather longer period in Malaysia using English extensively. But the overall level of performance she has achieved is probably mainly a reflection of the effort that she has made to improve her English using any means and opportunity available to her.

JEN

JEN was born in Trang where she attended prathom and mathayom schools. She graduated from PSU's Pattani Campus and after working in both Trang and at PSU Pattani for 7 years, she studied for an Master's degree there. She then resumed her career in Pattani campus before studying for a PhD in a different faculty at PSU Pattani (she has studied at three different faculties) during which time she spent a year in England at a university in London. Since completing her PhD she has worked as a lecturer in PSU Pattani.

She attended a private school for prathom and started learning English at age 6 in prathom 1 in 1975. Prior to that, she had had no experience of English. At prathom 1 she began by learning the alphabet. The lessons between prathom 1 and 3 were fun rather than formal and included games, singing songs and drawing and coloring pictures of simple words. She said that these fun activities created a good attitude in the children towards learning English and that this pattern of learning was general in private schools, but not in government schools at that time. All the teachers were Thai but they were not specialist English teachers and taught other subjects as well. The books used in lower prathom were more visual and the students colored pictures to help to learn words. From prathom 4 they started learning vocabulary more seriously and learned five words a day which were dictated by the teacher and tested for correct spelling. The teachers did not emphasize speaking but concentrated on reading and writing although the children were made to read stories aloud which included those familiar to them from reading in Thai, which helped them to understand the English. Handwriting was also important with cursive writing being taught from prathom 5. The teachers spoke 80-90 % Thai in class especially in prathom 5 and 6 when they started teaching and explaining English grammar in Thai. They also assigned formal exercises as homework from a text/workbook. Throughout prathom, the class size was around 40 students and they learned English for 2-3 hours a week.

She changed to a government school (in Trang) for mathayom. Here, the English was harder and in mathayom 1-3 she learned English for 3 hours per week in a class of about 35 students. The text books used were from the MoE series, *English for Thai students*, and the books were denser than the books she had learned from at

prathom. The teachers were all Thai and tended to use a lecturing style and there were also regular formal tests. There was more emphasis on grammar and reading and writing were the main skills focused on with speaking being taught less than other skills. The writing extended to paragraph level but not to full essays. The students did tense conversion exercises (rewriting passages in a different tense) as grammar practice.

At mathayom 4 she chose a language program (English and French) and learned English for about 6 hours a week, of which 3 hours was a general English course covering reading and writing which all the students did, but there was also a listening speaking course which students in the science program didn't study. She also learned in a language laboratory and the teachers tried to introduce authentic media like radio broadcasts and songs. They also used the *Student Weekly* to teach reading in addition to using textbooks, and songs and tapes of stories read by native speakers. However, there were no native speaking teachers at the school at that time although she met an English speaking exchange student at the school but had limited opportunity to speak to him

At the end of mathayom, she lacked confidence in speaking English and was worried about making mistakes. She could have conducted a simple conversation with an English speaker but found it difficult to understand English TV broadcasts which she had seen at school, although she watched and could understand movies in English more than news broadcasts. She could read an English newspaper but only those parts about things in which she was interested, and she could write personal information at a paragraph level.

She studied at PSU, Pattani for a Bachelor's degree with English as her minor subject. In the first year she studied foundation English in which the (Thai) teacher spoke about 50 % English in class which she initially found quite difficult to understand. Speaking skills accounted for only around 10 – 15 % of the lessons and there was no listening element in the mid-term and final tests. She also took separate classes in reading, structure, writing and listening and in her fourth year took two speaking/listening courses with a native speaking teacher, who encouraged the

students to speak without worrying over-much about correct grammar, which was very different from the way she had been taught by Thai teachers.

During her second and third years she shared a house with a German teacher, who spoke English to her every day when they shared meals. She found this hard at first and tried to avoid having to speak English. She said that she had to use a dictionary to prepare for these conversations when she anticipated difficulty in describing her daily activities. However this experience helped her English to develop naturally. She used to accompany the teacher to events in Pattani and when there were friends staying, she joined their activities and spoke English to them. She initially found this difficult because her spoken English was still not good but she gradually found that it became less difficult and that people made an effort to understand her. This helped her confidence and her English developed a lot which had an effect on her learning of English in her classes at the university. The effect was mainly on her ability to use structurally correct English when speaking. By the fourth year, she was able to notice that her English was better in the listening/speaking class than that of other students because of her experience of using English outside of the university. She assessed herself at 7 out of 10 for English at the end of her Bachelor's degree. She spoke with confidence, could read English short stories and was able to write her own resume in English.

She then returned to Trang where she worked in a high school for 2 years. She was active in the local church and met western visitors and used English when she acted as their guide. She also taught a 4-month course in English for tourism at the high school, but that was her only experience of teaching English. She then returned to PSU Pattani where she worked for 5 years although not as a lecturer. During this time, she assisted her supervisor by writing and reading emails in English relating to changes in their working system. This was not difficult for her as the technical vocabulary used was familiar. While working there, she gained a scholarship for a 6-week working visit to Australia which was her first experience of an English speaking environment. At the university she visited she initially had some difficult understanding idioms, but she became quite familiar with the Australian accent and

using English in her daily life. She mixed socially with and spoke English to her Australian colleagues and overall the experience helped to improve her English

She then studied for a Masters' degree at PSU in Pattani. She took and passed the PSU-GET before commencing studying, so did not have to take English courses. The coursework was all conducted in Thai but the statistics teacher used an English text book and English journal articles were assigned as reading material by other lecturers. She initially found it hard to understand English academic writing particularly as she was not familiar with research methodology, but once she had taken a course in research methodology in Thai the English texts assigned became easier to understand. She produced her Thesis in Thai though with an English abstract and citing some English material including journal articles as references. She published her research in Thai in a Thai journal. However, at this stage she had no experience of writing in an English academic style, but only of reading academic material.

She then went back to work as a lecturer at PSU Pattani for 4 years before embarking on a PhD and as well as working as a lecturer, she also worked part-time for 15 years as the business manager of a language school teaching English in Pattani, which employed foreign teachers with whom she communicated in English. This helped her to become familiar with using English for her work as well as with English-speaking cultural practices and she also read the Bangkok Post every day at the school.

For her PhD, the faculty she studied at emphasized the use of methodology and statistics and her supervisor was from Australia. He interviewed her before accepting her to check that she understood English. She chose a research topic that interested her and read a lot of material in English relating to it to become familiar with the English academic style. She wrote her PhD thesis in English which was the first experience she had of academic English at this length. She had some difficulty getting used to paraphrasing other people's writing but she taught herself to think and write in English, using a dictionary to find vocabulary where she did not know a word to express an idea.

She studied for 4 years for her PhD. In her first year she wrote her (20-page) proposal in English, collected data in the second year, then in her third year, she got a scholarship to spend a year studying and working at a university in London. She acted as a TA in classes conducted by her British supervisor, and experienced the difference between how students learn in Britain and how they learn in Thailand. She also became involved as an assistant to her supervisor who was heading a European curriculum-based project. She communicated in English by e mail with professors in 27 European countries and travelled to many European countries to attend meetings. This helped her English to improve and she became familiar with using a formal style of communicating in English and with English spoken in different European accents, and she gained confidence in her English from experiencing other non-English native speakers using English as a common language.

She returned to Thailand in 2009 and completed her PhD thesis in 2010. She then published two articles in English from her research, one in the UK and one in Canada. Her Australian supervisor helped her mostly with the content of the articles and she wrote one of the articles while in London and got help from her British landlady with the English language content.

The article she originally gave me to proof-read was not based on her own research, but was written by her to help a friend. She read her friend's thesis in Thai and tried to adapt it in English into an article. She found this very difficult as she didn't always understand the context and had some difficulty with vocabulary on a subject which was not familiar to her. As well as getting me to check the English, She also asked for some help from her former supervisor in London with the English. She said that she has always had to seek help in correcting her English when writing articles. She has published approximately one article per year since graduating in 2010 and altogether she has published about 10 articles, 3 or 4 in Thai and 6 or 7 in English. She has also presented her work at international conferences and written proceedings papers in English. She thinks that communicating her ideas in English is the main problem with writing and publishing in English although she is still able to think in English when writing in English, and she also sometimes finds journal guidelines difficult to follow. She has less of a problem dealing with peer reviewers.

When publishing in Thai, she said that peer reviewers seem to be more interested in the sample size than the results and she has noted a tendency for Thai journals to insist on longer articles. Neither of these factors applies to international journals in her experience and international journals seem to be more focused on interesting and novel results. She thinks the structure of academic writing is clearer in English than in Thai. Also she said that in her experience the process of getting published in Thai takes longer than getting published internationally. She has to write articles in Thai for Thai-grant-funded work but she usually writes in English for faculty funded work as this gives her more freedom to explore her own ideas although she can write in Thai or English as she prefers. Generally, she prefers to write articles in English as a way of reaching a wider audience outside of Thailand which can lead to cooperation with other researchers. Thai articles do not reach a wide audience and she thinks that having to write in English to share work is fair as it allows everybody to share in the benefits of research.

Her spoken English is clear and confident and quite accurate, her comprehension is at a near native level and she never had difficulty understanding questions asked of her. She was often able to produce extended utterances which went beyond the immediate scope of the question asked and her speech used number of vernacular devices reflecting the fairly long period either in English speaking environments or in situations in Thailand where English was used as a common language.

Since the first writing analyzed was not based on her own work, a second paper based on her own research was analyzed and it is apparent that the difficulty she encountered in the content of the first paper and the fact that it was derived from a Thai thesis which she did not write had had a considerable influence on the outcome. Nevertheless there was high correlation of $r = 0.78$ between NCUs based on the structural categories albeit that at an individual code level overall the correlation was much lower (although significant) at $r = 0.46$. The overall rate at which NCUs occurred in the second paper was however very much lower than in the first paper. See Table 5 in Chapter 3, section 3.3 for details)

KEN

KEN was born in Trang in 1982 but moved to Phang Nga where he attended prathom as well as mathayom 1-3, then returned to Trang for mathayom 4-6 where he studied in a science and math program. He studied for Bachelor's and Master's degrees immediately after school then worked for 4 years before returning to study for a PhD in which he was engaged at the time of the interview.

He started learning English at age 10 in 1992 in prathom 5 in a government school in Phang Nga in a class of about 40 students. He had no experience of English before he started learning. He learned for about 3 hours per week and the teacher only used a book to teach. Initially they learned the alphabet, simple vocabulary and to read simple sentences. The teacher spoke Thai and English using Thai to explain the language. Once the students began to be familiar with the language they were able to speak using learned dialogues, performed with other students

In mathayom 1-3 he studied in a government school in Phang Nga, where he learned grammar, and the English sentences he experienced were more difficult than in prathom. The teachers were Thai and the teaching methods were the same as those in prathom. They learned mostly by reading, and learning grammar rules and parts of speech. The materials used included a text book and simple readers as well as the *Student Weekly*. The class size was about 40-45 and they learned for 3 hours per week.

He attended a government school in Trang for mathayom 4-6 where he joined a math and science program and he only really started reading and understanding English from English material at that time. He continued to learn English for 3 hours per week and the English classes included more complex sentence structure as well as studying paragraph structure. The teaching concentrated on reading with little time spent on speaking or writing. The teachers were all Thai and he had no exposure to native-speaking teachers. At this time, the teachers never tried to explain to the science and math students why English was important so the students weren't really interested in learning it.

At the end of mathayom 6 in 1999, his English was not good and he could not speak or write anything beyond very simple sentences. He wasn't interested in English and focused on science. He might have been able to understand an English newspaper but only if the stories were familiar from the Thai media. He found writing difficult because he was confused by English grammar and he barely passed English throughout mathayom.

He then studied in PSU Pattani for a Bachelor's degree. In his first and second years he took general English then scientific English. He cannot remember much about the classes in the first and second year but the Teachers were again all Thai and the teaching style was similar to that he had experienced at mathayom. The emphasis was on grammar reading and listening with little time spent on speaking and the opportunity to speak to other students was about the same as in mathayom.

He started reading English journal articles as an undergraduate in his third year in preparation for research in his final year and at first he found it hard to understand them. Some of the technical subjects were also taught from English textbooks. He dealt with his difficulties in understanding English text books and articles by using Internet-based resources and asking friends (but not lecturers) for help. However, he did not have to produce anything in English and his undergraduate thesis was written in Thai.

At the end of his Bachelor's degree in 2003, he had no experience of interacting with native speakers or using English communicatively. He had a little experience of hearing native speaking lecturers at university seminars and could understand journal articles and textbooks in English. However, his spoken English was little better than at mathayom.

He went on immediately to study for a Master's degree at PSU Pattani, where his thesis was again written in Thai. He took, but could not pass, the PSU GET at Master's level so had to take a class instead in order to graduate. The class, 'English for graduate students' lasted for one semester, and occupied 3 hours per week. The teacher was Thai and the class was aimed at structural (both sentence and paragraph level) competence. There was no chance at all to speak and he took no other English

classes at all during his Master's degree years. Therefore, there was little improvement in his English at that time.

After graduating he worked for 4 years during which time he took a TOEFL preparation class which covered reading, listening and writing although the course concentrated on test taking techniques rather than on English. He had no need himself to take a TOEFL but studied with a friend. He never took the test itself but his score improved on practice (pre- and post-) tests during the course. The class was small, only five people and was conducted at a language school with both Thai and native-speaker teachers and was conducted in both Thai and English. This was his first experience of learning with native speakers although the time spent with them was not great. He found it hard to understand them at first but after a time his understanding improved. The classes occupied 3 hours, twice a week and he attended them for 1 year although they did not take place every week due to cancellations. The class helped him to understand the function of parts of speech and his grammar improved. The writing skills taught included the structure of an essay and the teachers also checked and commented on students' writing for grammatical errors. But he found it hard to learn to write in a classroom situation.

He then returned to PSU Pattani in 2011 to study for a PhD and had been studying there since then at the time of the interview. His main barrier to graduating was publishing articles in English of which he needs to publish two in order to graduate and he has had problems doing that. He must also write his thesis in English. In order to meet the graduation requirements with regard to English, he took both the CU TEP and PSU GET but could not achieve high enough scores on either. He therefore took a 1-month intensive English course at PSU in Hatyai to combine with his score in order to meet the graduation requirements. The class covered reading, writing and listening but he took only the reading and writing modules which ran for 6 to 9 hours a week. There was no spoken element at all. The writing focused on academic writing techniques and he found it useful but he still finds listening and speaking difficult and though he thinks his English has improved, he recognizes that the improvement is not enough for his PhD needs.

He has presented in English in a seminar-based class while studying for his PhD and he also presented his research in English at a conference in Malaysia, for which he wrote a proceedings paper, which was the first time he had written an extended piece of work in English. When he submitted the proceedings paper for the conference, he was told he needed to improve the English. However, the content of the proceedings paper and the journal paper which I reviewed were not the same and did not relate to the same data.

He had written both the articles he needed to publish but neither had been published and only one had been submitted for publication at the time of the interview with the second article then with his advisor for comments. He had still not started writing his thesis although his laboratory work had been completed. The article I edited is that which had already been submitted, the first article that he had ever submitted to an international journal. He wrote the article based on reading other people's articles and adapting what they wrote to his own research. The article took him more than a month to write and his advisor vetted the article before it was sent to the RDO but only commented on the technical content, and not the English, except where it was obviously wrong. After my editing he accepted more than 90% of the suggestions. The journal had responded and he was in the process of dealing with their comments. The reviewers only commented on the technical content of the article and there were no comments about the English. So far his only reason for writing in English is to meet the graduation requirements for his PhD but despite the obvious difficulties that writing and publishing in English present to him, he thinks it is fair that he must write in English as this will help him to improve his writing in the future based on the reviewers' comments.

His spoken English was quite poor and although he often tried to give extended answers to questions, his answers were often difficult to understand and he also had some difficulty in understanding questions, frequently giving answers that did not appear to relate to what had been asked. He also had a marked tendency to omit obligatory elements of structural units notably verbs and subjects.

LIZA

LIZA was born and lived in a village in an isolated rural location close to Songkhla. Her parents were farmers who were not educated beyond prathom level. After attending prathom school in her village she studied at two high schools in Songkhla before taking a Bachelor's degree in PSU, Pattani. All the English classes she attended from prathom to undergraduate level were taught by Thai teachers with no exposure to native speaking teachers although she had some exposure to an English lecturer during the last two years of her Bachelor's degree studies. Later she spent 6 years in the UK studying for Master's and PhD degrees followed by a year as a post-doc in Holland.

She started learning English in prathom 5 aged 12 in 1985 in the school in her village, which was quite isolated from Songkhla at that time, in a class of about 30 students.. The English classes occupied 3 hours a week, were taught by a Thai teacher and covered basic grammar and vocabulary and they learned to write simple sentences. She had no previous exposure to English other than hearing it on TV and had to learn the alphabet and reading and writing English in school. The Teacher taught mostly in Thai and all instructions were in Thai. The teacher taught from a book and also wrote words on the blackboard which the children repeated. Other than that they had little chance to practice speaking and at that stage she could not really speak English although she could read words.

She studied mathayom 1-3 in a school in Songkhla where the classes focused on more complex grammar including the use of tenses. The teacher still spoke mostly Thai with the students repeating things written on the board in English, but the teaching style was basically lecturing in Thai. However she said that the teacher did a good job and the students enjoyed their English classes because she tried to make the learning relevant to their daily lives and used newspapers and cassette recordings of English made for teaching in the classes. However, with an average class size throughout mathayom of 45, the students had little opportunity to speak. Initially her interest in English was only to get grades but at this time, she began to realize the importance of English partly due to being exposed to a wider world when moving to a school in Songkhla.

At mathayom 4 she changed schools and studied in a science program. The teaching methods in the English classes were the same but the content was at a higher level with longer reading texts to translate and longer listenings including note-taking and summarizing newspaper articles. However at this stage she could still only write in short sentences. The (Thai) teacher used books produced by the MoE which were mostly in English. At the end of mathayom 5 she took the university entrance examination and got a place at university so did not study mathayom 6. At the end of mathayom 5 although her reading skills were quite good, she could not really speak English and was only capable of speaking basic sentences giving personal information. She said that she was afraid of foreigners and that her first experience of speaking to foreigners in her third year at university was difficult because of the speakers' speed of delivery and she had difficulty in understanding their accents.

She studied for a Bachelor's degree at PSU Pattani and took basic English classes in her first year and English for Science in her second year (four courses in all) She did not, however, take any elective English courses. All the classes were taught by Thai teachers and the basic English classes consisted of classes taught by teachers as well as classes in the language laboratory. The teacher-fronted classes included more speaking in English between teachers and students and the teachers used a mixture of lecturing and communicative techniques. Her English level improved but not that much as she had no chance at that stage to use the language outside of class and her main aim was still to get a passing grade.

In the second year, the English for Science classes focused mostly on reading textbooks and journal articles as most of the textbooks they used in studying her Bachelor's degree course were in English and she needed to use a dictionary to help her to read textbooks, The English courses also covered some writing as well. In the 3rd year they began to read English journal articles and to discuss them in Thai. Also in the 3rd and 4th years she attended lectures given by a visiting lecturer from the UK. Initially she could not understand him even though he spoke slowly and she needed to read his presentation slides to follow what he was saying. When the lecturer visited the university, his wife came as well and held small social gatherings to familiarize

the students with speaking English and this was her first experience of interacting with native speakers.

After graduating she worked outside of the university for 1½ years in a manufacturing company owned by Indians where she had to use English to communicate with the management and she also used limited English in preparing reports which were mostly based on forms. At that stage speaking was still a problem but she could read well although her writing was not good.

She then returned to PSU Pattani and spent a year as a lecturer but then was awarded a scholarship to study abroad and applied to and was accepted by a university in the UK. She needed to attain a test score to submit with her application to study there so enrolled for an IELTS preparatory course at the British Council in Bangkok. However before attending the course she took an IELTS and scored the score she needed, Nevertheless she attended the course, which was a mixed test preparation and conversation class taught by an English native speaker for 3 hours per day, which lasted 2 months, and there were about 15 people in the class.

When she arrived in the UK she initially found understanding local accents a problem but eventually came to understand what people were saying. She attended a 1-month English course organized by the university before studying which helped her a lot. The course aimed to introduce students to living in an English speaking environment and to meet fellow students and also introduced students to English academic writing, including summarizing articles. However the main focus of the writing instruction at that stage was getting students to write correctly formed sentences rather than in teaching them the formal academic style. The introductory course was 4 days a week with a trip or activity on the fifth day.

When she first arrived in the UK, she lived in university accommodation, where she mixed with students from many different language backgrounds and used English as a common language. However, since there was a big Thai student community and she had Thai classmates, she did not have to speak English all the time. However, she said that the first year was the most difficult in coming to terms with English and that learning in it was initially difficult. At the university, she used English as her study language including taking notes in English in lectures, and

assignments were usually given to multi-national groups which encouraged communication in English in social situations. She said that she was never afraid to speak, trying always to take responsibility for presenting the results of group assignments even if the group included native English speakers. She had to read a lot of textbooks and journal articles in English to help her to understand the content of lectures but she found that she could understand articles based on being familiar with their format, particularly once she started her own research in the second year.

She wrote her thesis entirely in English and got some help with the English from her advisor and from a post-doc in the laboratory but her English was still not good. She also published one article from her MSc research but she only produced the data and drafted the discussion. The post-doc then produced the rest of the article, which was then reviewed and corrected by her advisor. The article was peer-reviewed and published in an international journal but she did not get involved in the publication process which was handled by her adviser

She then moved to a different university in the UK to study for a PhD and spent almost 4 years there spending altogether 6 years in the UK. Here she lived with other Thai students in a rented house so had a little less need to use English socially. Her doctoral thesis was however written in English and she had one paper published and two proceedings papers from her PhD research but because the research was conducted jointly, the article was co-authored and she didn't have to write the whole article. She had help from a post-doc with her thesis but does not think that it was well written. She said that neither of her advisers at either university she studied at took a lot of trouble to correct the English content of her theses being mainly concerned with the scientific content. Overall she said that the period in the UK was the most important in developing her English and that social situations were more important in its development.

She then went on to spend a year as a post-doc in the Netherlands where all communication at the university was in English. It was during this time that she started to write articles seriously and published three articles from her research conducted at that time. She said that it was only at this stage that she produced whole articles by herself since her previous publications had all relied heavily on input from

co-authors with all the articles in which she was named as an author during her PhD being written in sections by the whole group of researchers involved in the project. In Holland she wrote articles by reading the journals' style guides and based her writing on the format for articles she had read. But she had problems constructing good sentences and the professor she studied under there commented about her difficulty in using the English system of (definite and indefinite) articles. She said that she has a big problem with article use in English and has done so for some time, which she thinks is because there are no articles in Thai. She does not know how to fix the problem and is sometimes reluctant to make corrections to papers because she is not confident about article use.

The paper I edited was based on a PhD student's thesis. The student prepared a draft of the article which she corrected and extensively „polished“. There was a 3rd co-author but she had no input into the writing, just reviewing the article after LIZA corrected it. It was then sent to the RDO for editing and after I edited it she accepted most of the suggestions I made apart from those affecting technical terms/content. When the article was submitted the comments made by peer-reviewers related solely to technical content and not to English and the article was accepted for publication with only minor revisions to its content.

She has had around 50 articles published in English, on which she has been an author, mostly in international journals, but she has never published in Thai. She always tries first to publish in international journals and is usually successful and she said that she understands from a technical standpoint what is publishable even though she still needs to have the English content reviewed before submission. When writing articles, she writes up the results and discussion sections first then completes articles around them. She always drafts articles in English, never in Thai. She thinks it is necessary to publish in English in order to share her work and because the university requires her to publish because her annual assessment is partly based on publishing articles, as are promotions within the university. She enjoys publishing her work and likes to contribute to her field and her PhD advisees also need to publish papers so she gets involved in publishing their work in English. She does not think it is unfair that she has to write in English, just “common”. She could write in Thai if she wanted to

but that would make her work more difficult to access and the university also gives greater recognition to article published in international journals.

Her spoken English is clear, confident and quite accurate and her comprehension is at a near native level. She was often able to produce extended utterances which went beyond the immediate scope of the question asked and her speech has a „feel“ for the vernacular use of the language reflecting the fairly long period spent in English speaking environments. She was notably able to recognize her own difficulty in using the article system and to diagnose the reason behind it, even if she expressed an inability to remedy the problem.

MON

MON was born and lived in Nakhon Sri Thammarat where she studied from anubahn through to mathayom. She studied for a Bachelor's degree in PSU Hatyai then worked for a year before returning to study for a Master's degree. She then worked as a lecturer at PSU before living in the UK for 3 years because her husband was studying there for a PhD based on a government/university scholarship, and she took a second Master's degree while she was there. She then returned to work in PSU but at the time of the interview was studying for a PhD in an international program at a university in northern Thailand.

She never had the need nor opportunity to speak English when she was young as there were few foreigners in Nakhon Sri Thammarat and she didn't start learning to speak until mathayom. She learned in government schools so she never had foreign (native speaking) teachers. She began learning English at age 6 at anubahn in 1986. The teacher was Thai and they learned only the alphabet and simple vocabulary. At prathom, the emphasis was on both vocabulary and grammar and she learned to read which was important in the class, but there was little opportunity to speak or write. Her primary teacher spoke both Thai and English in class. There were about 40 students in the class and she recalls learning English for around 6 hours a week.

In mathayom the emphasis was still on grammar and reading but she recalls the teacher, who was Thai, speaking English in class although introducing language in Thai first. The teacher's English was not however perfect and could have been

improved. The teachers' methods were lecture based using prepared material and books which were mostly in English, but published in Thailand, probably by the Ministry of Education, followed by homework which the students had to complete themselves. The emphasis in the lessons was on reading and writing, but at the end of mathayom she felt that she could only read word by word but could not understand whole sentences and could not write sentences herself, a skill she only mastered by the end of her undergraduate degree. She said that she would have avoided speaking to foreigners at that stage.

She studied at PSU as an undergraduate between 1999 and 2003. In the first two years she took foundation English but took no elective English courses. She recalls the foundation courses concentrating on grammar with listening skills in the language lab but she also experienced speaking with a foreign teacher for the first time. After completing the foundation courses she realized she was weak in English but that she might need it in her career so she took a class at a language center but for only 6 weeks as it was too expensive for her to continue. At the end of her undergraduate degree she could read and understand sentences and understand grammar but not use it correctly. She was more confident about speaking and could write half an A4 page in English about herself.

She then worked for one year but didn't use English, before coming back to study for a Master's degree at PSU between 2004 and 2007, during which time she took and passed the PSU-GET. Her reading improved as a result of the need to read journal articles for her literature review. She had only limited access to native speakers during that time when listening to lectures by guest native English-speaking lecturers. Her Thai lecturers however conducted their lectures in Thai even when they were based on English material. Her thesis was also written in Thai.

When her husband was awarded a scholarship to study in the UK she followed him there and later took another Master's degree on a 1-year course completed in 2014. Altogether she lived in the UK for 3 years. At first, she attended a free English class run by a private center for foreigners for an hour a day which she did for almost a year. The methodology used was completely different from that she had experienced in Thailand and since none of the other students were Thai she was forced to speak

English. She described the experience as being difficult and it first it made her feel “small” with none of the other students being able to understand her and she not able to understand anything around her in English, such as the radio or TV. But within 4-6 months she felt more confident about using English which was helped considerably by the class.

Later, after being accepted to study at a university, she took an introductory class with a British teacher there, which aimed at helping her to develop her ability to write academic English which she said also helped her a lot. Nevertheless she found writing her thesis in English difficult and was given no assistance by the university to do so. She found that reading journal articles and learning to paraphrase them helped her academic writing and she also sought help from other Thai students particularly those studying English, one of whom read and corrected the first draft of her thesis. But eventually she had to pay a professional proof-reader to correct the English in the final draft of the thesis

By the time she returned to Thailand in 2014, she was quite confident about living in an English speaking environment and although when she arrived in the UK she didn't understand how to use different grammatical structures, by the time she left she had a better understanding. She felt that using English in daily life and for studying both contributed to her development, but overall she found social English easier to use than academic English. She rated the experience of living in the UK as the biggest factor in her present level of English although she admits that she still has problems with using English particularly with speaking fluently.

The article which I edited was based on a research project conducted with colleagues and was undertaken to fulfill the obligation as a lecturer to conduct and publish research. After the project was completed she and her colleagues wrote separate articles about aspects of the project crediting the other researchers as co-authors. In fact there were three authors named on the article that I edited of which she was named as corresponding author, and she was responsible for writing the article in English although it was based on a report of the research in Thai. She wrote the sections of the article in the sequence they appeared starting with the introduction and ending with the discussion/conclusion.

She did try to have the article accepted by an international journal but it was rejected because the subject matter was not sufficiently broad or difficult. She submitted the article to a journal in Thailand about 3 months after I corrected it having accepted almost all the amendments I proposed. The peer review process had raised only issues about the content, not the English, and was still ongoing a year later with reviews involving a turn round of about 2 months each.

This was the first article she has tried to publish in English although she has published four articles previously in Thai. She said that writing in English is more difficult and she can write only about half an A4 page every day with the need to constantly check grammar and vocabulary and to compare the style with other journal articles. She is aware of the stylistic differences between English and Thai academic writing and finds the Thai style easier to write. Nevertheless she understands the need to publish in English to gain a worldwide readership and will try to publish in English in future. She regards the need to use English in publishing work as fair because it enables everybody to understand. She rated the difficulty of publishing articles in English as 3 on a scale of 1-5. For her PhD, She must publish three papers in English as well as writing her thesis in English because she is studying in an international program. She now feels comfortable studying in English but most of the students on the course are Thai so she doesn't need to use English socially.

Her spoken English was very fluent but rather inaccurate, although overall she was able to communicate well and she was sometimes able to give extended answers which went beyond the scope of the question asked. Although she occasionally needed to check her understanding of my questions overall her comprehension was at a very high level.

NAM

NAM attended anubahn, prathom and mathayom 1-3 at a private school in Hatyai but from mathayom 4, she moved to a science program at a government school in Hatyai. She entered PSU as an undergraduate in 1986 and graduated with a Bachelor's degree. She then worked in a factory for 2 years before returning to PSU to study for a Master's degree and then worked in PSU before studying for a PhD, again at PSU. Since achieving her doctorate she has worked for seven years at PSU.

She began learning English in anubahn where she had both Thai and Foreign teachers, although later at prathom, mathayom and at PSU all her teachers were Thai. At anubahn the teaching was limited to vocabulary but at prathom there was also grammar content. The teacher was experienced as an English teacher but she recalled that she spoke mostly Thai and the children had no opportunity to speak English, with the learning being mostly conducted through written exercises. At this stage there were around 40 children in her class which studied English for 1½ hours a week using a series of books concentrating on English grammar which were written entirely in English,

Before changing schools after mathayom 3, most of her English learning was of grammar through written exercises with no development of extended writing. After mathayom 4 the emphasis of the learning changed to English in daily use although this was still largely aimed at using grammar correctly with most learning being through reading and there was little speaking or writing with the teacher again speaking mostly Thai.

At university, she took a course in English conversation in the first year as there was no foundation course at that time but students had to take a compulsory though selected English course. There were about 15 students in the class. The teacher was Thai but had a higher degree from abroad and spoke good English. The content was everyday conversation based on photocopied material and although the teacher mostly lectured about the language, the classes were conducted in English and there were opportunities for the students to use English with each other in the class. She had no further formal learning of English before graduating and said that her English was not good at that time and that she had difficulty expressing any concepts in English although she could understand English if it were spoken slowly. She commented that she had made more progress in English since graduating at Bachelor's degree level than she had made up to that point.

After she left university, at her first job, she had no need to use English, but once she decided to come back to PSU to study, she had to take an English test which she passed at the median level. Then she had to use English to read papers and also to write her thesis which was produced both in Thai and in English. To write her thesis

she produced a first draft which was submitted to the RDO who had a native speaker who reviewed the manuscript before it was finalized.

After she graduated at Master's level, in her job at PSU she needed to use English both to read papers and to write in English as well as to communicate with non-Thai academics. Because she found that her level of English was not sufficiently high, she decided to take English courses at a language center, where she studied for about 2 years. Here the lessons were with foreign teachers who spoke no Thai in class and she described them as very different from her previous learning, being more appropriate for adult learning rather than the previous concentration on grammar that she had experienced as a child. She also took every opportunity she had to speak to English speakers and also watched lectures on YouTube from universities in America to try to improve her listening.

When she studied for her PhD she had to use English to read journal papers and to develop her technical vocabulary. Since achieving her doctorate she has worked as a lecturer at PSU and she has consciously worked on developing her English using on-line resources as she perceives her level of English to be below other lecturers at PSU. She has also had the chance to attend conferences and to meet scientists whose first language is English and she believes that this has contributed a lot to her ability to use English. Although she described the overall process of improvement as slow and natural she said that progress was faster when she has had the opportunity to use English in real situations with foreign scientists.

She only began writing journal articles after she had completed her PhD and initially asked for advice from a friend and a teacher whom she respected, as well as using other people's articles as a template for her own writing. She has published three articles, only one of which is in a Scopus listed journal. She said that getting articles published in ISI rated journals is difficult but that it is easy to get articles accepted by open-access journals.

For the article which I reviewed, the first journal to which she submitted the paper before I reviewed it, rejected the article, purely on the basis of bad grammar making no comment about the technical content. She said that she had adopted most of the changes I recommended although not all as she felt that some of them were not

appropriate in a scientific context. However, The article was later rejected by another journal for being out of scope and it was only accepted by the fourth journal she submitted it to after she had changed the format of the article to comply with the journal's style and adopted a co-author. All of her articles to date have been written in English and published in overseas journals and she accepts the need to write in English as a reality for all scientific writers irrespective of their nationality. She says that her main reason for publishing articles is to share her work with others which she regards as being a responsibility of researchers.

Her spoken English is quite fluent but structurally inaccurate and at times she had difficulty expressing her meanings successfully. She has some problems with tense usage and the article system. Her comprehension is also a little poor and at several points in the conversation she had difficulty understanding quite simple questions even after several attempts at clarification.

OYLE

OYLE was born in 1979 and brought up in Surat Thani in an urban environment, where she had no exposure to English before beginning to learn at school. She studied both prathom and mathayom in Surat Thani but then moved to Bangkok to study for a Bachelor's degree then immediately took a Master's degree in an international program at a different university. Then, after a brief spell working as a research assistant with her Thai thesis advisor, she studied for a PhD in the same international program. For English, she had only Thai teachers at school, and as an undergraduate. but later attended regular English classes with native speaking teachers throughout her post-graduate studies.

She studied prathom in a private school in classes of 25-30 students. She began learning English in prathom 5 at 11 years old in 1990. The teacher was Thai and spoke mostly Thai in class. She taught vocabulary using pictures by spelling and translating words into Thai and the students had a book also with pictures in it. She learned to read and write English in prathom but didn't have very much chance to speak English nor does she remember being taught to form sentences at that time.

She moved to a government school for mathayom where she studied in a science program and was placed in the top class with about 30 other students. She learned English in the science program for 3 hours a week spread over 2 days. In mathayom 1-3, the teacher used a different methodology from that she experienced at prathom. The teacher gave the students handouts containing questions and answers which the students had to learn and then speak in pairs in open class. The students were also tested in pairs by the teacher listening to them pronounce the questions and answers. If the students didn't get the pronunciation right they were told to go away and practice more before being retested. Although the teacher tried to use English in class, OYLE doesn't remember the teacher modeling the pronunciation of the sentences, so the students had to try to work that out for themselves and she didn't always understand the meaning of what she was learning. The method did however help her to feel more confident about speaking.

In mathayom 4-6 there was a different teacher but OYLE does not remember being taught about grammar in mathayom, although she accepted that there might have been some teaching of grammar. However, she only remembers being specifically taught grammar as an undergraduate at university. At the end of mathayom, reading was her strongest skill but her writing was only at sentence level. They used an English room equipped with headphones to develop listening skills but she said that she only learnt to speak at university as an undergraduate and that at the end of mathayom her spoken English was "terrible" and she could only answer questions in single words not sentences. During mathayom 4-6 she met and talked to a US exchange student staying with one of her relatives and spoke to her in English and this was the first time that she had spoken to a foreigner. She found that she could only give short answers to questions although she was not afraid to speak to a person of her own age.

She then moved to Bangkok, where she studied for 4 years at university for a Bachelor's degree. She learned English as a core subject only for the first 2 years, being placed in a moderate group based on a test on entry to the university. The teachers were all Thai but there were separate classes for all the skills and they learned for 3 hours per week. The lessons were based on a formal, English-only

textbook and handouts prepared by the teachers who used English as the main medium for teaching, except when translating, to help students understanding. The teachers lectured about reading and structure and the students practiced listening using headsets. However they had little opportunity for speaking and she said that she spent time a lot of time learning grammar primarily to get passing grades in English.

Although she said that she had no more exposure to English in Bangkok than she had had in Surat Thani, in the 4th year as an undergraduate, she spent 2 months in Japan as an exchange student where she needed to use English to communicate. Before going she took a course with a Thai teacher to learn some Japanese and English. In Japan, she spent a month studying at a university, 2 weeks with a family and 2 weeks visiting two other universities. In this period she used English more than Japanese, using English both at the university with the lecturers and with the family who were used to accommodating English-speaking students. This experience made her realize that her English was poor and when she came to study for her Master's degree she decided to study in an English medium program to develop her English, even though this entailed changing her field of study. She said that it was only at this time that she began to take English seriously and she only learned to write English properly after finishing her Bachelor's degree. The program in which she studied for her Master's was an international program and all the lecturers were from the USA. Unlike her, some of the other students on the course had studied in international programs at high school or as undergraduates and had experience of learning in English. However all the students were required to attend a 3-month introductory course for English provided by the university and taught by a US teacher. In this course, the emphasis was on speaking and the teacher's methods were quite different from her previous experience. The teacher used real media such as the news, and an English text book. They engaged in group work for the discussion of topics as well as role-plays and everybody had to speak, including making presentations in open class. They were also taught structure and writing. She said that she felt pressured to learn when she had to speak in front of the other students because the other students spoke better English than she did and she said that she had to study very hard at that time to come to terms both with learning in English as well as in a new field. Therefore, because she did not feel that the class provided by the university was enough to bring

her English skills up to the level needed to learn in English she also took a private, one-on-one course at a language center for speaking and reading. However, overall she thought that the class at the university was more effective because it was targeted at the skills needed for her to learn in English, whereas the private course was largely based on everyday conversation. She also said that at home, she tried to create an English environment, and listened to English songs as well as watching English language movies and reading English text books and journals.

By the time that she started her main studies in English, she said that her English was still not good although her listening had improved. Her speaking was also better and improved further once they started learning, as the lecturers often called on the students to speak in class and she became confident in learning in English during the first year. However, the students were all Thai so she had no need to use English outside of the classroom. She studied English for 3 hours a week throughout her Master's degree (and also later her PhD) in a similar class to the 3-month introductory course, which included tuition in all the skills including academic writing. These classes were initially taught by the same American teacher who taught the introductory course, although the teacher changed after the first year. However, the communicative teaching style of the second teacher was similar to that of the first. Overall she views the English learning before and during her Master's degree as her most important period of learning English largely based on the work which she did herself rather than because of the classes she attended

At this time she also began reading academic journals in English and this was her first exposure to the English academic writing style since although she had used English textbooks at undergraduate level, she had not needed to read English journal articles. She had both a Thai and a US thesis adviser and the Thai thesis adviser made it her practice to always communicate in English, e.g., in e mails. OYLE had to write both her thesis proposal and her thesis in English for which her Thai adviser corrected the language content, which she found helped her to develop her own writing. Her thesis was written only in English with no first draft in Thai. She found that her writing improved a lot through reading academic journal articles as well as through the corrections made by her adviser.

After graduating with her Master's degree, she worked at the university as a research assistant with her adviser for one semester while trying to get a scholarship to study in the US, but when the scholarship was not immediately forthcoming She applied to study again at the same university for her PhD. In preparation for studying in the USA, she had to take a TOEFL so took a preparatory TOEFL writing course in Bangkok. The course was based on video learning and concentrated on the structure of sentences and common errors. She did not take a preparatory course for the main TOEFL and when she took the computer based test she scored 209 against the 213 needed. However, she decided to study in Thailand before retaking the TOEFL.

She studied in the same international program in which she had studied for her Master's degree and took the same 3-month English preparatory course as well as studying English throughout the course, once a week with the other PhD and Master's students. Again, however, the students were all Thai so English was used only in studying, not socially. For her PhD she had a German co-adviser and she spent 6 months doing research in Germany in an international program there with students from other countries, using English as the medium of communication. Here, she also used English outside the university which she found came quite naturally and she had no problem in using English socially, being confident in her English speaking by that time. She said that her confidence was based on her extensive use of English while studying in Thailand.

Before she had finished her PhD, she applied for and was accepted for a position at PSU where she has worked since 2009. However, all the faculty's programs are in Thai and she does not now regularly use English except for writing and reading journal articles. Her advisees all have to read English language journal articles but the discussions she has with her post-graduate students are always in Thai. She tries to have her PhD advisees produce their theses in English although her Master's advisees produce theirs in Thai. However, all the papers she publishes are in English and are published in international journals. For her post-graduate students, OYLE develops research projects which are then conducted under her tutelage by her students. When articles are published, her students are named as the first author with OYLE as the corresponding author. Articles by PhD students are prepared by them

but corrected by OYLE. However for her Master's advisees the students only prepare the tables and figures for the articles which OYLE then writes and submits to the journal.

The article which I reviewed was based on a PhD student's research. The student completed the laboratory work and produced the figures and tables, then produced a draft of the article which OYLE then heavily edited because there were problems with both the content and the English. The draft paper was finally reviewed by the third author who was from a different faculty, then submitted to the RDO, at which time I proof-read it. OYLE then dealt with my suggestions on her own accepting most of them before finalizing the paper and submitting it to a US-based journal. The journal sent the article to three peer-reviewers who took about 2 months to respond. OYLE and her student worked together to deal with the reviewers' comments which were all about the content not the English and the paper was accepted on resubmission after only two rounds of peer-review.

Altogether, she has published about 12 articles on which she has been named as corresponding author, all of which have been written in English and published in international journals. These include one based on her Master's research and three from her PhD research. She has contributed to only one article published in Thai as a co-author with her Master's/PhD adviser but thinks that the procedure for publishing in Thai and English articles in her field is the same.

Her main reason for publishing work in English is to share with other researchers and although she has an obligation to publish articles in her position at the university she does not regard this as a major reason for publishing. She thinks that publishing in English is not only a useful channel for sharing research but that English is also important as a means of communication with other people in her field and also provides better opportunities for those who can use it. She views publishing results as the fundamental mission of researchers although she thinks that publishing in English is challenging and rated the difficulty as 3 on a scale of 0-5. She does not think that it is any easier to publish scientific articles than to publish articles in the social sciences and she thinks that nowadays it is equally difficult to have work published in international journals in all fields.

Her spoken English is very fluent and natural, employing fillers appropriately and rarely encountering difficulty in conveying meaning using appropriate vocabulary, and she had no difficulty in conveying meaning or in comprehension.

PAT

PAT was born in Lopburi where he began his education but he later moved to Bangkok. He only had formal classes in English at school, beginning in prathom 5, and throughout the mathayom years, and as an undergraduate, and he never took English classes outside of formal education. He learned English with Thai teachers for 10 years during his formal education and never studied at all with a native speaker until he studied at Master's level in Bangkok, where one of his tutors was a native speaker. He has since published a large number of articles all of which have been written in English and he has never published articles in Thai. He said that all the improvements in his English were achieved by his own efforts and were the result of using English in his education and in his subsequent career as a lecturer. After completing his PhD in 2005, he worked at PSU for 9 years but moved to a university in Bangkok in 2015 where he is a lecturer.

He started learning English in 1989 in prathom 5 in a government school in Lopburi in a class of 20-25 at the age of 10. He had only experienced a little English on radio and television before beginning learning at prathom 5 and had had no experience of reading or writing English before starting to learn. He doesn't remember much about the lessons but he remembers that they consisted mostly of learning vocabulary. The English classes in prathom occupied 2 or 3 hours a week and the teacher was Thai and taught English using Thai, although he spoke good English. The students however, did not speak English. PAT learned to write the alphabet at prathom and the students had a book in which they sometimes wrote but he said that he could not write English well at prathom.

For mathayom he moved to study in Bangkok in a government school where he studied in a science stream with around 50 students per class in mathayom 1-3. In the English classes, which again occupied 3 hours a week, the students were taught grammar and learned to write simple sentences including the use of tenses. The teacher used a book to teach although he also had the students listen to English radio

broadcasts, which PAT could not understand, as the English was spoken at natural speed. The teacher spoke more English at mathayom than in prathom and sometimes used English to explain the language but PAT said that he hated English in mathayom because he found it difficult. However, he was able to understand English when reading it in the books they used which were all in English. He said that the teacher read from the book and the students repeated what the teacher said and also translated it into Thai for them. The teacher also set written homework although PAT found writing difficult at that stage. He said that he learned to read by himself by reading English books and translating English to Thai while reading using a Thai-English dictionary.

He only experienced writing at paragraph length in mathayom 4-6 where he studied in a science program at the same school as at mathayom 1-3. The English classes again lasted 3 hours a week and there were about 40 students in the classes. They used a language laboratory in mathayom 4-6 but he could only understand some words which he heard, not whole sentences and could not speak English although he could read it. The teacher also used simple magazines to develop the students' reading skills as well as using a textbook and the radio. He said that his main reason for learning English, and grammar in particular was because he needed it to pass the university entrance examination. He summed up his attitude to English as being lazy and not industrious.

He then studied for 2½ years for a Bachelor's degree in a university in Bangkok where he studied only foundation English courses in the first and second years, in classes which were broadly similar to those he had experienced in mathayom. The teachers were again Thai (he had Thai teachers throughout his formal education from prathom to undergraduate level) and they lectured and taught grammar, reading and listening in classes of about 30 students for 3 hours per week, sometimes using a language laboratory. They used a book and sometimes newspapers. He also had to read English journal articles at undergraduate level and used an English textbook for one class. He found journal articles difficult in the beginning and understood only some parts of what he read.

After graduating in 1999 he enrolled at a different university in Bangkok for a Master's degree. Although there were no English classes and the program was taught mostly in Thai, he wrote his Master's thesis in English and one of the lecturers he studied under was a native speaker of English. He made PAT write his laboratory reports in English and helped him with his English by writing in English on the work-board.

At Master's level PAT used English text books and read journal articles as well as making presentations in English at internal seminars. To help him with writing his thesis, he read other people's theses and followed them to write his own. He wrote his Master's thesis only in English with no initial Thai version and the native speaker teacher helped him by rewriting and correcting his English. After completing his research for his Master's, he presented his work at a conference and wrote a proceedings paper, and then published his first article based on the research in a US peer-reviewed journal.

After he graduated, he then continued to conduct research at the same university, where he studied for a further 4 years for a PhD in the same field and program, with the same advisors as for his Master's. At this stage, he found English easier and his English was much better at PhD level. When he completed his PhD research, he published three articles in international journals as a requirement of graduating.

The article I edited was co-authored by an undergraduate student who helped with the research project. The undergraduate wrote only a project report in Thai and PAT wrote the article on his own in English without any input from the undergraduate. He used previous articles as a guide to the format of the article. After I reviewed the article, PAT repeated the experiment and also revised the content before submitting the article to the journal. There were three or four peer-reviewers and comments were made by them about both the technical content and the English. I re-reviewed the article after it had been revised following the peer reviewers' comments about the English. Altogether the article was subjected to three rounds of peer-review and each time there were comments made both about the technical and language

content. The article took about 1 year to be published and was published in an English journal.

PAT has published around 55-60 articles, all in English mostly between 2006 and 2017. He has never published articles in Thai. Nevertheless he still thinks it is difficult to publish articles, which are accepted about 50% of the time depending on the quality of the research and its originality, and he rated the difficulty as 4 on a scale of 0-5. The comments made by reviewers often relate to both the technical content and to the (English) language used. The main difficulties he mentioned were the need to read a lot of other articles and problems with vocabulary and writing complex sentences. He thinks that the current difficulty is also a function of the number of people publishing and the need for research to have originality. He thinks that the difficulty in publishing is general in all fields, not just in his area.

He publishes in English because he wants to share his work and be cited by other authors and because the university where he now works in Bangkok also requires him to publish work in English in international journals. He thinks that writing in Thai and English are both difficult but that writing about his field in Thai is particularly difficult because of a lack of technical terms. Nevertheless he thinks that writing in English is overall more difficult. Despite this he thinks that having to publish in English rather than Thai is fair.

He has travelled to both Taiwan and India in connection with his work where he had to use both spoken and written English. He did not find communicating in English in India difficult. He uses English in Thailand only to write and to read journal articles although he sometimes teaches laboratory classes in English. He presents his work at seminars in Thailand between one and three times a year but usually in Thai.

His spoken English was quite poor and often showed a marked tendency towards a “telegraphic” style, and he frequently confined himself to single word or short answers. He never gave extended answers to questions and had some difficulty both in understanding questions and in conveying his own meaning. It was notable that the representative sample of 998 words analyzed from the interview represented more than half the total words which he spoke during the interview with much of the

balance being made up of back-channeling and single word answers, as well as other speech features and the sample could only be extracted by concentrating on language which made an attempt at forming structured utterances.

QUIN

QUIN was born in Trang province in 1977 in a rural area where she attended a government school up to prathom 4. She then moved to a private school in Trang itself where she began learning English in 1988 and she continued to learn in Trang at another private school in mathayom 1 to 3 before transferring back to a government school in mathayom 4 to 6 where she learned in a math and science stream. She studied as an undergraduate at a university in Bangkok, graduating in 2000, then went on to study for a master's degree at a different Bangkok university from where she graduated in 2003. She then worked at PSU in Trang for around 6 years before studying for a PhD in Taiwan, graduating in 2014. She now works as a lecturer in PSU's Trang Campus.

She attended prathom 1 to 4 in a government school near her home in a rural area in Trang province but had no contact with English before starting to learn at age 11 in prathom 5, when she transferred to a private Catholic school in Trang, where she had to begin learning English from the alphabet upwards. There were a small number of children like her who had moved schools who also started English only in prathom 5, but most of the other children in the class she joined had already been learning since prathom 1 or even anubahn, so initially she found it difficult. But later she started to enjoy the classes because the teacher made the learning fun and eventually she surpassed the other children in the class in English without ever having to take extra classes for English to help her to catch up with them. She thinks that she became good at English at that time because she tried hard. The teacher was Thai and the teaching method was centered on using the board and a textbook, which QUIN said she liked. There was also a competition among the children who were awarded 'stars' for saying English words and their meaning to any teacher in the school. The children, however, had little opportunity to speak and the emphasis was on learning vocabulary and they also learned simple grammar. The classes were of 30-40 children

and they learned English for about the same number of hours each week as other subjects.

In 1990 she moved to a different private school in Trang to study mathayom 1-3, which she said was very focused on English and they tried to force the students to learn. As well as taking compulsory classes, the children were encouraged to come in early and spend time learning English vocabulary before regular lessons. At mathayom there was more emphasis on learning grammar largely for passing examinations. The main skill used was reading and being able to answer questions/exercises in writing but not beyond the word/sentence level, and again, the children had little opportunity to speak in class. The teachers taught in Thai and did not use English and the teaching style she experienced was mainly lecturing in Thai throughout prathom and mathayom. She recalls having an extra English class for one semester but she does not remember any of the classes being focused on particular skills.

Because she lived in a rural area, during the time she studied in mathayom 1-3 she was unable to not take extra classes after formal school as did some of her classmates who lived in the town and as a result she felt that she was behind them in English. She also said that she felt under pressure in mathayom 1-3 and worried about her performance in English and that the teacher did not make the learning enjoyable as the teacher in prathom had done, which did not help her to enjoy English.

She moved to a government school for mathayom 4-6, where she learned in a science and mathematics stream. Nevertheless she continued to study English and although she thinks that she did not learn English every day, she learned for an average of 3 hours per week. The number of hours formally studying English did not change between mathayom 1-3 and 4-6, the only difference was that at mathayom 1-3 the school had made the students spend an extra hour a day learning vocabulary before formal classes started. The teaching method again involved mostly using the board and a textbook and the only speaking was based on practicing sentences by reading from the book. There were no communicative activities like role plays or group/pair work and the only project she remembers involved writing suffixes and prefixes on pieces of paper, which at the time she thought was useless. However, her

experience of learning at mathayom 1-3 gave her an advantage in English compared to students from other (government) schools and throughout mathayom 4-6, she got A or B+ grades in English. She said that she felt that she was better at English compared to her classmates who came from schools that had not focused on English, although she, like them, had only started learning at prathom 5. Throughout mathayom her class size averaged around 50 students and the emphasis throughout the whole of her school learning of English was on reading and doing written exercises with little opportunity for speaking.

At the end of mathayom she does not think that she could have written a paragraph describing herself and although she saw the *Student Weekly* at school she did not have the patience to read it and would only have been able to read at paragraph level with the aid of a dictionary. Her speaking was at a very basic level and she could not have conducted a conversation in English.

She then went on to study at a university in Bangkok, where she again found English difficult. She took compulsory basic English classes in the first year and took one elective English course with a friend in the second year. The basic English course was taught by a Thai teacher and though none of the English classes she took were taught by native speakers, in the 3rd and 4th years she took one or two mathematics classes taught by an American teacher. The basic classes in the first year gave more attention to listening than she had experienced at mathayom but the learning was still based on answering comprehension questions and the lessons were still mainly based on reading and writing. The elective course in the 2nd year was a Business English class, where the teacher made more effort to get students to speak and encouraged them to present in English to the whole class. However B. was unable to do that even though some of her friends were capable of it because they had had different learning experiences which had given them better English skills. However none of the learning at undergraduate level was focused on equipping the students with the ability to use English later in their education, it simply followed a standard curriculum.

In the mathematics class taught by an American teacher the language used was very restricted. She coped by preparing for lessons by reading first in the textbook and reviewing the material after the lessons. The textbook was in English and she

concentrated on the equations and ignored language-dense sections dealing with theory and introducing new material. She thinks that learning in English was difficult but she was able to cope with it by trying hard. However she does not think that learning in English significantly helped her English ability at that stage. At the end of her undergraduate years in 2003, her English was at a 'medium' level but she could not have used it to have a 'deep' conversation with a native speaker because she was not familiar with English accents and if conversing in English with a foreigner, she would have needed to have sought a lot of clarification. Her reading skill had improved but was still not satisfactory as she later discovered when studying for her PhD. She had no experience of extended writing in English at either undergraduate or Master's degree level and she never wrote in English at essay level until she was preparing to take an English test prior to studying abroad.

She went straight on to study for a Master's degree at a different university in Bangkok. The classes were taught in Thai but used English textbooks which she found very difficult because of the need to understand technical terms, and the style of writing. The university did not offer any English classes to help the students with the need to use English so the students sought and obtained similar Thai textbooks to get over the difficulty of understanding the English textbooks. The only use of English was for reading textbooks and journal articles and she wrote her thesis in Thai, although with an English abstract, but did not publish her research as it was not required at that time.

She then worked as a lecturer in PSU Trang for 5-6 years and her only exposure to English at that time was when she was preparing to go to study abroad when she started to learn by herself by reading a grammar book and listening to English. She also decided to take examination preparation courses and initially took a TOEFL course at a language school in Hatyai but did not complete it as she found that traveling to Hatyai was difficult and she did not find the class to be enjoyable. She therefore took two, 1-month intensive English courses at a language school in Bangkok to prepare for IELTS studying for 3 hours a day for a total of 100-120 hours. The teachers were all native speakers and at first she found them difficult to understand although it was easier in the second course. They used a variety of

teaching techniques including communicative paired activities aimed at the IELTS spoken test. She said that the courses were mainly useful in giving her direction for learning but the main work to develop her ability was done by her own effort and practice and she used to get up early every day and complete a practice section of the IELTS test. Her only exposure to native speakers was in the classes in Bangkok with a very limited experience of speaking to foreign teachers in the Trang campus. Nevertheless, she scored 6 on the IELTS test before going to study in Taiwan but even then she found that her English was not really good enough when she arrived there.

In Taiwan, she studied on an international program for a PhD and the whole program was in English. The teachers were mostly Chinese and Japanese but they taught only in English from English materials. In the first 2 years she did coursework and all her English skills developed during this time as she was required to learn, present and discuss in English in class, which she initially found difficult. But she lived on campus and used English exclusively to communicate within the university which was the first experience she had had of using English in real life, including communicating with other students, many of whom were from Indonesia and spoke better English than she did. Outside of the university she used a mixture of English, basic Chinese and body language to communicate.

Although she began research in the first year she concentrated on it from the 3rd year onwards, altogether spending 4 years and 9 months studying and researching in Taiwan. The university offered English classes but she decided that she could best learn by practicing herself, which she did by writing a journal in English while she was there as a way of developing her ability to write in English. She wrote her thesis in English and initially, her advisor chided her for her poor written English, but helped her to correct it and she learned a lot from that experience. She also published four articles from her research, and presented at two conferences writing one proceedings paper, all of which were in English and were peer-reviewed. She wrote the first drafts of the articles which her advisor then edited but they were then sent for professional proof-reading before being submitted to the journals. She completed her PhD in 2014 and then returned to her position as a lecturer in Trang.

She thinks that the main factor in her success in learning English has been her own efforts in practicing and learning by doing. She also found the experience of working directly with her advisor in editing her writing very useful as he was able to explain why the English was wrong. Apart from the examination preparation courses she has never taken classes outside of her formal education to help her with English but she has used movies and other listening media in English to help her to learn. She still finds it challenging to read extended passages in English and said that she finds it hard to express her ideas in English and also finds linking paragraphs together difficult as well as writing structurally correct English in an academic style and selecting the correct words.

The paper I edited was written by her in English and her co-author, who is a lecturer in PSU Pattani, did not contribute at all to the actual writing of the article. It was the first written account of the research it covered. She wrote the article starting with the introduction as she knew and had in mind the results she would be describing. When she finished writing the article, her co-author reviewed and agreed it before she sent to the RDO for editing. When she got the article back from the RDO she read the „clean“ version and accepted all the suggestions that did not seem to change or affect her meanings although in some cases she was not sure whether her meaning was affected as she did not understand the English suggested. However, overall she accepted about 90% of the suggestions. The article was then submitted to a journal in Thailand who required her to reformat the article before sending it out for peer review, which she found strange as they did not actually agree to publish the article before doing so, which she thinks could mean that she was wasting her time if they then rejected the article.

Altogether she has had five articles published in English having had one more article published since her PhD, plus the one proceedings paper. When submitting previous articles she has had comments about both the language and academic content of them even where they have already been submitted for proof-reading. For the articles written during her PhD, her professor dealt with the peer-reviewer's comments about the English after she had dealt with the comments about the academic content. She has never published articles in Thai. She said that in her field, her source material

is in English and she has learnt in English so she prefers to write in English despite finding it difficult to express her ideas in English. She thinks that the difficulty of getting articles published in English which she rated as 5 on a scale of 0-5 depends on the journal and her recent experience suggests that Thai journals are at least as demanding as international journals. She thinks that writing and publishing in English is a necessary challenge if she wants to prove herself in her career and her primary reason for writing in English is that her research projects require her to publish the results in English.

Her spoken English is quite fluent although rather basic and a little inaccurate. She used frequent fillers to give her time to search for words to express meanings and asked a fairly high number of clarifying questions if she was not clear of the meaning of questions addressed to her. Nevertheless she was not at all hesitant or shy and was able to make some extended utterances, albeit that the accuracy of the language tended to suffer when she did so and her spoken English overall was quite effective.

ROB

ROB was born and brought up in Phang Nga where he attended prathom and lower mathayom. He then attended a vocational college in Ratchaburi before studying for a Bachelor's degree at an open university and then a Master's at PSU's Pattani Campus. After a period working there he was awarded a government scholarship and spent 4 years in the UK studying for a PhD

He started learning English at age 10 in prathom 5 in 1988 in classes with 35-40 students learning for about 2 hours every week. Even though his mother was an English teacher she only rarely used English and he had very little exposure to English before starting to learn in school. He could neither read nor write English and had to learn the alphabet in prathom 5. He said that at that time, he hated English and found it boring and was never given any idea of why he had to learn it. His teacher was Thai and spoke mostly Thai in class. The students learned from a book that the teacher bought specially for them and for which the children had to pay. The book was all in English and the teacher used it by making the children read sentences from it and then doing exercises. Although he could ask his mother for help if he had a problem, by the end of prathom, he could only understand simple sentences.

He continued to learn in Phang Nga for mathayom 1-3 although at a different school. He recalls no change in the approach to teaching English, which was still based on reading from a book and doing exercises in classes of 35-40 students occupying 2 hours a week. The teachers focused on grammar because that was what was needed to pass examinations. They explained the language only in Thai, and he often had to use a bilingual dictionary to find the meaning of words. The students were not encouraged to speak English and had no confidence to do so. There was however a room equipped with headsets where they listened to cassettes of English and then answered questions on what they had heard although at that stage he did not find that helpful and his listening skills were poor at that time. Writing was used only to complete exercises and there was no paragraph or essay length writing. He remembered that there were some tourists in Phang Nga in those days but his English was too poor for him to interact with them although he remembers hearing his mother speaking English to some foreigners and being impressed by her ability.

After mathayom 3, ROB attended a vocational college in Ratchaburi from 1992 to 1997. He was unable to remember anything about the English classes at the vocational college although he thinks that English was part of the curriculum, but he thought that his English had deteriorated during that time. After 3 years, he then enrolled to study for a Bachelor's degree at an open university. He studied two English courses during that time which were taught by television in a 4-storey building to large numbers of students. The courses taught grammar and reading techniques and that was the only exposure he had to English as an undergraduate, as all other courses were taught in Thai from Thai language material. Although he said that he was a good student at university and did well in his major, his English was very poor when he graduated. He thinks he could probably have managed to speak English as well as reading and writing it, but he had no confidence and could only understand material about his subject because he knew the technical terms used, although he did not understand everything.

After graduating in 2000, he then went straight on to study for a Master's degree at PSU Pattani and it was only at that stage of his education that he began to seriously try to learn English because he found that he had to read English textbooks,

even though most courses were conducted in Thai and all the lecturers were Thai. In the first semester there was a compulsory English course which was taught by a Thai teacher and concentrated on reading and translating English into Thai as well as on grammar. The course did not cover English academic writing and although he found the course helpful. He found that in order to understand the material from which he was learning he had to get up early every day to read before attending classes and used an electronic dictionary to find the meaning of words. He realized that his English skills were lower than those of other students so he had to study hard to keep up. He got some help with English from a fellow student who although Thai, had studied in India and he said that he found that being behind other people motivated him to learn English. At this stage they also had to read English journal articles very often, which was ROB's first experience of academic writing. Nevertheless, his thesis was written in Thai and he did not publish his research as an article but presented it at a seminar in Thai in PSU Hatyai, for which he wrote a proceedings paper, which although in Thai, had an English abstract.

After graduating at master's level in 2003 he became a lecturer at PSU and worked there for 2 1/2 - 3 years before gaining a scholarship and going to study in the UK for his PhD. During that period, he used English material to prepare his lectures but delivered the lectures in Thai. He was not obliged to publish material by the university at that time but he managed to publish one article in English which was the first time he had written anything in academic English. The paper took him 2-3 months to write in English and was based on reading other articles and adapting their sentences. He also had some help from his mentor at the faculty who edited the English in the first draft of the manuscript. The article was accepted for publication by a good European journal.

Before going to study for his PhD in the UK he used BBC audio material downloaded from the Internet to develop his listening skills and as he had to take a TOEFL he studied English very hard for 3 months. All his preparation for the test was carried out personally using a TOEFL preparation book which he found very useful and he achieved a score of 550 on the paper-based test at the first time of taking it. His writing score was quite low and he had some difficulty with the listening section

but he got a high mark from the grammar and reading sections of the test. However, even though he had a satisfactory TOEFL score he decided to take a university-run English preparatory course which lasted 1½ months and was conducted by the university's English Center before starting his PhD. The course was very intensive and he had to get up early every day to prepare for it and to complete assignments. He learned in classes of around ten students who were from different fields, taught by one British teacher who concentrated on speaking and writing, including academic English and presentation skills. He studied every day from 9 a.m. to 3 p.m. and the students were encouraged to speak on diverse topics as a way of developing their confidence. They also did regular writing assignments and their writing was checked, and feedback and suggestions were given one-on-one. At the end of the course they were also given help with writing their research proposal. He found the course to be very helpful.

After a brief spell living in university accommodation, He moved into rented accommodation as a paying guest living in a house with other students from different countries whose English he found was better than his, but with whom he had to use English to communicate. He improved his English by reading books given to him by his landlady and by watching TV which improved his listening skills. In the lectures at the university, he used a voice recorder to record the lectures and then listened to them until he understood most of the content. He had a particular problem understanding one Australian lecturer because of his accent and his speed of delivery. He had to deliver verbal reports monthly to his research group which included both British and foreign students and the British students helped the foreign students with their written work. His thesis was written in English based on monthly reports which were written throughout the course although he got help from a post-doc in his research group in producing his thesis for which he had to pay. Although publication was not compulsory, he had two articles published about his PhD research in good journals. The articles were written in English and were adapted from the content of his thesis.

He lived in the UK for 4 years before graduating in 2011 and made local friends while he was there. He feels that it was during this period that his English

developed most and the biggest factor in this was living in an English speaking environment, although the combination of social English and learning in English was important and he thinks learning from a native speaking teacher was also important. Since returning from the UK he has resumed work at PSU Pattani where he must serve a period double that spent in the UK in order to fulfill the conditions of his scholarship.

The article I edited was based on a project conducted in PSU Pattani after his return from the UK. Of the three authors credited, one was ROB's mentor who had no active role in the project or the article and the third author was a student who did the laboratory work but had no role in writing the article which was written in English by ROB. He always writes directly in English and thinks that writing in Thai and translating to English takes too much time. For this article, the first stage was a grant report in English with the article being adapted from the grant report. The article was then edited by a European lecturer prior to being submitted to the RDO. Most of the changes I suggested were accepted but the article was substantially changed after submission to the journal because of the reviewers' comments which related purely to the technical/academic content. The changes necessary were carried out by ROB and no one else checked it again before resubmission. The article was then accepted after the second submission.

He has published seven articles in English journals but has never published articles in Thai and thinks that writing in an academic context in Thai is quite difficult because there are no consistent guidelines. His experience of the time taken by journals to respond to articles is that it varies according to the quality of the journal with better journals responding more quickly. But the government is placing pressure on universities to publish work and based on the provision of funding, researchers have to commit to publishing articles. Therefore the system is forcing publication based on grant conditions and the university also requires him to publish at least one paper per year to maximize his earnings, and that is his main reason for publishing. He does not view sharing his work with others as a motive. Nevertheless he thinks it is fair to have to write in English as a means of sharing work with other researchers and thereby being able to benefit from being able to read the work of others.

ROB's Spoken English is very fluent and natural, and he rarely encountered difficulty in conveying meaning using appropriate vocabulary. He also had no difficulty in comprehension. Since he had identified in the interview that the manuscript I edited had already been edited by another non-Thai (although not a native speaker) a second paper was analyzed in order to establish a true picture of his own writing skill. However, the second paper analyzed, which had not been pre-checked, produced a very closely correlated outcome (overall codes: $r = 0.96$), so it appears that the prior editing had had very little effect.

SAM

SAM was born on an island off Trang where he attended prathom, then moved to mainland Trang for mathayom. He studied at PSU Hatyai as an undergraduate then went on immediately to do a PhD there, spending one year doing research in Holland towards the end of the 5 year course. After graduating he also undertook a 2-year program of postdoctoral research in Germany, before taking up his present position as a lecturer in PSU Hatyai although he spends most of his timer doing research.

He started learning English at age 11 in 1990 in prathom 5, which he studied in a government school on the island where he was brought up. The island had no television and there were no tourists so he had no previous experience of English. They learned the alphabet and vocabulary and also began learning grammar. The lessons were based on a book from the MoE which was all in English. The teacher was Thai and spoke mostly Thai with the students only speaking English when repeating after the teacher. There were around 20 students in the class and they learned English for 3 hours a week.

He learned in mathayom 1-6 in a school on the mainland in Trang and learned English throughout in classes of around 50 students. In mathayom 1-3, the classes were split into different skills with different Thai teachers for different skills. For conversation the teachers used role plays and the students constructed dialogues using a book and they sometimes worked together in groups. Writing was used mostly as a way of teaching correct grammar and only at sentence level, but they were taught reading techniques, such as reading for the main idea. They learned for a lot more hours than at prathom but the teachers spoke mostly Thai to the students. At

mathayom, SAM said that he realized that English was important as a way of communicating with non-Thai people but he still had no experience of English outside of school at that time. He learned in a science stream in mathayom 4-6, but the English class frequency was still high. The classes in mathayom 4-6 were more difficult than in mathayom 1-3 but the methods and content of the English lessons were the same. However, the school had one native speaking English teacher who taught conversation and also used songs in his lessons, and with whom they learned once a week, but SAM could only understand some of what that teacher said. Most English classes were spent listening to the teacher and when group work was used the students often spoke Thai instead of English. Sometimes the teacher gave them newspapers to read but he found the vocabulary in the newspapers difficult unless it was related to science which he could understand. Most of what he learned at mathayom was vocabulary and grammar although he said that he didn't really master grammar in mathayom. At the end of mathayom he did not think that he could have spoken to or understood a foreigner at that time if he had met one.

He then studied for 4 years as an undergraduate at PSU Hatyai. In the first year, he studied foundation English which was taught by a Thai teacher who spoke about 90% English in class using more technology for language learning than at mathayom including a language laboratory. He thought English was important so he took elective English courses every semester. The elective courses which he took were mostly communication (conversation) courses, and he took no writing courses at that time. The conversation classes required the students to speak and used techniques such as dialogue builds and role plays with students having more opportunity to speak, and the reading classes used techniques such as reading for the main idea. The elective courses were taught by both native speaker and Thai teachers with the native speaking teachers stressing communication and the Thai teachers focusing on skills. He attended an English camp in Phuket where the students had to interview foreigners and generally had more chance to speak English, which made him more confident.

His attitude that English was important was a result of his need to understand English for learning about his subject at PSU where he had to read English text books and journal articles, and there were seminar classes where students read articles in

English journals then presented them in Thai. He studied from both Thai and English books, and his method was to read about the subject matter first in Thai then to read about it in English when he had some understanding of it. At first he found journal articles difficult but once he got used to the vocabulary used they became easier to understand. At the end of his undergraduate degree he could communicate with foreigners and understand them and he could read and understand journal articles but could not write at the same level.

He went on immediately to study in a 5-year PhD program at PSU Hatyai, where although there were no formal English classes, his supervisor encouraged and helped him to learn English by providing reading material, and he attended weekly 2-hour English sessions with a native speaker. The sessions were voluntary and concentrated on communication using communicative techniques including reading newspaper articles and discussing them. Later, he also attended a one-semester writing course run by the Graduate School, at the Liberal Arts faculty, which was taught by a teacher from that faculty. To teach writing the teacher both lectured and corrected the students' writings. The classes were held on Saturdays and Sundays and lasted 3 or 4 hours each day although they were not held every week. The main aim was to equip the students to pass the PSU academic writing test and the course was effective in enabling him to pass the PSU GET and also in teaching him how to construct English complex sentences, although he cannot now remember all that was taught. Overall he feels that the most important period in the development of his English was while studying in Thailand for his PhD because of the influence of his supervisor

He studied abroad in the Netherlands doing research for 1 year during his PhD when he used English to communicate particularly at the university. He had no language preparation for going to the Netherlands but found it quite easy to communicate using English there, although he found that some Dutch people outside of the university would not speak English to foreigners. The experience was very helpful in developing his English because it forced him to speak which he did not find difficult.

His research for his PhD thesis was conducted in Thailand but he wrote his PhD thesis in English. He had already had experience of writing academic English before he wrote his thesis as he had already written and published journal articles at that stage, so he didn't find writing his thesis difficult and used other people's articles as a template for his own writing, maintaining the structure but changing the words. Altogether, he published around ten articles based on the work done for his PhD including the research in the Netherlands. All the articles were written by adapting other peoples articles as the basis for his own and later he was able to adapt his own articles when writing others. After graduating, he was granted a scholarship and spent 2 year studying as a post-doc in Germany. He learned some German which he used outside of the university but in the university he communicated with his supervisors in English and also wrote articles in English based on his research.

The article I edited has been submitted to a journal overseas and had already been peer-reviewed and was then being revised as required by the peer reviewers. Before submitting it he adopted all the changes I suggested and there were no comments made about the English language content, only about the content. He has published about 15 articles in total and thinks that writing in English takes him more time than, for example, German speakers and generally he thinks that it is difficult for Thai academics to publish in English. Each article he writes takes him about 3 months to prepare including reading and understanding related literature. But the actual writing is not a problem because the text can be adapted from previous articles, although he still finds some problems with using technical English. He also uses Google to search for text concordances for ways to express his ideas.

He thinks that some journal editors apply different criteria to articles from writers from developing countries possibly because they do not think the research methods are as rigorous as in developed countries. He has had articles rejected in the past including for poor English particularly if the article has not been checked by a native speaker. He has also published articles in Thai and thinks that the process is the same although it can take a long time to get articles accepted. However, he said that dealing with reviewers' comments in Thai is easier as he immediately understands

what they mean whereas he may have to seek help to understand reviewers' comments in English.

He first published in English because of the requirements for graduating at PhD level but his main reason for publishing in English now is to be able to share his work with other people outside of Thailand. He thinks that having to write in English to share his work is fair. He is also required to publish work because of the university/faculty policy although he can publish in either Thai or English. However, he gets higher credits for work published in English and articles in English are also given more consideration in deciding promotions. Only 20% of his work is lecturing with the balance being research based.

SAM's spoken English is very fluent and his comprehension is very good and he rarely encountered difficulty in conveying meaning using appropriate vocabulary.

TOM

TOM was born in Phatthalung where he attended both prathom and mathayom schools. He described his prathom school as being a wat school in an urban environment. At mathayom he moved to another school in Phatthalung which he said was the biggest school in Phatthalung at that time. He entered PSU as an undergraduate in 1990 and after graduating, worked for 3 years before taking a Master's degree at a university in Bangkok, graduating in 2000, after which he worked as a teacher at another Thai university for 2 years. He took a PhD in a different university in Bangkok, graduating in 2006 following which he took up a post as a lecturer at PSU Hatyai.

He said that he had no experience of English before he began learning it in prathom and did not really begin to understand it until he studied for his Bachelor's degree, nor did he have any foreign friends until he studied at PhD level. English classes for him began at age 11 in prathom 5 with a Thai teacher who taught simple vocabulary and easy speaking as might be used to greet a foreigner. TOM learned to both read & write in prathom but said that he only spoke English when asked to do so by the teacher who spoke both Thai and English in class. The teacher was an experienced English teacher who was very qualified to teach them. They learned for 2

hours per week and they had a book which contained both English and Thai explanations.

TOM then moved to a bigger school in Phatthalung for mathayom where at mathayom 1 the students were graded by their English ability and he was placed in the lowest class of 12 in his year. The English classes in mathayom were similar to those at prathom but the students were given more opportunity to practice the language. The emphasis was on reading and grammar based on a book which explained English grammar in Thai. Later TOM compared the explanations in this Thai book to the Oxford Practice Grammar, which he used for self-study when studying at Master's level, and found that its description of English grammar was not accurate, which he said must have been very confusing for the students, who only learned language structure in order to answer tests without learning the purpose of the language. He said that the teacher did try to get the students to speak and there was actually little chance to do so with the students only speaking when the teacher asked them to. The teacher used both Thai and English in class and TOM was able to understand it when the teacher explained the meaning of vocabulary in English. They practiced reading every week but there was little chance to write with most writing being linked to learning vocabulary. They learned throughout mathayom in classes of 40-50 students for 3 hours per week.

Overall he commented that he found English difficult at this stage of his education. However he said that generally, he improved himself a lot between mathayom 3 and mathayom 4 & 5 to the extent that he was able to take and pass the university entrance examination in mathayom 5, so did not study mathayom 6, going straight to PSU in 1990 where he studied for a Bachelor's degree. He took foundation English for two semesters in his first year but then took no other English classes as an undergraduate. Nevertheless he had to read text books in English, which he commented was mainly necessary in order to pass tests and he continued to have difficulty in understanding English and had to ask friends for help when he could not understand what he was reading. He said that the foundation course classes were similar to the classes at mathayom although the vocabulary he learned was more

advanced. The teachers were all Thai and in addition to regular classes they used the language laboratory which he did not find helpful at that stage.

After graduating he worked at a cement factory for 3 years where he had his first experience of speaking to foreigners working alongside English speaking experts for periods of 3 or 4 months at a time. To help him to prepare for this, his manager gave him English technical manuals to read and this experience helped him with both his ability to read and speak English. However, he said that the learning he had undertaken in school and at university as an undergraduate was helpful in enabling him to understand the main structure of English and that this basic knowledge was important once he had the chance to use the language in a real situation, and that his English improved quickly with actual use.

In 1997, he entered a university in Bangkok where he studied for a Master's degree. There was no pre-entry English requirement and there were no English classes nor any requirement for his research to be published in English. The course was conducted entirely in Thai, even though all the books used were in English. In order to help him to understand the books, he learned by himself, using the Oxford Practice Grammar which he highlighted as being very important in developing his knowledge of English structure, and a Cambridge Dictionary to extend his vocabulary. He also watched English language programs on cable TV, notably the Discovery Channel and English movies to improve his English. He also undertook work translating undergraduate science textbooks into English, which he said was difficult but very valuable in developing his own English ability.

After graduating in 2000, he worked as a university lecturer in a university outside of Bangkok before enrolling at a different university in Bangkok to study for his PhD on an international program where all the courses were taught in English. In the first semester, the university provided an academic writing course taught by a native speaker for 3 hours each week. However although he had experience of reading journal articles from his Master's degree, he recognized that the course the university provided was insufficient to prepare him to write his thesis and journal articles in English as he had had no experience of writing academic English prior to this. So he organized a further course through the English Center at the university for 15 people

who all contributed to the cost. The course was taught by a Thai lecturer with extensive academic writing experience in English. He also used (and still uses) an AUA academic writing text book which was recommended to him by one of his fellow students. After completing his research, his work was published in English and he also presented it at international conferences.

He only writes articles in English and says that he understands how to express ideas in English although he thinks there is a limit to how far he can improve in his understanding of the finer details of the language and he used as an example the ability to recognize and use different forms (i.e. adverb, adjective noun and verb) of words. The first article I edited for him was credited to five authors of whom three were lecturers and two were students. They were all involved in conducting the research and once the results (which were somewhat controversial) were available, they discussed the structure of the article together. However TOM was responsible for writing the article which he did in English, writing the results section first then the conclusion then the materials and method section followed by the introduction and the literature review, an order which he had learned from his previous study of English academic writing. The draft version of the article was then read and commented on by the other authors. He said that in his experience, the average time taken to publish articles is between 6 months and a year. In this case, the finished article was submitted to the journal and the journal replied within 2-3 weeks, which he said is normal for high impact factor journals although other journals take longer (up to 4 months) to respond. He said that generally for high impact factor journals he will seek help to improve the English before the first submission, but in this case because he was not sure if the article was within the journal's scope, it was submitted without seeking to improve the English. As a result the reviewers commented on the need to improve the English and the article was therefore sent to the RDO from where it was sent to me to edit. Thereafter there were no further comments about the English in the two subsequent reviews, the results of which were confined to comments about the technical content. The article was accepted for publication after a further 3 months. TOM said that he had adopted about 80% of my suggested changes and that where the original wording was maintained the sentences were based on sentences in other articles. For a subsequent article written by him and colleagues, because the intended

journal had a high impact factor, the manuscript was submitted to the RDO's publications clinic before submission to the journal and it was edited by me before submission to the journal. Again, there were no comments about the English only about the technical content.

Has never published in Thai and when preparing articles he prefers to think then write in English which he said is a more effective language for writing about technical subjects, and that writing scientific papers in Thai is more difficult because the structure of the language is more complicated and limits expression. He said that writing in Thai requires more words to express the same idea and the results can be confusing. He has published only four articles in international journals in English. He said that he is very concerned about the quality of work and the journals in which he publishes. His motive for publishing is "for benefit of the people" and he views career advancement is a by-product. His faculty requires him to publish only one article every 2 years and he does not worry about this requirement as his main interest is in sharing his work. He said that when he was doing his PhD he initially felt that having to publish in English was unfair, but he now appreciates that this enables knowledge to be shared worldwide. Nevertheless he recognizes that English is difficult for Bachelor's and Masters' degree students so they are allowed to present their work at conferences in Thai. However he encourages them to publish their work in English in order to gain wider recognition.

Asked about the most important factors in the development of his English, he again said that the Oxford Practice Grammar had been very important for him in learning English structure and that his best learning periods had been self-learning. However he said that the experience of talking to foreigners at his first job had also been important in developing his ability to speak, as had reading other authors' work at Master's level in developing his ability to read and understand English. He thought that the academic writing course arranged during his PhD had also helped to develop his ability as a writer

His spoken English is quite fluent but structurally inaccurate with tense usage poor as well as a tendency to construct utterances without subjects or verbs. His comprehension was fair but at a number of points in the conversation he had difficulty

understanding questions although that could have been associated with the way in which they were framed.

UNA

UNA was born in Natthawee and attended, prathom and mathayom 1 to 3 at government schools there, but at mathayom 4, in 1983 she moved to a science program at a government school in Hatyai. She entered PSU as an undergraduate and graduated with a Bachelor's degree in 1992. She then worked in a hospital in Krabi for around 3 years before returning to work in PSU. There she worked on a project jointly run with a European based organization and gained a scholarship under the project to study at a university in Bangkok for a Master's degree on a 1-year international program, graduating in 1996. She then returned to PSU and resumed working there, before studying for a PhD, also at PSU, graduating in 2007. Since then she has continued to work at PSU Hatyai as an Assistant Professor in which capacity she now acts as advisor to post-graduate students.

She began learning English in prathom 5 at the age of 11 in 1976. The teaching was limited to the alphabet and simple vocabulary and sentences. She said that it was a bad experience as she had no reason to learn and didn't have any outside exposure to English. The teacher spoke mostly Thai and the children had no opportunity to speak English other than repeating words spoken by the teacher who then translated them into Thai. At that stage there were around 30-40 children in her class which studied English for 1 or 2 hours a week using a book published by the MoE written in both Thai and English,

At mathayom 1-3, although the emphasis changed to grammar, the teaching method was much the same with the teacher teaching rules, giving example sentences and then the students doing written exercises. The students had no chance to speak or to hear English spoken naturally and the teacher spoke mostly in Thai, only speaking English to illustrate the content being taught. She learned for 1-2 hours a week. From mathayom 4 she studied in a science program at a government school in Hatyai, initially living in Hatyai, but later traveling to Hatyai every day from Natthawee. Here the time spent learning English increased to 4 hours a week with 2 hours spent learning grammar and 2 hours on reading included learning reading techniques such

as how to read for main ideas. The teachers spoke both Thai and English and her recollection was that they spoke more English than Thai and she felt that the teachers there gave clearer explanations.

She studied for 6 years at PSU for her Bachelor's degree but studied English formally only in the foundation course in the first year with a Thai teacher. However she had to use English from the third year onwards as she was required to read journal articles in English and conduct seminars on their contents. The foundation English course concentrated on listening in the language laboratory and conversation with little time spent on reading or writing. The classes were split into three ability based groups but they were large and the teachers could not give individual attention to the students, and UNA said that sometimes she did not understand the content in the language laboratory classes as the speaking was too fast. At the time of graduating and said that although she could express simple concepts in English in writing and could understand simple spoken English she could not speak with confidence although her reading was quite good based on what she had learned at mathayom 4-6. Overall she gave her formal education in English a "grade C".

After she left university, her first job was at a hospital in Krabi where she had no experience of English, but after about 3 years she came back to PSU to work as an entry grade lecturer. Here she worked on a project sponsored by a European organization which involved using English to communicate with foreign experts working on the project. Although initially she was shy when using English, within 6 months she had developed confidence, particularly as the people she worked with became friends, which helped her to communicate with them. Also, as they were not native English speakers, they spoke more slowly. Nevertheless she found it easier to talk with them about her work than in a social frame as the vocabulary was more familiar. She also had to write reports in English at this time and the foreign supervisor helped her by correcting her English. Overall, she rated this period as the most important for developing her English ability.

She was awarded a scholarship from the project to study at Master's level on a 1-year international program in Bangkok. She needed to achieve a TOEFL score of 550 to be accepted on the course which she did after taking a 20 - 30 hour preparatory

course at a language center in Hatyai which concentrated on test-taking skills rather than English. On the Master's program she studied with about 30 other students from different countries. The coursework was conducted entirely in English and lasted 6 months. She found understanding the lectures quite easy as the lecturers were not native speakers. She also had to use English socially with the other students but was non-committal about whether that helped her social English skills, (possibly because she was in Thailand so would still have been using Thai in her daily life). Then she had 6 months for research and wrote her thesis in English. She planned the contents first then produced a draft and was assisted by a Thai friend who had studied abroad and helped her to translate her ideas into English. The preparation work for her research involved reading English journal articles, some of which were outside her direct field, which she found more difficult to understand than those about her own speciality and had to read some of those 3 or 4 times to be able to understand them.

After she graduated at Master's level she returned to work at PSU for 3 or 4 years before embarking on a PhD. She was awarded a scholarship which was for a „sandwich“ program including 6 months spent studying overseas. She was encouraged by her local advisor to find a co-advisor overseas whom she approached personally and was accepted as a tutee by a Canadian professor. Initially in Canada she found communicating in and understanding English difficult particularly as the professor she was working with spoke very quickly. However after 3 or 4 months she became more confident although she still only rated her ability to operate in an English environment as “7 out of 10” at the end of the period as she still had some difficulty in understanding everything.

She finds writing to be the most difficult aspect of English. She writes articles in both Thai and English and thinks that style-wise she is a better writer in Thai than in English. She said that when she writes in Thai there is no barrier – she can easily select the correct words to express her ideas, but in English she has to think about both the grammar and the vocabulary. Some time after completing her PhD and returning to PSU, she set up a writing tutorial group in her faculty which was conducted by a lecturer from the Liberal Arts faculty. They used their own writing as input with the focus on improving their academic writing and translating their ideas in

Thai into English. However, UNA said it was of only limited use as she felt that the best way to develop writing is by doing it and she does not feel that there are rules to learn since how you write depends on what you are writing. She has also used YouTube as a means of practicing English in her own time and even bought a book describing how to use YouTube for that purpose. She watched mainly entertainment videos and not videos about her technical field.

She has published about 20 articles in both Thai and English. She writes about her subject from a technical perspective as well as about its broader social aspects using mathematical modeling. She also supervises post-graduate students so publishes articles as a co-author. She usually tries to have her work published in English in international journals which have a higher impact factor and are useful for achieving promotion at the university. She particularly tries to have articles about issues such as mathematical modeling published internationally as there is little interest locally about such issues. However, for certain aspects of her work where the focus is on local issues, e.g. public or community health, she will publish in Thai to reach a local audience. She said that she finds writing in Thai generally easier, but there are problems with technical terms in English, where there may not be equivalent Thai words, and translations may not be readily understood by other Thai practitioners in her field.

The article I edited for her through the RDO was one of three derived from the same study, one of which was published in English but in a Thai journal, the other relating to the qualitative findings being published overseas. The Quantitative findings which were the subject of the article I reviewed had some analysis problems and she had to submit the article to four different journals before it was accepted. Although she had co-authors, she wrote the article herself. She started by writing the results section and producing the tables, then decided on the title and wrote the introduction. She adopted most of the changes I recommended but despite this and even though she had also had another native speaker look at the final version of the article before its final submission, one of the peer reviewers suggested that the English needed to be reviewed. However, she did not actually have the article re-reviewed by a native speaker but made a small number of changes herself and the

article was then accepted. She says that about 80% of the time comments are made by reviewers about the quality of the English in articles, and she suspects that this is because reviewers make such comments almost automatically for non-native speaking writers.

She rated the difficulty of publishing in English as 4 on a scale of 0-5 which she explained was due to her not being confident about her ability to write in English and relying on a native speaker review before submission. However she thinks that the position of English as the predominant language of academic writing is useful as it enables the sharing of research findings internationally

Her spoken English was very fluent and overall quite natural and she was frequently able to give extended answers which went beyond the scope of the question asked, and the overall impression was of a high level of interpersonal skill. She back-channeled extensively in Thai using *ka* and *chai ka* but this was not in any way detrimental to comprehensibility. She was able to joke successfully in English and understand vernacular comments well. Although she needed to check her understanding of my questions on a number of occasions, overall her comprehension was at a very high level.

VAL

VAL was born in Hatyai where she attended the same private school for both prathom and mathayom levels. She then studied as an English major at PSU in Pattani. After graduating she worked at a vocational college where she taught English for 5 years, before being accepted as a Master's degree student at PSU, Hatyai from where she graduated in 2010. She currently works as a lecturer at PSU Surat Thani campus.

She began learning English in prathom 2 and described the teaching methodology as deductive with the teachers concentrating on grammar and vocabulary using a textbook which explained the grammar in Thai but with exercises in English. The teachers, who were all Thai, made almost no attempt to have the students speak English although VAL thinks that by prathom 5 or 6 she had some ability to speak and could write English. In mathayom, the same basic methodology

was continued and the same series of books was used throughout. The main aim of the English lessons at mathayom was to equip the students to pass the university entrance examination.

At university as an undergraduate at PSU, Pattani, she initially noticed that her spoken English was behind that of students from other schools and other parts of Thailand, notably those from Bangkok with some students having had the opportunity to study abroad for periods. She highlighted a change in the methodology to a more autonomous mode where self-study became important, although her analysis of the lessons in the basic grammar courses taught by Thai teachers was that they employed fundamentally the same techniques as those used by her mathayom teachers. The foreign teachers, on the other hand, adopted a far more student-centered approach with students' opinions and participation being encouraged. This was not only true of the first year speaking course where she had her first experience of learning with a native speaking teacher, but was also true of an advanced writing course aimed at teaching academic writing. She feels that this course was the single greatest factor in her ability to employ an academic style of writing later when she studied for her Master's degree.

Overall her assessment of the English education to undergraduate level she had was "6 out of 10". She thinks that it would have been better if she had been exposed to teaching by foreign teachers from the very beginning of her learning of English and highlighted the methods used by the foreign teacher at PSU Pattani as being beneficial.

While working after graduating, she was part of a team of both Thai and foreign teachers and enjoyed the opportunity to develop her spoken skills in interchanges with the foreign teachers who were from a variety of backgrounds. However, her attempts to use English in the classroom and to have the students study from English-only textbooks were unsuccessful as she says that the students did not understand English and were not motivated to learn.

In her Master's degree course there was at least one non-Thai student, so the classes were conducted mostly in English with lecturers using Thai only where necessary when the Thai students did not understand concepts in English. This, again

helped her English language development as did the intensive reading necessary to cover the course material.

She uses the Internet to access English movies and TV as well as on-line exercises to improve her test taking skills and uses English in her present position as a lecturer at PSU Surat Thani where there are native speakers as well as Thais in the faculty. She has published work only in Thailand and has not yet attempted to publish internationally. After graduating at Master's level, she presented her work at a conference. She prepared the paper herself by adapting parts of her thesis, then submitted the manuscript to her thesis advisor who vetted it before it was submitted to me privately for editing. However, when the paper was submitted to the conference committee for review, a number of questions were asked and some suggestions for improvements were made. She again sent the paper to me for help before discussing it with her advisor and then resubmitted it to the conference committee and it was then accepted.

She also wrote a further, longer paper based on her thesis research with the intention of having it published in a journal, which was first sent to a friend for help with the English and then sent to me before it was sent to her advisor. However, her advisor was not happy with the article and VAL took no further action to have it published. The two papers (the conference paper and the unpublished journal paper) were both analyzed for NCU and as reported in Table 5 in Chapter 3, the rate of occurrence of NCUs was highly correlated between the two papers at all levels even though the actual NCU% were somewhat lower in the first paper than in the second which was the paper that was eventually included in the analysis.

She has had papers in English published in a Thai journal and said that the peer review process had thrown up questions that had to be dealt with before acceptance. She has published one article in Thai but she said that she finds writing in Thai quite difficult compared to writing in English although the process for publication was simpler than that for the articles she has published in English. In addition to these publications, she has made one presentation overseas in connection with efforts made to gain entry to a university in New Zealand to study for a PhD there. However she was only required to produce an abstract for that purpose which

was accepted without review. Overall she rated the difficulty of having work published in English as only 2 on a scale of 0 (not difficult) to 5 (very difficult).

She accepts the need to write in English to share knowledge and prefers to learn in English than in Thai as a way of gaining knowledge from outside of Thailand. She also sees English as necessary as a medium of instruction in her position at the university. Her spoken English is quite fluent although she had some difficulty understanding questions, which was mostly resolved by seeking clarification. However, she was quite conservative in her use of language and did not often indulge in extended speech nor did her answers often go beyond the immediate question asked.

WAN

WAN attended prathom and mathayom in government schools in Songkhla. She completed prathom in 1993 and mathayom in 1999. She then went on to study for a Bachelor's degree immediately followed by a PhD program from which she graduated in 2007, since which time she has worked as a lecturer at PSU Hatyai. All her studying has been in Thailand and she has never studied abroad nor experienced any extended period in which she has had to use English as a medium of communication with others.

She did not study English at prathom, and at mathayom she learned in a science program but did not start to learn English in classes until mathayom 4 when she was 16. She said that she remembered very little about the classes but they were taught by a Thai teacher who concentrated on vocabulary, grammar and reading and she did not recall having any opportunity to speak English in her mathayom classes. She had no prior experience of English before mathayom 4 and could not read nor write English. She did not like languages as a subject of study and preferred maths, and science subjects. At mathayom 4-6, English was compulsory but she wasn't interested in learning it, found it difficult and could see no advantage in learning it. She said that she was not good at English and only took learning English seriously while studying for her PhD when she began to see the advantage of being able to use English.

After completing mathayom 6 in 1999, she studied at undergraduate level at PSU Hatyai. In the first two years she took foundation English, 1 and 2 which were the only English classes she studied at PSU. The teachers were Thai and spoke about half English and half Thai. She recalls no opportunity being given for the students to speak in the classes. She said that she did not understand everything she was taught but nevertheless by dint of hard work and watching English videos and movies, (which she said she largely did not understand) to help her listening, she was able to gain grade A's on all the tests she took. After that she took no further elective or other English courses at PSU.

She then studied in a 4-year combined masters and PhD program taught entirely in Thai in which there were only Thai speaking students, and from which she graduated in less than 4 years. During this time, she began to appreciate the need to acquire English skills, particularly as she had to pass the PSU GET. Since her course did not include classes to help her prepare for the PSU GET she took classes outside of the university at two schools to that end. She initially took English classes to improve her reading, listening and grammar. At the language school, the students mostly watched videos rather than learning from a teacher and sang songs to help them remember English words and grammar. They listened then practiced themselves and she said that this helped her to remember English, and in particular to understand sentences and tenses. The method also helped her to enjoy the learning experience.

After that school she arranged private writing classes at a different school where the lessons were taught by a native-speaking teacher. The classes were aimed both at helping her to pass the writing component of the PSU GET as well as helping to improve her writing skills in preparation for writing her thesis which had to be in English. The course covered basic academic writing and was conducted over three blocks lasting in total 60 hours. She said that the course was successful and gave her enough English to write her thesis as well as increasing her confidence in using English. She also had to read a lot of journal articles while studying for her PhD and generally she said that she worked very hard at her English prior to taking the PSU GET which she passed with a "full score" and came top in her sitting of the test.

When she came to write her thesis she wrote some chapters in Thai first then translated them into English, but generally she found it better to work from an English draft written in simple sentences and then to revise and improve it. She had no assistance in preparing her thesis, but said that it was easier than writing journal articles because it required simple, formal English whereas articles require a more complex style. However, she learned to write in a formal style through her own efforts and whenever she writes she revises her work many times.

She has published a number of articles in English and has presented her work in English at conferences abroad. She said that she only really started to speak English once she became a lecturer at PSU and has had no extended period of experience of using English with native speakers. She said that she finds that learning to write is different from using the language to write or speak in real situations which is much harder. She finds explaining things in writing in English difficult but is able to understand how to deal with problems in writing once she sees corrected versions. However, she cannot think in English in the way she can in Thai. She feels that her problem is that while she knows her subject matter she does not have the English to express it, as she knows only basic English, and in particular she lacks the technical vocabulary needed to write in the more complex English style used to write articles. She worries that errors in her English might lead to readers misunderstanding her meanings. She said that because she is not an expert she cannot write 'beautiful sentences' and is worried that readers may not understand what she writes.

Following the completion of her PhD research, she found it quite easy to have two articles published in ISI-rated journals. These days, however she finds it more difficult to get articles accepted by Scopus and ISI-rated journals as there are a lot of people publishing in her field. She said that some journal editors may refuse articles if they perceive the work to not be novel and she finds that some reviewers do not properly understand her English which impedes the acceptance of articles. Altogether, she has had around 20 articles published in English. She said that she needs to write many articles but has to devote a lot of time to writing them as she finds it necessary to revise them many times before she is happy with their content. This is however a

problem for her as a teacher as she doesn't have enough time to devote to each article. She always writes in English although she said that she still thinks in Thai.

The article that I edited for her was based on a research project conducted with one of her master's advisees but in preparing the article she only used some of the data from that research. The article was written by her alone, in English, with no Thai version being prepared. She said that she accepted about 75% of the changes recommended. Initially a number of comments were made by the peer reviewers relating to the data in the paper as well as a more general comment about the need to review the English (which I did in a subsequent round of editing). She added more data to meet the reviewers' comments and in the final version, the title of the article was changed as a result of a reviewer's comment. The article was then accepted with no further changes necessary.

In addition to publishing in English, she has also published around six articles in Thai and she said that she can express herself better in Thai than in English. Also, it is easier to publish work in TCI journals in Thailand than in Scopus or ISI journals in English. However she says that she gets ideas in English, particularly from journals and from reviewers' comments on her work in English so she writes more in English than in Thai. She also prefers to write in English as Thai articles cannot be used to improve her position in her faculty which sets a high tariff on journal quality. She accepts that writing in English can help to improve the status of the university and that because most of her work is relevant beyond Thailand, writing about it in English is appropriate. As a secondary reason she writes in English to share her work with others, but resents having to write in English and having to publish in high quality journals which she said is difficult and time consuming. She ranked writing for publication in English as 4 on a scale of 0-5 for difficulty where ISI and Scopus journals are concerned but said that for other journals the difficulty was only 2 as the standards required were much lower.

Her main reason for improving and wanting to improve her English has been her career. She would like to learn more to advance her career, particularly as she has never studied abroad and would like to be able to go abroad to do research. However, she has tried to find courses to help her to write scientific English but has been unable

to identify any school which can teach the English appropriate for writing academic articles. Despite her relatively low exposure to native speakers, she did not find speaking at conferences as difficult as writing articles as she could prepare in advance, but found answering questions more difficult. She thinks that her spoken English is not good and that she needs to go abroad to improve it. Indeed, her spoken English was quite inaccurate and tended towards a “telegraphic” style, frequently omitting grammatical elements such as verbs, subjects or obligatory objects. However she had no difficulty in conveying her meaning although she did seem to find some difficulty in comprehension which could have been related to the circumstances in which the interview was conducted (a rather noisy coffee shop).

XIAN

XIAN was born and brought up in Trang where she attended all pre-university education in private schools, learning English for 14 years from age 4. She was an English major at university and had a number of jobs mostly in retailing before taking a job as an English teacher. She then studied for a Master’s degree at PSU Hatyai, and worked as a teacher again for 2 years before being accepted as a PhD candidate at a university in Bangkok, and she continues to work towards graduation although she has now resumed her career as a teacher at a university in Songkhla.

She spent 2 years in anubahn in Trang from age 4 commencing in 1979 when she first encountered English. The emphasis at that stage was on learning to say and write the alphabet and the teachers used songs to help the children to remember. She studied prathom in Trang at a private school from 1981 and learned English throughout the whole 6 years for around 3 hours per week in classes of about 40 students. The teachers, all of whom were Thai, paid a lot of attention to English with the emphasis on grammar and vocabulary. The students were often required to write down vocabulary and to translate the words into Thai as well as writing them correctly in English and the vocabulary learned was tested frequently. XIAN linked this pattern of learning to the need to pass paper-based tests since there were no oral tests and therefore few opportunities for the students to speak. The teachers taught exclusively in Thai and the lessons were based on an MoE book which was all in English and in which students also wrote.

She changed schools for mathayom and again attended a private school which she said was considered to be the best school in Trang. It was a Christian school whose owner had graduated overseas and the school emphasized the learning of English. She learned in a general program for mathayom 1-3 but then specialized in English in mathayom 4-6 in classes of 40-45 students. In mathayom 1-3 she studied regular English classes plus a special class with the emphasis on reading which was taught by the school's principal. Altogether, therefore she studied around 6-9 hours of English every week, with the regular classes focusing on vocabulary and grammar and the special classes focusing on reading translation and pronunciation. The teachers were all Thai and spoke mostly Thai using 'traditional' methods based on learning from a textbook and doing exercises and homework. They also used recordings or read texts on which students answered questions and used dictation tests as a means of testing learning and writing as a way of checking grammar. XIAN said that there was one teacher at the school who used English when teaching all subjects and that the students were able to understand her.

The special course taught by the owner of the school emphasized reading and translation and the lessons also helped to develop the student's knowledge of grammar and aided their pronunciation. The teacher used specially ordered books published overseas and the students were assigned to read material in advance of the class, and then were randomly selected to stand and read aloud and to translate the text into Thai. XIAN said that this course was more useful than the regular course and it made her feel that correct pronunciation was important as a way of achieving fluency. The owner of the school also made the students listen to two or three lectures a year in English each lasting around 30 minutes from foreign missionaries, which helped the students to develop their English listening skills. Overall she feels that the methods used in mathayom 1-3, which were based on quite strict discipline were very successful in developing her English.

For mathayom 4-6 she studied in an English stream and again studied English for 6-9 hours a week. The focus was still on grammar rather than speaking and the learning emphasized receptive skills rather than production although there were some albeit rare opportunities for the students to speak. For instance, she recalled that in

mathayom 4, the students did role plays, which she enjoyed, which were prepared and practiced in groups, then performed in open class. As with mathayom 1-3, all the teachers were Thai and spoke 90% Thai in class and there were no native speaking teachers. The lessons continued to use 'traditional' methodologies which were mostly book-based. The methods were successful in developing the knowledge of grammar needed for exams but not for developing speaking. Nevertheless at the end of mathayom XIAN could speak to native speakers with some confidence and could understand more than 90 % of what was said to her although she thinks that the native speakers may have had some difficulty understanding her because her grammar and usage was not always appropriate for the variety of English of the person she was speaking to. At the end of mathayom her writing was at a paragraph level and she could also read English newspapers and she said that her English was quite advanced at that time.

During the entire 6 years of mathayom she took private lessons for 1-2 hours a week with a teacher from another school aimed at English test taking skills. The teacher also sometimes helped her by checking writing assignments from her school. After taking the university entrance examination, she then went on to university studying as an English major at PSU, Pattani campus. In the first year of university the English taught was at much the same level as that which she had already learned in mathayom and she did not think that she learned much. However, the classes stressed autonomous learning and how to use English in real situations, and were taught by both Thai and foreign teachers.

In the first year there were some general subjects not related to English but from the second year on almost all the classes were related to English. They covered all the skills including writing, reading, speaking, listening and translation/interpreting which were taught separately in a structured program. The Thai teachers used mostly Thai when teaching but the foreign teachers taught completely in English and concentrated on using English in real situations without emphasizing grammar. However, the students didn't always understand the foreign teachers but cultural factors made them reluctant to ask for clarification, a problem of which the foreign

teachers were aware because the students didn't always react correctly to what the teachers said.

When she was in the fourth year, recruiters for staff from a supermarket chain came to the university to recruit fourth year students as new trainees and XIAN was the only English major selected. Through this, she came to realize that at the end of her undergraduate studies, her English skills were very good in comparison to other Thai people, even though she felt that she was only in the middle in ability level among her peers at university. She could speak confidently and fluently and when she went to work for the supermarket in 1997 she was selected by her Chinese manager from among the trainees to act as secretary to the foreign executives because of her ability to communicate in English. She worked for the company for a year and the assignment as special secretary lasted for 4 months. The experience of speaking English with native speakers helped a lot in the development of her English although she said that she was confident in speaking English from the beginning of the special assignment.

She had a number of jobs after that and also worked for another supermarket chain for 6 months, where, although she rarely used English, she said it was sometimes useful for reading documentation, and later at a different job she also used English with foreigners both in person and in e mails. But in 2003 for family reasons she moved to Surat Thani and applied for a position at a university as an assistant English teacher where she worked for 3 years. At the time she would have preferred to take a staff position but took a teaching post on the advice of a relative who was a lecturer there. She was given no training and initially had some problems teaching teenagers who had poor English skills. She tried to motivate the students using her own experiences while following the course objectives and eventually enjoyed and learned a lot about teaching in that time. Therefore on the advice of her supervisor, she decided to study for a Master's degree and applied to and was accepted at PSU, Hatyai, where she studied for 2 years. The entire course and all the materials were in English and to begin with she found that difficult as she had not spoken or listened to natural English for some time. Also, she initially had difficulty in adapting to writing in an academic style which she had never before encountered, nor had she ever read

English journal articles. At first she tried to use a dictionary to help her understand articles but found that took too much time, so learned to identify the most important information such as the subject, the methodology, the instruments and the results. Her thesis was produced in English and her research work was published in English in the proceedings of an international conference in Bangkok, which was the first time she had published any work, and the presentation in Bangkok was given in English. The proceedings paper was reviewed by a native speaker for its English content before being submitted as well as being reviewed by the conference, when the comments given were mainly on content rather than the English.

After graduating with a Master's degree, she then taught English for 2 years at a university in Songkhla before deciding to study for a PhD in order to achieve a permanent position there. She commenced studying in Bangkok in 2010 with 2 semesters of coursework taught in English by both foreign and Thai lecturers, which caused her some problems as she felt that her ability to respond to lecturers' questions was slower than that of younger students. After that she conducted research and is still waiting to graduate and to have the article which I reviewed published. That article was based partly on her thesis, which was in English and the article itself was written entirely in English with the only assistance about the content from her supervisors. She has already published one other paper in English in a journal in Thailand and has presented her work at five conferences, two overseas and three in Thailand for which proceedings papers were written in English. The peer reviewers of the journal article already published commented only on the technical content, not on the English. She has never published work in Thai and is familiar and comfortable with writing about research in English

However she said that she may have to learn to write up research proposals or articles in Thai as the university where she currently works will only fund work based on proposals and papers written in Thai although she thinks that they reward the publication of articles in English in their review system. Because of her reluctance to write reports etc. in Thai she has considered doing research with other teachers but is wary of doing research with other people in case of possible conflicts over the allocation of work. Her main reason for publishing work is related to career

advancement and rewards. She thinks writing in English is very difficult (4 on a scale of 0-5) mainly because of the content rather than the English. She perceives that there are differences in the difficulty of publishing based on the quality of journals and finds the skill of synthesizing in writing difficult which is necessary when writing articles for better journals but not so much when writing proceedings papers. Her spoken English is very fluent and overall quite natural and she was frequently able to give extended answers which went beyond the scope of the question asked.

YVES

YVES was born in 1974 and attended both prathom 1-6 and mathayom 1-3 in Surat Thani province. He should have started learning English in prathom 5 but the teacher became pregnant so the classes never took place and he only learned to read/write English when he started learning English at 12 in mathayom 1 in 1988, when he moved to a university demonstration school in Surat Thani, where the class size was less than 40 students. His main teacher was Thai but the school also had foreign teachers who concentrated on teaching conversation, which helped his English skills. Though he had some exposure to English in school, prior to starting to learn, he had no exposure to English at all outside of school. The Thai teachers followed the government curriculum and focused on sentence structure and grammar with a little listening/speaking and writing. They used an English text book, while the native speaking teachers used the learning environment, singing etc. to teach speaking. They learned for 3 hours per week. He didn't like English, hated grammar and his grades were low. However, in mathayom 2 and 3 he met some Australian and New Zealand exchange students and had the opportunity to speak to them which helped him a lot.

In 1991 after completing mathayom 3 he moved to a university demonstration school in Pattani where there were only Thai teachers who used an English text book as well as some authentic materials, e.g. the *Student Weekly* newspaper. They taught mainly in Thai (60%) with English used mostly to present language and for drilling. He learned for 6 hours per week and the lesson content was similar to that at mathayom 1-3 (grammar, listening/speaking and reading and writing) and the class size was similar. The classes included both a compulsory basic class as well as an elective activity-based class in which they did role plays and had some opportunity to

speak English, although this was quite limited. At the end of mathayom 6 his English ability was not stable because he did not use English every day causing his skill level to go down and in 1994 his final year at the demonstration school in Pattani he had little opportunity to speak English.

He studied for a Bachelor's degree at PSU Hatyai. On joining the university, his English score was low and he was asked to take, but failed the PSU GET. He took the foundation English course in the first two years but thereafter took no further English classes. The classes were mostly grammar based although he also practiced speaking in the language laboratory.

After graduating in 1999, he returned to Surat Thani to work at a university in computer administration and studied part time for a Master's degree at a different university at weekends. He also did some part time teaching at the university where he worked. In his work, he had to use English to speak to a native speaking programmer in Bangkok and he did not find it hard to use English based on what he had learned up to then. His Master's degree course was taught in Thai but it was based entirely on English materials so he also had to use English there. Initially he translated the materials from English to Thai but his ability to understand the English in the materials was aided by the technical terms being the same in Thai and English. However, he wrote his thesis in Thai and despite having had opportunities to use English in real situations, his English level was still variable at the time of graduation at Master's level in 2006 and he thinks this was partly due to not studying English at that time. However, his reading skill did improve and he learned reading techniques such as skimming and scanning and establishing overall meaning before reading in detail, to help him to understand English material,

He then worked at PSU in Pattani for 3 years before studying full time for a PhD at the PSU Hatyai campus, which he completed in 2012. Here, the course was taught in Thai with some Thai and some English materials although there were more Thai than English. He took a basic, *English for Graduates* course in the first year with a native speaking teacher who concentrated on spoken English. In 2011 in his second year, he also went to New Zealand for 2 months with a group of ten post-graduate students to study English, and he said that this experience had a big effect on the level

of his English. The initial objective was for them to be taught grammar and pronunciation but the students asked the teacher to change the format of the lessons to concentrate on helping them improve their written English and presentation skills. They did impromptu presentations in class which were videoed and reviewed by the teacher. They also studied the use of synonyms and antonyms in academic papers. He enjoyed the experience of living in an English environment and speaking English conversationally and he thinks his skill would have improved further if he had stayed in New Zealand longer because of the opportunity to use English naturally rather than the learning in a class.

Writing papers in English during his PhD period was the first time he had to write academic papers in English and on his return to Thailand he attended a 1-month (12 hour) short course at the Faculty of Liberal Arts covering academic writing, and speaking and listening. He wrote one-page papers that the teacher corrected (for grammar) after which he improved and resubmitted them.

From his PhD thesis which was written in Thai, he published two papers, one in a Scopus-listed journal and one as proceedings for a conference in Malaysia. The paper I edited was the proceedings paper and he was able to send the journal paper to a native speaker at PSU for editing. The proceedings paper was first written in Thai and then translated into English, which he did himself without any assistance, whereas the journal paper was written in English, the first time he had tried to do this. He said that in doing this, he tried to think in English and then write without thinking about the grammatical accuracy. He thinks that this is a better way to write papers in English than translating them from Thai. The proceedings paper was sent to the RDO for editing then submitted to the conference where it was peer-reviewed. The comments from the peer-review were overall suggestions about improving the paper including some correction/amendment of both words and ideas.

The journal paper took him a long time to write and overall the paper took 10 months to get published which included the 2 months in New Zealand, and he had some assistance from the teacher there. It first appeared as a paper in a conference in Chiang Mai, where it was selected for publication by a journal. At this stage after trying to improve the paper himself he sent it to the native speaker for further

improvement. The paper was peer reviewed twice, once for the conference and once by the journal. The reviewers' comments from the journal were mainly about the content and format as well as the grammatical accuracy of the language.

Altogether he has published four papers in English, one in a journal plus three proceedings papers. He has also published four or five papers in TCI journals in Thai. He thinks that writing in Thai is different as Thai papers demand consistency in the use of lexis whereas the English style values the use of synonyms. He tries to publish papers in English because the university accords a higher value in his annual assessment to publications in English and the university will only recognize papers in English published in international journals so this forces him to write in English. But he is not happy with this situation. He has noticed that his international journal paper has not been referenced by other authors whereas his papers in Thai have been. He doesn't think it is fair for English papers to be more highly valued than papers in Thai unless the authors have studied in an international program in Thailand. He ranked writing in English as 4 on a scale of 0-5 for difficulty.

His English is quite fluent but inaccurate and structurally poor. He seemed to lack confidence in his ability but he had little difficulty in understanding or making himself understood although during the interview he found it helpful to be able to check certain words with the interpreter⁸ present and he asked for some badly phrased questions to be repeated.

ZOLA

ZOLA was born in Bangkok in 1976 and first encountered English at anubahn, then continued to learn throughout prathom and mathayom. She studied in Bangkok for her Bachelor's degree, then after working for 3 years gained a scholarship to study in Russia where she initially spent a year learning Russian before studying at

⁸The interpreter attended at his request although he actually conducted the interview with minimal assistance from her, and this was the only occasion that an interpreter was present at an interview.

both Master's and PhD level. She then lived in the Netherlands for a year before returning to Thailand and taking up her present post as a lecturer in PSU Hatyai. In the early eighties when she grew up, even in Bangkok there was little opportunity to use or experience English and she had no exposure to English before she started learning it at age 4 in a private anubahn, where the children learned the alphabet, sang songs and played games. From age 6 she attended a private prathom school which emphasized English. She learned English there for 6 years always with Thai teachers, who spoke mostly Thai and taught grammar including verb tenses and simple vocabulary. The classes were teacher-fronted, did not involve communication and the students took no active role in the classes. They had a book in which to do exercises and the teacher taught from another book but which the students did not have. They learned for 5 hours a week, one period per day, in a class of 50 students and she thinks that the school taught English well compared with government schools.

At the end of prathom she could not speak and could not have spoken to a foreigner in English but she could use correct grammar in exercises and could construct simple written sentences correctly. She could only read at a paragraph level but could understand simple tenses. While she was in prathom 5 and 6 she recalls listening to English songs and seeing videos of English language singers. She also saw western movies but the soundtracks were all in Thai.

In prathom 6 she took classes at a tutor school in order to try to pass the entrance examination to go to study in a famous mathayom school. The tutor school used both teacher-fronted classes and video based lessons but she did not pass the examination so studied at another government mathayom school in a general program. She said that the teachers were better than at prathom because they had a higher level of education and their teaching methodology was better. But the lessons were still teacher-fronted with the teachers speaking mostly Thai and the students not actively involved in learning. All the teachers were Thai and she does not remember the school having any native speaking teachers. They studied English every day for 5 hours a week in classes of around 50 students. The lessons focused on reading and writing not on communication and they learned from an MoE book which was in

English. In mathayom 3 the teacher also recommended the students to read English novels and student newspapers.

In mathayom 4 to 6 she studied in a math and science program but continued to study English for 5 hours a week. She said that she enjoyed English and was happy to learn although she thinks that at that time English was not perceived as being as important as it is nowadays. The English classes did not try to teach language specific to science but continued to focus on daily-life English with the emphasis on grammar and no opportunity to speak English to other students in English. However outside of school she made efforts herself to learn English and she continued to listen to music in English which she enjoyed and remembers to this day. With a friend she also had one experience of helping an English speaker in Bangkok by giving them directions in English. She also attended a tutor school during mathayom 3, 4 and 5 where she learned more advanced English along with science and maths and she got a very high score in the university entrance examination in English in mathayom 6 which she thinks was because of the combination of tutor school learning and her love of English songs and movies. At the end of mathayom she could have written a simple paragraph describing herself, but could still only read at a paragraph level. She was keen to try to speak English but would have had some problems in understanding English on the radio or TV.

She then went on to study for 4 years for a Bachelor's degree at a university in Bangkok. In the first year, she studied in a basic English class which concentrated on grammar and did not try to prepare them for using English in their scientific studies. The class was taught based on a lecturing style of teaching and there was no communication in English between the students. There were no further formal English classes at the university but in the fourth year she had to read journal articles in English and had to present them in seminar classes. Before she started reading articles she had had no experience of the English vocabulary relevant as all the terms used in her studies had previously been presented in Thai. The university did nothing to prepare the students for reading journal articles in English and they had to prepare themselves as best they could. Those who did not do so simply got low grades. The articles she read were based on a list given to them by the lecturer in the class and the

students then accessed the articles to read in the library. She used a dictionary to help her to understand the articles and although she did not understand what the difference was in the English style being used she could sense that it was different from the 'daily life' style of English that she had been taught. She also found the book she had learned from in the tutor school to be useful in helping her to understand the articles.

After she graduated, she worked for 3 years but did not have to use English. However she had private classes with an American teacher who taught her and her sister English conversation at home for approximately 200 hours (4 hours a week) over the course of a year. At first she found it strange and difficult but it became easier and this experience helped both her ability to speak English and also to use correct language structure.

She then set about trying to get a scholarship to study in the West but could not get a sufficiently high score on the TOEFL despite taking preparatory classes for 3 hours a week for 6 months with a Thai teacher and taking the test three times. She then decided to apply for and was granted a scholarship to go to study in Russia. She had no previous experience of Russian and all the international students on her course had to study Russian from ground up in a course provided by the university. They studied Russian exclusively for a year for around 15 hours a week in formal classes in which she learned literature as well as language. They started with the Russian alphabet and within 5 months she could communicate in simple survival Russian. None of the other international students could speak English so she was not able to use English as a medium of communication but she had some Thai/foreign friends with whom she practiced Russian. However she found it confusing to have both English and Russian as second languages. The Russian course only dealt with general Russian and her first experience of academic Russian came in the second year when she started her Master's degree studies and she found studying Russian academic vocabulary difficult. But she continued to study in Russian classes for 5 hours a week throughout the whole period that she was in Russia.

She studied for four years each for her Master's degree and PhD and both her thesis and dissertation were written in Russian. All the course books were in Russian

but she had to read English as well as Russian journal articles and she used a Russian - English dictionary to help her to understand the Russian articles.

After graduating at Master's level she went straight on to study for her PhD and continued to study the Russian language which was compulsory for international students. She graduated with a PhD in 2010 and then went to the Netherlands for a year to try to find a job there. While there, she studied Dutch for around 15 hours per week and achieved an A2 level by the end of the year. However she had some need of English in social situations although in the area where she was living, not many people spoke English. But when she had job interviews in Holland they were conducted in English. In a later response to an enquiry about the methods of teaching she encountered in learning Russian and Dutch, she said that in both these experiences the methods used were quite different from the methods she had encountered in learning English in Thailand and for both Dutch and Russian she was able to identify several methods associated with a communicative approach to language teaching.

At the end of a year in Holland, she had not been able to find a job so she returned to Thailand and took up her present post as a lecturer at PSU in which her main use of English is to write and publish articles although she also uses English materials for teaching students and English articles in relation to her own research. She still finds some difficulty in using English as she learnt relevant vocabulary in Russian so she reads a lot in English to try to develop her knowledge.

The article I edited was based on research conducted at PSU and it was written in English which is her normal way of writing. The article was submitted to a Chinese journal without being edited first and was accepted without any comments about the academic content, but with the proviso that the English needed to be improved. The article was therefore submitted to the RDO but they were slow in responding so she sought and obtained assistance from another native speaker. They sat down together and improved the article within a day and on resubmission, the article was then accepted.

This was her first article published in English but she has another one under review at present. That article was edited first by the native speaker and she had no adverse comments about the English from the journal when it was submitted although

there were comments about the academic content. She is used to scientific English because of reading journal articles but she still finds explanations in English difficult, and therefore needs help from native speakers when writing articles which she says in her experience is a widespread situation among her colleagues.

Her research work in Thailand is made difficult by a lack of specialist equipment, so her articles are all based on theoretical research and sometimes it is difficult to explain this in English because of the terminology used. She has had three articles published in Russian which were submitted by her PhD advisor to Russian journals with her as the first named author and him as corresponding author. The articles were also translated into English by the publishers. She has also published review articles in Thai but has never published papers in Thai about her research. She thinks that having to publish in English is neither fair nor unfair; it is just something that she has to do within her career and because she wants to be recognized by her peers for her work, publishing in English is a necessary step in achieving that end.

Her spoken English was somewhat circumspect and she rarely produced long utterances or answers which went beyond the needs of the question asked. Nevertheless her spoken English was quite effective and relatively accurate showing a slightly lower NCU rate than that in her written work, one of only two participants for whom this was the case. She had no difficulty in conveying meaning or in comprehension but the influence of the other two European languages she has learned was evident particularly in the use of the word „grammatica“ instead of grammar, „grammatica“ being the form/pronunciation of the word in both Dutch and Russian.

Appendix 3:

- A. Sample e mail approaching potential participants
- B. Pre-interview questionnaire
- C. Sample semi-structured interview template
- D. Sample ordering activity format
- E. Informed consent and agreement to participate

A Sample e mail approaching potential participants

Dear Khun (*Author's name*),

My name is Mick Currie. In (*month and year when paper was edited*), I reviewed your paper entitled: (*Title of paper edited*) which was sent to me to be edited by the publications clinic at the Research and Development Office (RDO) at Prince of Songkla University.

I am a graduate student in the faculty of Liberal Arts at PSU, Hatyai campus, and I am conducting my own research within their PhD program in Teaching English as an International Language. My research project involves analyzing a number of the papers which I have edited through the RDO and identifying the aspects of writing in English which cause difficulties to Thai authors, I also interview the authors whose papers I include in my study to try to establish qualitative data about their experience as both learners and writers of English.

The project is being conducted entirely anonymously and neither the authors nor the title of their papers will be identified in any way, with the results of the analyses I conduct being presented as statistical data derived from all, or groups of papers and authors.

I would very much like to include the work I did on your paper, in my study. Would you be agreeable to allowing me to do this? Would you also be willing to meet me at a later date to be interviewed about your experience as a learner and writer of English?

I would be very grateful for your agreement to allowing me to include your paper and your experience in my study.

With kindest regards
Mick Currie

B Pre-interview questionnaire

This information is to help me to focus during our interview on the most important aspects of your experience of learning English, and in the writing and publication of your article entitled:

Completed by: _____

- Please give brief details of your formal education (to date)

	<u>Type of school</u>	<u>City/town</u>	<u>Year completed</u>
	(government, private etc.)	(country if not Thailand)	(CE or BE)
P1-6			
M1-3			
M1-6			
	<u>University</u>	<u>City (country if not Thailand)</u>	<u>Year completed</u>
Bachelors			
Masters			
PhD			
- When and at what age did you begin learning English? Year (CE or BE):
Age:
- Until when did you attend formal English classes? Year (CE or BE):
Age:
- Have you ever attended English classes at a language school or center or had other English tuition, which was not part of your formal education?
Yes /No
- Did you ever attend classes or have coaching to help you to write academic English?
Yes
Please briefly detail the course/coaching undertaken: _____

- No
- If you answered „yes“ to question 5, did the classes or coaching equip you with the skills needed to write articles for publication in English language journals?
Yes
No Why not?

7. Which of the following are true about your article? (*circle one number for each of A-D as appropriate*)
- i. The article was adapted from a thesis or other account of the research described in the article
 - A. OR
 - ii. The article was the first written account of the research described.
 - iii. The article was prepared first in English
 - B. OR
 - iv. The article was translated or adapted from a first version in Thai.
 - v. No one other than the named authors assisted with the English language content of the article
 - C. OR
 - vi. Outside help with the English language was sought during the writing of the article.
 - vii. The article was drafted and written jointly by all the researchers named in the article.
 - D* OR
 - viii. The article was drafted and written mainly by one of the researchers with the other researchers approving the final version.
 - **Only applicable if the article credited more than one author.*
8. Which of the following were used as aids to the writing of the article? (*select all relevant*):
- A. A bilingual (Thai-English) dictionary
 - B. A monolingual (English) dictionary
 - C. An electronic dictionary or similar app. on a pc or handheld device
 - D. An on-line translation service (e.g. Google Translate)
 - E. The style guide from the journal to which the article was to be submitted
 - F. Other. (*Please specify*) _____
9. After the article was edited and before it was submitted for publication: (*select only one*):
- G. I/we adopted all or most of the changes suggested by the editor
 - H. I/we adopted some of the changes suggested by the editor
 - I. I/we did not adopt any of the changes
10. The journal to which the article was submitted is published:
In Thailand / Outside of Thailand
11. Was the article submitted to a peer-reviewed journal?
Yes / No

12. If you answered yes to question 11, did the comments you received from the peer reviewers relate:

J. exclusively to the content of the article

K. both to the content of the article and the use of the English language

L. mainly to the use of the English language

(If you still have a copy of the peer reviewers' comments and your responses to them would you be prepared to share these with me?)

13. The article:

M. was accepted for publication in the form submitted

(Name of journal _____)

N. was accepted for publication after further amendment

O. was not accepted for publication

P. is still awaiting publication.

14. On a scale of 0 - 5, how would you rate the problems presented by the need to write in the English language in order to have your research published in the journal of your choice? Please circle your rating:

(Very difficult) 5 4 3 2 1 0 (Not at all difficult)

Thank you for the information and your opinions!

C Sample semi-structured interview template

I'd like to start by asking about your experience of learning English in your formal education.

1. (Consult P-IQ:1/2) You started learning English at 6 years old which would have been in prathom 1?
 - a. What can you remember about the English lessons?
 - b. Was the teacher Thai?
 - c. What kind of methods did the teachers use?
 - d. And what skills or language areas did he/she focus on?
 - e. What kind of materials did he/she use?
 - f. Did the teacher speak mainly Thai or English?
 - g. How many students were in the class?
 - h. And how many hours a week did you spend learning English at that stage?
2. After that when you were in XXX (repeat 1 for each stage up to university).
3. (Consult P-IQ:4) You took English classes at a language center:
 - a. Can I ask what your reasons were at the time for doing that?
 - b. What can you remember about the lessons?
 - c. Was the teacher Thai or English
 - d. What kind of methods did the teacher(s) use?
 - e. And what skills or language areas were focused on?
 - f. What kind of materials (if any) did he/she use?
 - g. Did the teacher speak mainly Thai or English?
 - h. How many people were there in the class?
 - i. How long did you attend classes and for how many hours a week?
 - j. Do you think the methods used were successful and why?
4. What (other) ways did you use outside of English classes to improve your English?
 - a. How successful were they?
 - b. Why do you think they were/were not successful?
5. What did you do between finishing your BA/BSc etc. and your MA/MSc etc. and/or between your MA etc. and your PhD?
6. Many learners find that writing is the most difficult language skill to learn, and writing in an academic style is a further skill to learn. What strategies did you use to develop your general English to become capable of writing for publication in an English language journal?

7. What experiences have you had outside of intentional learning in formal or non-formal classes that helped you to learn to use English successfully, particularly of using English as a medium of communicating with people who did not speak Thai?
8. What do you think the most important period of learning or experience of English that you had that did most to develop your level of English skills?
I'd like to move on now and talk about the article that I edited for you, and to begin with... (consult P-IQ:7)
9. Could you identify the stages in the process involved in writing the article up to the time it was submitted to me to be edited?
 - a. What were the main challenges you faced in completing the article to that point?
 - b. What happened after I edited it?

Next, I'd like to ask you about your general experience and views about publishing work in academic journals.
10. Can I ask how many articles you have been involved in publishing or submitting for publication in both the Thai and English languages?
 - a. And how many of those have been accepted for publication?
 - b. You answered -- to my question about the difficulty of getting those articles published? What do you think are the main difficulties?
 - c. Have you published articles in Thai and how have the experiences been different for publishing in Thai and in English?
 - d. What are your reasons for trying to have your research published in English?
 - e. What are your personal feelings about the need to have work published in English?
11. Finally, please look at this list of areas of English language structure and use and rank them in order of how difficult you find them, from 1 (most difficult) to 6 (least difficult).
 - a. Is there any other area of English language use or structure which you think are more difficult than the 6 areas listed?

Consent form. Thank you...etc.

D Sample rank ordering form

Please rank these six areas of English structure and use in order of how difficult you find them when writing in English (1 most difficult – 6 least difficult):

- () Using the best or correct preposition (words like *of, for, with, about* etc.) where needed.
- () Using nouns (e.g. words like *book, Thailand* and *significance*) including compound nouns (words like *waterfall, computer program, and writing process*) correctly.
- () Using articles (*a, an, the*) and other determiners (e.g. *this, these my, our*) before nouns.
- () Using the correct form of words with different forms (e.g. verb: *succeed*, noun: *success*, adjective: *successful*, adverb, *successfully*).
- () Selecting the best/correct words to express my meanings.
- () Using a writing style appropriate for an academic article.

E Informed consent to participate

The research project I am conducting as a doctoral candidate at Prince of Songkla University under their PhD program in Teaching English as an International Language is provisionally entitled, *An exploratory study of the use of English: Voices of Thai academics*. The study has two stages.

- 1) The analysis of the suggestions I made while editing a number of journal articles and proceedings papers in order to investigate the main language problems which academics in Thailand whose first language is not English have when writing in an English academic style.
- 2) A questionnaire and/or an interview with the author aimed at eliciting information concerning their learning and use of English.

The data from the two stages are then analyzed and synthesized to answer a number of research questions relating to the pattern of problems encountered by the whole sample participating in the study, as well as looking at how participants' experiences have helped to shape their ability to use English to publish their work.

I undertake that the information obtained in both stages of the study will be kept absolutely confidential and will be used completely anonymously with neither the names of the participants nor the titles of their papers appearing in my doctoral thesis or any publications produced following the completion of the study. Further, the information collected will be employed for statistical and analytical purposes and any direct use of the language from either the paper or the interview will be rendered in such a way as to ensure that its source cannot be identified.

Thank you for agreeing to participate in my study. Please confirm your agreement to participate by signing under the statement which appears below.

Michael Currie

Participant's consent

I, (*Author's name*) have read and understand the purposes of your study and agree to participate by:

1. Allowing you to analyze the language content of the version of my paper edited by you: (*Title of author's paper*)
2. Completing a questionnaire and participating in an interview the content of which will be used for the purposes of the study.

Signed,

.....

Date.....

Michael Currie*
 Kentong Sinwongsawat**
 Kathleen Nicoletti***

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NON-CONVENTIONAL ENGLISH LANGUAGE USE IN THE WRITING AND SPEECH OF THAI ACADEMIC WRITERS: A PRELIMINARY STUDY

Abstract

This paper reports a preliminary study analyzing non-conventional language use in English manuscripts written by Thai academics and edited by the first author of the paper. The purposes were to classify the non-conventional language uses identified by the editor and to establish if there were common patterns of errors among the authors. The analysis identified the editor's reason for suggesting each change to a manuscript and a nomenclature was constructed based on 15 language structure categories plus five non-structure categories. The writers of the manuscripts sampled were also interviewed in English and a sample of their speech was analyzed based on the nomenclature in respect of structural errors. The numbers of each type and category were compared across writers, and within writers between their writing and speech. High and significant correlations between writers and moderately high and significant correlations within writers were found. The findings suggest directions for further study which may offer valuable insights into whether the use of language for academic purposes and its use as a spoken interpersonal medium are related or whether the two skills are acquired differently.

251

Key words

Thailand, EAP, error analysis, English language learning.

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Sažetak

Rad predstavlja preliminarnu studiju u kojoj se analizira nekonvencionalna upotreba jezika u rukopisima na engleskom jeziku tajlandskih profesora univerziteta, koje je lektorisao prvi autor ovog članka. Ciljevi rada bili su da se klasifikuju nekonvencionalne upotrebe engleskog jezika uočene od strane lektora, kao i da se ustanovi da li postoje zajednički obrasci grešaka među autorima. U analizi su predloženi razlozi lektora za predlaganjem svake izmene u rukopisu i formirana je nomenklatura zasnovana na 15 strukturnih i 5 nestrukturnih jezičkih kategorija. Autori rukopisa iz uzorka intervjuisani su na engleskom jeziku, a uzorak njihovog govora analiziran je na osnovu nomenklature strukturnih grešaka. Broj svake vrste i kategorije grešaka upoređen je po autorima, kao i kod pojedinačnih autora u pogledu njihovog pisanja i govora. Pronađene su visoke i značajne korelacije između autora i umereno visoke i značajne korelacije kod pojedinačnih autora. Rezultati ukazuju na pravce daljih istraživanja, pomoću kojih se može steći dragocen uvid u to da li su upotreba engleskog jezika za akademske potrebe i njegova upotreba u govornom mediju u vezi, ili se te dve veštine stiču na različit način.

Ključne reči

Tajland, engleski jezik za akademske potrebe, analiza grešaka, učenje engleskog jezika.

 252

1. INTRODUCTION

This study arose from work conducted by the first author (the editor), reviewing and editing the language content of manuscripts written by Thai authors before submission to journals published in English. During this work, the editor observed that although these writers could produce extended texts in a generally acceptable academic writing style, they remained prone to errors in grammar that did not generally appear to be in complex English structures, but related to elementary aspects such as verb inflection, noun pluralization and the article system.

Therefore, the initial intention of this work was to study the distribution and causes of structural errors, as well as other common forms of non-conventional language use (NCU) noted in the manuscripts and to consider the underlying reason for each change suggested. The term *NCU* covers instances where in editing a manuscript, the editor recommended a change based on any factor other than the information content of the paper. The term thus covers both language structure-based 'errors' (i.e. morphology or syntax), and non-structure NCUs, that is uses of language not conforming to accepted patterns of lexical use or rhetorical style in

general English or within the academic writing genre. The term *structure NCU* is also used, particularly in relation to the analysis of speech samples where only structural 'errors' were considered.

The work reported herein was a preliminary study conducted to check the feasibility of a broader study and to prepare and refine the methodology, including developing a nomenclature of NCUs, as well as identifying practical and theoretical questions which a wider analysis of the corpus should address. In order to conduct the study, a small sample from the corpus was selected consistent with the balance of author genders and academic domains making up the overall corpus. The authors selected were approached and their agreement to participate obtained, following which each revision suggested at the time of editing their paper was analyzed and coded according to whether it was due to a structural or non-structural cause (as defined above). In addition, the authors of the manuscripts were interviewed and samples of their spoken English were analyzed in respect of the structure NCUs they contained and the data from the sample of the author's speech was compared with the corresponding data from their manuscript.

Unlike other South East Asian nations with traditional links to European languages, Thailand has never experienced colonization by a European power and Thai has always been the language of government, education and social interchange. Although according to Crystal (2003) there are more than 17 million speakers of English as an additional language in Thailand (out of a population in 2015 of almost 70 million), personal experience and anecdotal reports suggest that that figure overstates the number of people who regularly use the language or are capable of doing so, and Thailand often ranks low in surveys of English ability (e.g. The Nation [2013] reported a survey of English proficiency in 60 non-English speaking countries in which Thailand ranked 55th).

Nevertheless, successive governments have sought to encourage Thais to acquire English, which is a compulsory subject in both the Thai National Curriculum (The Ministry of Education, 2008) and the university entrance examination system. However, the vast majority of Thai school students learn in Thai with the penetration of English as the language of learning restricted to private schools outside the public education system, and English programs in government schools where tuition is partly in English, partly in Thai.

At university, students are required to study English before graduating at undergraduate level and therefore take compulsory foundation English courses and may also take optional English courses. Additionally, most universities now offer undergraduate courses taught in English and there are a small number of universities offering exclusively English medium courses. However, most Thai undergraduate students learn in Thai and are only exposed to English in a handful of courses. Only at masters and doctoral levels does English become a determining factor in education because students must pass an English proficiency test, access both textbooks and journals in English, and also may need to publish their own research in an English journal before graduating.

2. LITERATURE REVIEW

In this preliminary study a data-driven, grounded approach was adopted, broadly guided by Strauss and Corbin (1998), who suggest that where a rich data source is available, widely reviewing literature prior to collecting and analyzing data should be avoided to preclude prejudging issues and simply following previous work in the field. Nevertheless a number of theoretical and practical areas are clearly important to the study and the review that follows identifies the conceptual framework within which the study was conducted.

The study's overall context is academic writing, more specifically English for research publication purposes (Cargill & Burgess, 2008) which is itself a part of what has come to be known as English for academic purposes (EAP). Gillett (1996) situated EAP within the wider field of ESP because it is goal-directed, based on needs, taught to adults rather than children and involves specialist language. While Gillett stressed that EAP covers all uses of English in academic activity, he identified writing as the most important aspect of EAP, and highlighted accurate grammar and language forms as well as the formal language used in the genre as being crucial components of EAP. He noted however that many people with a need for skills in EAP do not have English as their first language. Hyland (2006) also noted that teachers of EAP are not necessarily native English speakers.

The study of errors in second language acquisition (SLA) and in particular contrastive analysis (CA) and error analysis (EA) have a rich literature which is not reviewed here other than to highlight the issue of the influence of a learner's mother tongue (or L1) when learning a second language (L2). This issue underpinned CA, which sought by comparing two languages, to identify where they differed and thereby to predict where difficulty would be encountered by L2 learners because of the transfer of language features from their L1 (Lado, 1957). However, as CA gave way to EA as the dominant paradigm, the influence of the mother tongue in SLA was challenged, (e.g. Corder, 1967; Dulay & Burt, 1974a) and errors came to be viewed as a necessary part of the development of an idiosyncratic interlanguage (Selinker, 1974). Later, however, the influence of the learner's L1 came to be recognized by many of its earlier detractors (e.g. Corder, 1994; Gass & Selinker, 1994) as being a significant factor in SLA.

There have been a number of CA and EA studies in Thailand looking at potential and actual areas giving rise to problems for Thai learners of English. Typical of CA studies is Nathong (1988), who noted significant similarities between the structure of the two languages in basic sentence patterns but also highlighted some important differences. Of these the following areas could potentially give rise to mother tongue effects in the categories included in the nomenclature used to code the NCUs found in the participants' work in this study: articles/determiners,

noun pluralization, possessives, prepositions, pronouns, verb form, word form and word order in noun phrases.

EA-based studies in Thailand have tended to concentrate on texts produced specifically for the study rather than authentic material. Recent exceptions include Sereebenjapol (2003), who looked at science-related theses published in English at a university in Bangkok, and Ayurawatana (2002), who analyzed research proposals submitted at a Thai university. The studies found global errors as well as local grammatical errors with L1 interference being the main cause cited with some errors in areas of English regarded by the researchers as being complex or associated with the order of acquiring language features, mentioned below. The only study traced considering articles written by Thai academics (Jaroongkhongdach, Todd, Keyuravong, & Hall, 2012) did not consider errors in the language used by the authors but concentrated on rhetorical features, attributing the comparatively low quality of the Thai research papers to conflicts between national research policies and academics' motivations for conducting research, as well as national cultural values.

Within the field of SLA, two related issues that have received previous research attention to which the present study might be relevant are the order in which language is acquired and the age at which learners begin learning. The order of acquisition hypothesis proposed by Dulay and Burt (1974b) suggested that there is an invariant order in which English morphemes are acquired which does not depend on learner age. This hypothesis was later extended and refined by Dulay, Burt, & Krashen (1982), who proposed that the acquisition order applied to both children and adults and to both writing and speech. They placed language features into four groups with the later acquired features (perfect auxiliary and past participle) being placed in group IV and case and word order being placed in group I as the earliest learned features. They did not include determiners or articles in the grouped order, but in other work cited (Bailey, Madden, & Krashen, 1974 as cited in Dulay, Burt, & Krashen, 1982), it was suggested that they were among the earliest features acquired.

The order of acquisition hypothesis and the influence of age on learning were later commented on by Johnson and Newport (1989) who, working within a neuro-cognitive framework, tested the ability of Asian immigrants to the USA to detect structural errors through their neural responses. Their findings throw doubt on the suggestion that L1 learning and SLA are comparable, detecting differences in brain responses to sentences containing structural anomalies depending on the age of first exposure to English. They detected a linear relationship between the age at which learners began learning and their ultimate performance, with later learners experiencing greater difficulty in detecting structural errors. They also found that the relative difficulties experienced in different areas of structure were correlated with age of first exposure, supporting Dulay and Burt's (1974b) order of acquisition hypothesis and concluded that the effects were more significant than those of the L1 on SLA. Most notably, difficulties

MICHAEL CURRIE, KEMTONG SINWONGSUWAT & KATHLEEN NICOLETTI

with the use of determiners and noun pluralization produced the highest correlations with age of first exposure, while basic word order and the use of the *ing* morpheme produced the lowest.

3. METHODOLOGY

3.1. The corpus

The corpus from which the sample analyzed was drawn consisted of around 130 manuscripts written by academic authors, most of whom were Thai. These papers had all been reviewed and edited for their language content by the first author (the editor) since 2010. This editing was conducted entirely separately from the analysis carried out in the study and took place at least one year prior to its commencement. Most of the papers were submitted by their authors to the publication clinic at the graduate school of a major university in southern Thailand, who then sent the papers to the editor for review. The manuscripts were written for publication in English academic journals or in some cases to support a presentation at an international conference with publication in its proceedings.

The authors of the papers which made up the corpus were drawn from all five campuses of the university and represented more than half the faculties within them, covering a range of academic disciplines, including science, engineering, IT, the humanities and medical fields such as nursing, and dentistry. The corpus also included a small number of papers reviewed by the editor from authors at other institutions. Before commencing the study, the permission of the graduate school to include the papers in this research was obtained, as was the informed consent of all the authors whose work was included in the study.

256

3.2. Participants

The participants in this preliminary study were purposively selected from amongst the authors whose work made up the corpus. The corpus was analyzed and a small number of papers selected to obtain a sample distributed between the different academic domains represented in the corpus and a mixture of genders spread across different geographical locations and institutions. A total of five authors were approached and all agreed to participate. However, since one author was not in Thailand when interviews were being conducted, he could not be interviewed so this paper reports on the analysis of four authors' work. The methods used in analyzing the papers for NCUs are detailed below under *Data collection and analysis*.

The authors were then interviewed to allow an extended sample of their spoken English to be collected. The interviews were semi-structured and before the interview, a pre-interview questionnaire was sent to each participant requesting background information, on the basis of which an interview guide was constructed, which was used as an aid to conducting the interview. The interviews were ostensibly conducted to obtain the authors' personal and demographic details as well as details of their experience of learning English and publishing articles in journals but the main purpose was to provide material which could be later analyzed for structural NCUs that were then compared to the structural NCUs in their writing. However, other than the information included in the following paragraph regarding the participant's background information, the content of the interviews is not reported in this paper.

All the interviews conducted at the participant's workplace were recorded and lasted between 42 and 73 minutes. The four authors for whom data are included in this paper (A, B, D and E) were from four different academic domains: engineering, life science, IT and the humanities with no two participants working at the same location. Two were female, two were male. They had all undertaken 12 years of elementary and high school education in Thailand. Participants B, D and E all learned in government schools and commenced learning English at age 10 or 11. Participant A, however, attended a private school and began learning English at age 7. All learned English throughout their secondary education. All had gained bachelors and masters degrees at universities in Thailand, two in the South of Thailand, and two in Bangkok. Only one had majored in English. Two had gained PhDs overseas, one in the USA, one in China although English had been the language of instruction used. Their ages ranged from 35 to 45 and none came from privileged or high economic status backgrounds, three having been born in urban areas and one in a rural setting. All had undertaken secondary education in urban settings in southern Thailand, two in their home cities, two in cities distant from where they were born. Once the papers had been analyzed and the interviews conducted, the data were analyzed as described in the following section.

257

3.3. Data collection and analysis

The data collected were the numbers of instances of NCU classified according to type. Data were collected both from the manuscripts and speech samples of each participant. Initially, each instance where the editor had suggested an amendment to the authors' manuscript was identified manually by recording codes on a copy of the edited manuscript, denoting his reason for suggesting the amendment. The codes were generated during the coding process and were descriptive of the reason identified. The nomenclature was further refined by grouping together the codes into five areas, (language) structure, cohesion, (rhetorical and academic)

MICHAEL CURRIE, KEMTONG SINWONGSUWAT & KATHLEEN NICOLETTI

style, lexical use and information content, with a further miscellaneous category covering amendments not falling into one of the mentioned categories.

Since the initial aim of the study was to investigate the problems which these Thai academic writers had in producing structurally accurate English, the structure category was further divided into 15 sub-categories as shown in Tables 1 and 2. The process of constructing the nomenclature was progressive, codes being added as necessary during the coding of each manuscript. A careful record was kept of the use of codes within manuscripts and where necessary, classifications in earlier analyzed papers were amended in line with later amendments. Overall, by the end of the analysis of the papers written by the participating authors, the nomenclature extended to 220 codes.

At the end of the coding of each manuscript, the number of instances of each code was recorded and totals for each sub-category and category determined. These figures were then compared across manuscripts and correlations calculated. The total numbers of NCUs were also compared with the total numbers of words in each manuscript and an NCU per 100 words calculated (hereafter expressed for convenience as NCU%). In total, the four manuscripts included in the analysis amounted to around 16,000 words and the speech samples drawn for analysis from the interviews to 4,000 words.

The NCU data from the speech samples were collected following the transcription of the interviews. In order to sample the speech data, a randomly selected continuous section of the participant's speech of approximately 1,000 words was selected and to render this comparable with the written data, common features of speech not present in written work were disregarded and incomplete utterances treated as being correct so far as uttered. The analysis of the NCUs in the speech data was restricted to structural NCUs with no consideration of lexical issues, style, or information content. The structural NCUs were categorized using the same 15 sub-categories identified in the coding of the manuscripts to produce a snapshot of the problem areas that the participants experienced in their everyday speech, capable of comparison with the analysis of their writing.

Finally, prior to interviewing each participant, the categories and sub-categories of NCU that accounted for more than 5% of the NCUs from their manuscript were identified (in all cases either six or seven categories/sub-categories) and towards the end of each interview the participant was asked to order those areas according to how difficult they regarded them. After the interview the participant's order was compared with the actual order based on the number of NCUs in their manuscript and a Spearman rank order correlation coefficient derived.

258

4. FINDINGS

Table 1 shows the NCU% for all four participants, which ranged between 9.2 and 20.5%, with the structure NCUs ranging from 3.4 to 9.5%. Whilst the number of NCUs detected varied, there was considerable consistency across the four authors in the types of NCU, with correlations at the code, sub-category and category level all significant at $p < 0.05$ or higher. The correlations at individual code level ranged between 0.664 and 0.844 and were all significant at $p < 0.001$ ($df = 218$). At sub-category level they ranged between 0.599 and 0.884 and were all significant at or above $p < 0.01$ ($df = 13$) while at the category level the range was between 0.865 and 0.973, the significance level in all cases exceeding 0.05 ($df = 4$).

This consistency of performance suggests that there may be common factors influencing the accuracy of the writing of the four participants. This is discussed further in section 5 below. The overall pattern of the distribution of NCUs was for structure to account for around half (range, 44.5-59.5%) with lexical and style NCUs each accounting for around 20% (ranges: 12.1-25% and 11.5-26.1%, respectively). Within the structure category, *articles* was consistently the largest sub-category (range 25.3-35.3%) with *prepositions*, *nouns* or *verb related* problems (tense, form and misc.) being the next three largest areas (ranges: 9.1-20.1%, 4.1-16.9% and 5.4-28.3%, respectively). The three sub-categories producing the least NCUs were *possessives*, *adverbs* and *agreement* with ranges of 0-0.7%, 0-2.7% and 0.5-2.7% respectively.

1. STRUCTURE SUB-CATEGORIES: % OF STRUCTURE NCUS					CORRELATIONS (R)		
	A (Ms1)	B	D	E	a. Structure sub-categories		
word order	0.9%	1.4%	4.1%	0.7%	A	B	D
prepositions	13.2%	9.1%	17.8%	20.2%	B	0.812***	
verb tense	5.8%	24.2%	2.7%	11.3%	D	0.757***	0.599**
verb form	8.3%	2.3%	0.0%	6.3%	E	0.886***	0.793***
verb misc.	0.3%	1.8%	2.7%	1.0%			0.750**
articles	35.3%	31.1%	28.8%	25.3%	b. Overall based on		individual
adverbs	1.2%	0.0%	1.4%	2.7%	codes		
nouns	15.0%	16.9%	4.1%	8.4%	A	B	D
compound nouns	4.0%	0.5%	1.4%	8.2%	B	0.694***	
word form	3.4%	8.2%	15.1%	5.1%	D	0.787***	0.664***
conjunctions	4.0%	0.0%	8.2%	2.4%	E	0.807***	0.844***
adjectives and modifiers	3.1%	1.4%	11.0%	2.2%			
possessives	0.3%	0.5%	0.0%	0.7%	** Significant at $p < 0.01$		
agreement	1.2%	0.5%	2.7%	2.4%	*** Significant at $p < 0.001$		
misc. structure	4.0%	2.3%	0.0%	3.1%	a. $df = 13$, b. $df = 218$		
Total Structure NCUs	326	219	73	415			
Total words	5958	2305	2173	5695			
Structure NCU%	5.5%	9.5%	3.4%	7.3%			
2. OVERALL CATEGORIES: % OF TOTAL NCUS					CORRELATIONS		
	A (Ms1)	B	D	E	A	B	D
Structure	59.5%	46.4%	44.5%	45.1%	B	0.915*	

259

MICHAEL CURRIE, KEMTONG SINWONGSUWAT & KATHLEEN NICOLETTI

Lexical	14.6%	12.1%	25.0%	17.1%	D	0.926**	0.865*
Cohesion	5.7%	2.8%	1.2%	2.1%	E	0.940**	0.973**
Style	11.5%	26.1%	12.8%	20.3%			0.950**
Information content	2.2%	6.4%	9.8%	10.3%		* Significant at p<0.05	
Misc.	6.6%	6.4%	6.7%	5.1%		** Significant at p<0.01	
Total NCUs	548	472	164	920		df=4	
Total words	5958	2305	2173	5695			
NCU%	9.2%	20.5%	7.5%	16.2%			

Table 1. NCU% by participant and correlation coefficients

The results of the comparison of the structure NCUs in the participants' writing and the samples of their speech are shown in Table 2. In every case a difference can be seen between the overall structure NCU% although the direction of the difference is not consistent, with participant B showing a higher NCU% for writing than for speech, whereas participants A, D and E all show the opposite trend. However, the differences based on paired sample t tests were not significant at p<0.05 for participants A, B and E although that for participant D was significant at p<0.01. In addition, all the correlation coefficients between the numbers of NCUs for the structure sub-categories were moderate and positive and for participants A, B and E were significant at or above p<0.05.

One way ANOVAs were performed on the two sets of structure NCUs (writing and speech) but no significant differences were detected suggesting a broadly similar level of speech and writing among the four participants (writing: F=2.52, speech: F=1.31; critical value of F=2.77, df=3, 56).

260

	A(Ms1)		B		D		E	
	writing	speech	writing	speech	writing	speech	writing	speech
word order	0.9%	3.5%	1.4%	0.0%	4.1%	2.8%	0.7%	3.3%
prepositions	13.2%	7.0%	9.1%	5.3%	17.0%	14.2%	20.2%	13.1%
verb tense	5.8%	26.3%	24.2%	36.8%	2.7%	2.8%	11.3%	29.4%
verb forms	8.3%	6.1%	2.3%	3.5%	0.0%	6.4%	6.3%	5.9%
verb misc.	0.3%	0.0%	1.8%	10.5%	2.7%	7.1%	1.0%	1.3%
articles	35.3%	18.4%	31.1%	10.5%	28.8%	36.3%	25.3%	16.3%
adverb	1.2%	0.9%	0.0%	3.5%	1.4%	1.4%	2.7%	2.0%
nouns	15.0%	24.6%	16.9%	5.3%	4.1%	11.3%	8.4%	13.7%
compound nouns	4.0%	0.0%	0.5%	0.0%	1.4%	0.0%	8.2%	0.7%
word forms	3.4%	0.0%	8.2%	8.8%	15.1%	5.7%	5.1%	3.3%
conjunctions	4.0%	4.4%	0.0%	0.0%	8.2%	2.8%	2.4%	2.6%
adjectives and modifiers	3.1%	0.0%	1.4%	0.0%	11.0%	0.0%	2.2%	0.0%
possessives	0.3%	0.0%	0.5%	5.3%	0.0%	0.0%	0.7%	0.0%
agreement	1.2%	0.9%	0.5%	10.5%	2.7%	9.9%	2.4%	1.3%
misc. structure	4.0%	7.9%	2.3%	0.0%	0.0%	19.1%	3.1%	7.2%
Total Structure NCUs	326	114	219	57	73	141	415	153
Total words	5958	1002	2305	1011	2173	1016	5695	1002
Structure NCU%	5.5%	11.4%	9.5%	5.6%	3.4%	13.9%	7.3%	15.3%
Correlation (r) writing/speech	0.611*		0.626*		0.387 ^{ns}		0.664**	
t value (based on NCU%)	0.709 ^{ns}		1.372 ^{ns}		3.457**		0.705 ^{ns}	

** Significant at P<0.01, * Significant at p<0.05; ^{ns} Not significant at p<0.05; df=13

Table 2. Comparison of NCUs in participants' writing and speech samples

ESP Today

Vol. 4(2)(2016): 251-264

Finally, the participants' rating of difficulty of the areas which had produced the greatest numbers of NCUs in their writing were compared with the actual order and the Spearman rank order correlation coefficients are shown in Table 3. As can be seen, none of the participants were very successful, with A, D and E all producing non-significant negative correlations between the predicted and actual orders and only B producing a small positive, though non-significant correlation.

PARTICIPANT	A	B	D	E
Number of areas ordered	7	6	6	7
Spearman rank order coefficient	-0.071 ^{ns}	0.257 ^{ns}	-0.377 ^{ns}	-0.414 ^{ns}
^{ns} Not significant at p<0.05				

Table 3. Comparison of participants' ordering of areas producing the greatest number of NCUs

In summary therefore, although the numbers of NCU per participant varied (but not significantly), the patterns of NCU distribution were highly and significantly correlated. Further, the patterns of the participants' NCUs in their spoken and written English were moderately correlated, in three cases significantly, and only one participant produced a significant difference in spoken and written performance.

Overall, language structure accounted for approximately half the NCUs recorded with *articles, nouns, verbs* and *prepositions* producing the most structure NCUs and lexical and rhetorical issues accounting for most of the balance. Finally, the participants were unsuccessful in identifying the areas where they had produced the largest numbers of NCUs.

5. DISCUSSION

This, it must be emphasized, was a preliminary study aimed at establishing the feasibility of the method and identifying issues on which to focus in a broader study involving a larger sample drawn from the corpus of manuscripts. Therefore, at this stage it is only possible to identify possible patterns in the data particularly those indicative of similar trends in the participants' use of English.

The first area in which a trend can be observed is the distribution of NCUs in the four manuscripts analyzed, with broadly similar proportions of NCUs being attributable to structural errors and to non-structural causes related to writing style. Further, the distribution of structural NCUs was, as anticipated, heavily weighted towards areas such as article and noun use, preposition use, and verb inflection, all areas in which Thai and English differ, and the possibility of a 'mother tongue' effect influencing the learning of English by these academics

MICHAEL CURRIE, KEMTONG SINWONGSUWAT & KATHLEEN NICOLETTI

cannot be dismissed. This is also supported by the generally high correlations between the NCU% for the four participants, indicating that they all have broadly similar difficulties in controlling English grammatical usage which cannot be unrelated to the fact that all were brought up in Thailand speaking Thai as an L1 and all had similar educational backgrounds.

The distribution of errors also points to a hierarchical order of acquisition crudely agreeing with the ideas of Dulay and Burt (1974b), although the order suggested by the frequencies of errors made by the four participants in this study was closer to the order inferred by Johnson and Newport (1989) based on correlating numbers of errors with the age their participants, all immigrants of Asian origin, began learning English. They found correlations above 0.6 for (in descending order), past tense, plurals, pronouns and determiners. The order was much less closely aligned to Dulay and Burt's (1974b) order based on Spanish-speaking immigrant children in the US. Clearly, based on this small sample, no conclusion can be reached, but the findings suggest that if there is an order of acquisition effect, it may be idiosyncratic for Thai learners, again pointing to L1 influence.

Finally, the generally high correlations found between the structure NCU% in the participants' speech and writing suggest that there are common factors affecting both their ability to communicate verbally and their ability to use English as a written medium for academic purposes. However, such a small sample as this, confined as it is to academics, may not be representative of the broader population in Thailand where few people use English to any significant extent, and the effect may be of more significance in academics, who are a group within Thailand who do need to use English on a regular basis.

262

6. CONCLUSION

This preliminary study has produced data suggesting that the English proficiency in both the speech and writing of these advanced Thai users of English is affected by similar underlying problems. The findings also strongly suggest that the participants' learning of English was influenced by Thai, their L1 but there was also limited support for the order of acquisition hypothesis, though perhaps one idiosyncratic to Thai learners.

Therefore, an extended study is clearly warranted using the same basic methodology to collect a broader sample of data from a wider pool of participants. The information from such a study would contribute to a better understanding of how academics in Thailand acquire basic language skills and then use them to develop their ability to use English in academic discourses and particularly to conduct research and publish articles in English language journals. It would also add to the knowledge of how academic language is acquired in environments where the language being learned is not widely spoken or used and how academics

in such contexts overcome their difficulties with English and use the language to make their work available to a wider international audience.

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264

Paper 2

THE INFLUENCE OF WORD-TYPE FREQUENCY AND MOTHER TONGUE EFFECTS ON NON-CONVENTIONAL ENGLISH-STRUCTURE USAGE IN THAI ACADEMICS' WRITING

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Abstract

The study reported analyzed 26 manuscripts written by Thai academics for publication in English language journals. The analysis was based on the suggestions for changes made by a native-English speaking editor prior to submission. The study aimed to establish which areas of English structure cause most problems to Thai writers at this level. The overall study employed a mixed-methods approach although the findings reported in this paper are derived from the quantitative analysis of the non-conventional usage (NCU) of English in the manuscripts. The paper reviews previous error analyses of English writing by Thais, mostly involving high school or undergraduate students. The paper compares the findings of those studies with those of the study reported, finding that four of the main problem areas identified in those studies (article, verb, preposition and noun usage) were also the structural aspects most frequently identified in the 26 manuscripts analyzed, accounting for more than 80% of the structure NCU. However, the study also analyzed the number of tokens of each word type in the manuscripts and identified a correlation of 0.86 between the errors in those word types and the frequency of occurrence of the word types in the manuscripts. Previous studies have not identified such a relationship thus potentially misrepresenting the level of difficulty presented by different word-type usage. Nevertheless the areas giving rise to most problems are also noted to coincide with areas where Thai language structure differs from English and based on an associative learning theoretical framework, the paper concludes that although the distribution of word types in the manuscripts is a significant influence on the pattern of NCU, the influence of the L1 is the major factor behind the main types of errors identified. The paper concludes that a relatively small number of areas should be targeted at all stages of the teaching of English, notably the use of the definite article, the past and present simple tenses, singular and plural nouns and preposition use generally, in order that problems in these areas should not later become entrenched in higher level usage.

Keywords

Academic writing, error analysis, language structure, word type, word frequency

Academic writing falls within the broader genre of English for academic purposes (EAP) which Gillett (1996) noted, covers all aspects of the use of English in the academic field, although identifying writing as the most important, with accurate grammar and the formal language of the genre being crucial components. English is well established as an international language in academic publication and is widely

accepted even in countries where English is not commonly spoken. Larsen and von Ins (2010), in reviewing a number of subject areas, noted a tendency for publication indexes to favor journals publishing articles in English and as an extreme example, Clarke et al. (2007) reviewed over 200,000 articles in the field of public health listed in the Science Citation Index and found that 96.5% were written in English. Further, as Vasconcelos, Soerenson and Leta (2009) noted, a lack of skill in English is a significant barrier for publication in international journals. There is therefore considerable pressure on academics to write in English but for those whose first language is not English, this can present a considerable challenge. This is the case in Thailand, which has no historical connection with the English speaking world either through colonial occupation or a common cultural heritage, and English skills are not widespread. In the latest EF-EPI survey (2018), Thailand ranked 64th of 88 non-English speaking countries for English proficiency.

The broader study from which this paper is drawn was based on the work of authors mostly based in the south of Thailand who had sought to have their work edited by a native speaker prior to submission for publication in English. The study arose from the editor's observation that a substantial proportion of the changes he recommended were based on the authors' difficulties in correctly using apparently simple aspects of English structure. This was surprising since the authors were generally able to control the rhetorical aspects of the academic writing genre, yet had great problems in basic aspects of structure such as the use of articles, verb tenses and noun pluralization. No previous study in Thailand has investigated this phenomenon in writers at this level, who by their ability to succeed in writing articles in English for publication in academic journals, must be assumed to be among the top tier of English users in Thailand. This paper therefore offers a rare insight into the use of English by a professional group in Thailand for whom that use is dictated by the demands of their careers.

Although there have been previous findings of structure-usage problems in writing by Thais, past studies, of which more than 30 conducted since 2000 were traced and are detailed in Table 1, have focused almost exclusively on students during their education and on English writings either produced specifically for the purposes of the study or for purposes associated with their education. This study sought to establish whether the problems evidenced by the non-conventional usage (NCU) of English structure by these 26 Thai academics were similar to those which previous studies have identified among Thai students. This paper therefore presents the results of the analysis of the changes the editor recommended to the 26 papers and focuses on those changes recommended to remedy non-conventional language structure.

The following section reviews recent studies employing error analysis (EA) in Thailand and sets out the study's theoretical framework with respect to the identification of mother-tongue (or L1) influence on second language (L2) learning before setting out the research questions considered in this paper. The study's methodology and results are described and then discussed, and conclusions are offered in the final section.

Literature review and research questions

Errors in second language learning

The history of the treatment of errors in L2 learning can be traced back to the behaviorists who viewed language as a habit and employed the technique of

contrastive analysis (CA) to identify structural differences between languages and to predict the errors learners would make in learning an L2 through L1 effects (Lado, 1957). But as the influence of behaviorism waned, the treatment of errors shifted to a perspective which viewed the learner as producing a transitional idiolect or interlanguage (IL) (Selinker, 1972). Under this approach, errors were viewed as indicative of learning and arose due to a variety of causes including external factors, such as the learner's L1 and the conditions under which the language was learned, as well as intra-linguistic and developmental factors, which were described by Richards (1970) as systematic errors common to learners with different L1s, including overgeneralization, ignorance or incomplete application of rules and the creation of false hypotheses.

Error analysis is a well-used technique of analyzing language production and the subject has its own published bibliography, which in its latest edition (Spillner, 2017) identifies more than 6000 studies. The genesis and conduct of EA is also set out at book-length in James (1998) and was usefully reviewed by Sompong (2014), who identified a number of recent studies conducted in Thailand. A more extensive review of Thai studies into aspects of EFL writing research in Thailand was carried out by Chuenchaichon (2014), who identified 48 studies conducted between 2004 and 2013 of which nine dealt with writing errors, although of those only four were studies which could strictly be said to constitute EA. Hinnon (2015) also reviewed EA studies in Thailand, citing nine, split into three groups, grammatical-lexical errors, L1 interference errors and errors in writing organization.

In fact the authors have traced 33 EA studies conducted in Thailand since 2000 which are detailed in Table 1. This list is not exhaustive and only includes generalized EA studies which included but were not necessarily restricted to grammatical errors. Thus, work which studied only particular areas are excluded, notably Pongpairoj's (2007) and Nopjirapong's (2011) studies of article errors. Also excluded are the only two studies traced, analyzing journal articles written by Thai academics (Amnuai and Wannaruk, 2012; Jaroongkhongdach, Watson-Todd, Keyuravong, and Hall, 2012) since they did not consider grammatical aspects of the authors' work. Of the 33 studies listed in Table 1, only Sereebenjapol (2003), Bootchuy (2008) and Runkati (2013) studied post-graduate students. Most of the studies analyzed work by undergraduate and high-school students (23 and 5 respectively), while only two (Chakorn, 2005; Hutyamanivudhi, 2001) considered writing in a non-educational context by analyzing business correspondence.

Table 1 shows the major areas identified in the studies as giving rise to errors (more than 5% of the total, or as identified in its abstract or in a citation in another work). Summing the areas identified shows that the largest number of references (25) were to errors in verbs, notably in tenses or forms, while prepositions (18) and articles and determiners (18) were the next largest categories. Other categories identified included fragments or the ellipsis of sentence elements (15), nouns including pluralization (14), subject/verb agreement (14), sentence structure/syntax (13) mechanical errors (13), lexical choice (12), word order (8) pronouns, adjectives and word form (4 each) conjunctions and subordinators (3) and adverbs (2). Whilst these figures are not intended as an accurate meta-analysis of the findings of the studies, they do broadly indicate the areas which the studies identified as causing most problems for their participants. Further, in considering the studies' methodologies, it

is notable that none considered the frequency of the occurrence of different word types in the participants' work in order to take that into consideration when assessing the level of difficulty faced by the users in using particular types of words in their work.

Finally, the cause of the errors identified were largely attributed either partly or wholly to L1 effects (24 studies) and/or based on Richards' (1970) classification referred to above (overgeneralization, etc. – 12 studies). Other causes referred to include carelessness, translating from Thai and poor language skills.

Mother tongue influence

The preponderance of attributions to mother tongue influence in the EA studies of Thai students at various stages of their education noted above suggests that this is an aspect which would be of interest in the current study of authors, all of whom were at a more advanced stage in their learning and use of English. The effect of the L1 on the learning of an L2 has been a focus of research for many years dating back to the CA era referred to above, where areas likely to give rise to errors were predicted based on differences detected between languages. However as James (1998) and many other writers have noted, CA was to a large extent unsuccessful as a predictive methodology, although a form of post-dictive or diagnostic CA involving the comparison of languages to help explain errors in learners' ILs through cross-linguistic influence became an accepted part of EA.

While Odlin (2012) suggests that "... the problems related to cross-linguistic influence are so varied and so complex that there does not exist any really detailed theory of language transfer" he notes that there are two, widely recognized methods by which mother tongue influence is diagnosed. The first is the post-dictive comparison of languages mentioned above, which was first used by Selinker (1969) in his ground-breaking study of English word-order errors by Hebrew-speaking English learners, and both James (1998) and Odlin note that the most often used formula on which attributions of mother tongue interference are based are those involving a three-way comparison between the L2, the learners' L1 and their IL. The other method identified by Odlin, is the three-part framework suggested by Jarvis (2000) encompassing intra-L1 group and inter-L1 group comparisons and comparisons between the target groups' ILs and the L2. Jarvis's study used sample groups in Finland with Swedish and Finnish as their L1s and assessed the effect of those L1s on their learning of English. However in the present study, no obvious comparable group of academics in Thailand existed who shared a similar socio-cultural context but had different L1s to enable inter-L1 group comparisons. Thus Jarvis's method was not practicable and that originally used by Selinker was therefore preferred.

Meanwhile, James (1998) suggested that the best evidence of language transfer is where non-standard usages from the learner's L1 are transferred to the L2. However such occurrences are unlikely to account for the majority of instances of interference, which are far more likely to be associated with the standard use of the L1, particularly in instances of low salience grammatical features of the L2 which are not shared by the L1 (Ellis, 2006). This is likely to lead to phenomena described as *perceptual blocking* or *overshadowing* which may make the perception and mastery of low-salience and redundant grammatical features, such as tense-related morphemes, articles and prepositions, more difficult, particularly for adult learners, if the equivalent categories do not exist in their L1.

Table 1. Reports of generalized error analysis research in Thailand between 2000 and 2017

Study	Year	Writing from	Main problems detected	Attributed to
Thananart (cited in Sompong, 2014)	2000	U/g students	GS, VF, WC, Sp, transition signals	(Unknown)
Chownahe (cited in Bootchuy, 2008)	2000	H/s students	Adj, V, Trans, WO	Inter E, Intra E & Dev E
Likittrattanaporn (cited in Bennui, 2008)	2001	3rd yr u/g students	SS & WO, art elip	Trans
Hutyamanivudhi	2001	Company officers	V (22%), Prep (19%), Det (16%)	Inter E, overgen and lack of practice
Pongsiriwet (cited in O'Donnell, 2016)	2001	Ist yr u/g students	Sub/V agr, VF & T, NPI, WF, frag, Art, Prep, Pro	Inter E
Srichai	2002	Ist yr u/g students	Det, VT, Prep, Lex, Frag, WO	Inter E
Pongpairoj (cited in O'Donnell, 2016)	2002	Ist yr u/g students	Syn & Lex E, Prep Coll, pl of n/c N, use of existential 'there'	Inter E, Ignorance of differences in Thai & Eng GS
Lush	2002	3rd yr u/g students	Art, sing/pl Ns, interchanged & incorrect VT, Preps, Sub/V agr	(Descriptive study)
Ayuwaratana (cited in Bootchuy, 2008)	2002	4th yr u/g students	Punc, Sub/V agr, Frags & ROSSs	Inter E
Khaoural	2002	U/g students	Preps, VT, Det, Contractions, SS, WC SS, WO, ME, Trans. overgen	IRA & IRR, Inter E & FCH
Serebenjapol	2003	Postgrad students	Art, V, NPI, Subordinators and conj	Carelessness, IRA, Inter E
Khamput	2004	Yr 11 h/s students	WO, Trans, elip Sub	Inter E, Intra E & Dev E
Rurakwit	2004	U/g students	Frags, obj, V & Sub elip, misplacement of advs & adjs	Inter E
Na-Ngam	2004	Ist yr u/g students	Incomplete S, N, Sub/V agr, Sp, VT, Art	Inter E, IRA, FCH, avoidance, carelessness
Chakorn	2005	Company officers	V (22%), Prep (19%), Det (16%)	Inter E

Study	Year	Writing from	Main problems detected	Attributed to
Banlomchon	2006	Yr 12 h/s students	Dets. W/C, VF&T, Ns, Sub/Vagr, Preps (57%), Lex (25%), ME (18%)	Inter E, overgen, IRR, IRA, FCH
Sattayatham and Honsa	2007	1st yr u/g students	Overgen, IRA, FCH	Inter E
Bennui	2008	3rd yr u/g students,	Voc, WO & SS, VT, Sub/Vagr, inf, elip G morph, Prep, Det, overgen and double marking, have/there conf	Inter E, Trans, L1 cultural knowledge and writing style
Sattayatam and Ratanapinyowong	2008	1st yr u/g students	No intro & conc, coh or org. Difficulty using Eng G and paras	Lack of writing ability at a paragraph level
Bootchuay	2008	1st yr post-grad students	Elip S elements (38%), compound & complex S (23%), WO (9%)	Inter E (47%), IRA (9%)
Jenwitheesuk	2009	3rd yr u/g students	Det, Sub/Vagr, VT, Prep	Inter E, FCA ignorance of Eng SS and G
Ampornratana (cited in Phetdannuea and Ngonkum, 2016)	2009	Yr 12 h/s students	VF & T, Pro, Adj, sub/Vagr, Prep, Conj, N, overuse of and elip be, sub/obj rep	Inter E, Intra E and Dev E
Watcharapunyawong and Usaha	2012	2nd yr u/g students	VT&F, WC, SS, Art, Prep, mod &aux, NPI, Frag, Pro, ROSS, Sub/Vagr, Inf/Ger, transitions	
Runkati	2013	Postgrad students	Art (26%), N (18%), Prep (13%) V (6%)	Inter E (assumed) (Not stated)
Nonkukhetkhong	2013	1st yr u/g students	V, N, Poss, Art, Prep, Adj and Adv (47%), Syn (20%) substance & ME (19%) Lex (12%)	Inter E, overgen, IRR, IRA
Iamsiu	2014	2nd yr u/g students	WC (46%), SS (33%), Sub/Vagr (13%), WO (11%)	Inter E
Andania	2015	Yr 7 h/s students	NPI, VT, Sub/Vagr, WF, extraneous Sub, Punc	(Descriptive study) Inter E, Intra E, overgen, IRA, IRR
Rattana dilok-Na-Phuket	2015	2nd & 3rd yr u/g students	Trans, VT, Prep, WC, VF, Sp	Weak language skills, not noticing & Inter E
O'Donnell	2015	1st yr u/g students	VT, ME, Art & Det, Pro, NPI, Sub/Vagr, Prep	

Study	Year	Writing from	Main problems detected	Attributed to
Phetdannuea and Ngongkum	2016	2nd yr u/g students	Sub/Vagr, Det, ROS, Trans, VT SS, NPI, Punc, VF, Prep WC	Inter E, IRR, IRA, FCH
Promsupa, Varasarin and Brudhiprabha	2017	2nd yr u/g students	Morph E (82%) NPI (34%), Art (22%), Prep (5%), Syn (18%)	Inter E, Intra E & and Dev E
Suvarnamani	2017	1st yr u/g students	VT (Past/present simple) (72%), elip V bc, Frag, Prep	Wrong pron, inconsistency. lack of care, Inter E, Trans
Sermsook, Liamnimitr and Pochakorn	2017	2nd yr Eng major students	punc, Art, Sub/Vagr, V & VT, frag, capitalization, Prep, Sp	inter, lack of grammar knowledge, carelessness

Key.

h/s – high school; u/g - undergraduate; yr - year.

Problem types: Adj - adjective(s); Adv - adverb(s); Art - article(s); be/have - confusion of be and have; coh - cohesion; conc - conclusion; Conj - conjunction(s) Coll - collocation; Det - determiner(s); elip - elipsis; Frag - fragments; Ger - gerund; Inf - infinitive; G - grammar/grammatical; GS - grammatical structure; have/there conf - using have instead of there (is/are); intro - introduction; ME - mechanical error(s); morph - morpheme(s)/morphological; mods & auxs - modal and auxiliary verbs; morpheme(s)/ morphological; n/c - non-count; N - noun; NPI - noun plural(ization); Obj - object(s); org - organization; para - paragraph(s); Poss - possessive (s/case); Prep - preposition(s); Pro - pronoun(s); Punc - punctuation; rep – repetition; ROS - run-on sentences; S - sentence(s); SS - sentence structure; sing - singular; Sp- spelling; Sub - subject(s); Sub/Vagr - subject verb agreement; Syn - syntax/syntactical; V - verb(s); VF- verb form; VT - verb tense; Voc - vocabulary; WC - word choice; WF - word form; WO - word order.

Causes etc.: Dev - developmental; E - error(s) FCH - false concepts hypothesized: IRR - ignorance of rule restrictions; Inter - interlingual (including L1 transfer & mother tongue influence); Intra - intralingual; IRA - incomplete rule application; overgen - overgeneralization; pron - pronunciation; Trans -(direct) translation from

Ellis (2006), drawing on associative learning theory, noted that L2 learners frequently fail to master aspects of language to which they are frequently and repetitively exposed because the cues which ought to promote learning are overshadowed by the greater salience of the existing L1. In divining meaning and regularities from L2 input, a learner thus begins by using the *cue weights* associated with their L1, but over time should tend towards the norms of the L2. However, the existing predominance of the L1 makes it highly unlikely that the learner will ever develop a native-like mastery and, as recently observed by Hartshorne, Tenenbaum and Pinker (2018), in a study of grammatical awareness involving almost 700,000 participants, due to *cue competition*, even bilinguals from birth rarely attain mono-lingual native-like performance in either of their languages. Ellis went on to suggest that the L2 learner may not only initially fail to recognize cues such as grammatical morphemes with low salience and high redundancy, but that exposure over time may actually make this tendency more marked as the L2 learner simply becomes habituated to the cues without forming regularized form-meaning mappings.

Thus, this study considered whether the NCU data suggested that the distribution of NCUs in the authors' written work showed an influence from their Thai L1 by comparing the main structural areas in which NCU occurred in their English with the equivalent areas in Thai, based on a summarized description appearing in Boutchuy (2008), and whether the types of NCU which gave rise to the need for changes in their manuscripts suggest the perceptual blocking and overshadowing noted by Ellis (2006) to be a feature of long-term L2 learners ILs.

Research questions dealt with in this paper

Therefore in this paper, the following questions are addressed:

1. What are the main areas of English language structure in which the participants' academic writing differs from conventional native speaker usage?
2. Does the distribution of non-conventional usage:
 - a) reflect the distribution of different word types in the participants' work?
 - b) suggest an effect from their Thai language backgrounds?

Methodology

Source of data and selection of participants

All the language data presented in this paper were derived from a corpus accumulated by the first author consisting of manuscripts edited by him while acting as a consultant for a publications clinic operated by the Graduate School's Research and Development Office (RDO) at a university in southern Thailand. The editing of the papers was therefore not undertaken specifically for the study, but was conducted, in most cases, before the study commenced, and its primary purpose (which was to render the English in the paper acceptable for publication) was not directly related to the study. When data collection commenced in early 2016, the corpus consisted of 126 manuscripts but that figure had grown to over 200 by the time data collection was completed at the end of 2017. The sample of 26 manuscripts analyzed in the study was drawn from papers prepared both prior to and during the study period and altogether spanned the 8-year period 2010 – 2017.

The papers which formed the corpus related to a variety of academic disciplines ranging across the university's faculties which comprised four health science related faculties (nursing, dentistry, medical technology and Thai traditional medicine), seven science and technology faculties (science, engineering, computer science, agro industry,

natural resources, technology and environment, environmental management), and five humanities and social science faculties, (H and SS, liberal arts, management sciences, economics and education.) They were generally edited without direct contact with the authors. Thus, when selecting papers for inclusion in the sample, the researchers normally had no information relating to the authors beyond their names and faculty affiliations and it was not possible to control for demographic factors.

Papers were selected purposively with the aim of including papers from all or most of the faculties represented in the corpus at the beginning of the study. In this, the sampling procedure was successful with papers being analyzed from 15 of the 16 different faculties indicated above, including at least one paper from each of the university's five campuses in Southern Thailand, and work also being included from writers from three other universities, who had formerly worked or studied at that university. Nevertheless, the composition of the final sample was heavily influenced by the willingness of authors to participate in the study, since, as noted below, participation was voluntary and no papers were included in the sample without the specific agreement of the author. Further, the corpus included multiple works from some authors and the sample of papers was selected with no author being represented more than once, either as a principal or co-author.

Potential participating authors were approached individually by an e mail in which the study's purposes were detailed. The authors were assured of the anonymous use of their work and all the authors who agreed to participate later signed an informed consent form. On receipt of the authors' agreement, their work was analyzed as detailed below, following which they were interviewed although the content of those interviews is not dealt with in this paper. Of the 26 authors of the manuscripts in the sample, 17 were female and nine were male. All were Thai nationals with Thai as their L1 and all had received formal education up to bachelor's degree level in Thailand, with some completing higher degrees in Thailand, others studying abroad. All held at least a master's degree with 21 also holding PhDs. At the time of editing their articles, all but one were employed as lecturers with one being a post-graduate student.

Analysis of the manuscripts

The manuscripts were analyzed in order to determine the reason that the editor (i.e. the first author) had recommended each change suggested at the time of editing the manuscript. As indicated above, the purpose of editing the manuscripts was not related to the purposes of this study, but was to render the manuscript in English expressing the author's meanings in a manner acceptable to the journal to which the paper was submitted for publication. The primary purposes therefore were to: 1) improve and correct structural and grammatical usage and mechanical aspects of the writing; 2) improve the rhetorical style, cohesion and lexical use consistent with the usages of academic writing, and 3) suggest changes which would improve the reader's ability to understand the content including where necessary the information content.

In analyzing the changes suggested during the editing of the manuscripts, the first author developed his own coding nomenclature during a pilot study conducted in early 2016, the outcome of which formed the basis of Currie, Sinwongsuwat and Nicoletti (2016) and covered four participants, all of whom are part of the sample included in the present study. The nomenclature was further extended during the remainder of the manuscript analyses but was rationalized at its conclusion to consist of 234 codes divided into six categories, *structure* (including grammatical usage, 192

codes), *lexical issues* (5 codes), *cohesion* (9 codes), *rhetorical style* (18 codes), *information content* (2 codes) and *miscellaneous* covering mechanical and non-language issues (8 codes). Further, the *structure* category was divided into 14 sub-categories: *word order, prepositions, verbs, articles and determiners, adverbs, nouns and compound nouns, word form, conjunctions, adjectives and modifiers, possessives, agreement, relative pronouns, pronouns, and miscellaneous structure*.

The coding was conducted manually with each change suggested being isolated and coded on a copy of the manuscript based on the researcher's own reason for suggesting the change. Codes for the *structure* sub-categories identified precisely what change was felt to be necessary; e.g. where a change of tense was necessary, the original and suggested tense were both identified in the code. For the non-structure categories the codes were less detailed since these were not the focus of the study. At the end of the coding, the individual codes were recorded page-wise in the manuscript on an Excel spreadsheet so that they could be located to be checked or amended if necessary. The full list of tokens allotted to each code was then recorded on a cumulative spreadsheet.

The results obtained therefore represent an account of the editing of the manuscripts based on the editors' own, albeit, subjective reasons for recommending the changes he did. They are therefore an indication of the distance between the editor's native-speaker version of English and the writer's IL in the terms defined by Selinker (1972). Nevertheless in an effort to validate the approach adopted in analyzing the manuscripts, one of the aspects discussed with the participants during the interview was the extent to which the suggestions made had been adopted before the manuscript was submitted to the journal and whether, during the editorial and peer review process, it was necessary to further improve the English language (as opposed to the academic) content. In almost all cases the writers indicated having accepted all or most of the suggestions and only rarely was the writer asked to improve the English language content, although in a number of instances the papers were further reviewed by the editor in order to check changes to the academic content subsequent to peer review.

In order to check the consistency of the coding procedure, an additional paper for each of two authors for whom more than one paper was included in the corpus was also analyzed, although the results of those analyses were not included in the main results. However the two papers analyzed for each author were then compared to establish if the allocation of codes was consistent, indicating both that the coding procedure was reliable and also that it was detecting consistent patterns of NCU and was thus a valid measure of the author's performance. The results of this comparison are shown in Table 2 and as can be seen, at all levels (overall codes, structure codes only, structure sub-categories and overall categories) there were high and significant correlations detected confirming both the consistency of the coding procedure and also that its outcome was a valid reflection the authors' performance.

Table 2. Correlations between coding of two papers from two authors

		Author 1	Author 2
Paper included in analysis	NCU %w overall	9.37 %w	6.60 %w
	NCU %w structure only	5.56 %w	4.31 %w

Additional paper analyzed	NCU %w overall	3.19 %w	7.34 %w
	NCU %w structure only	1.76 %w	4.53 %w
Correlations:			
Overall codes (df, 232)		0.826***	0.960***
Structure codes only (df, 190)		0.856***	0.986***
Structure sub-categories (df, 12)		0.945***	0.993***
Main categories (df, 4)		0.962***	0.998***

Notes. NCU%w: non-conventional usages per 100 words in text

*** significant at $p < .001$ (df as shown in parentheses in table)

Data analysis

In order to compare the distribution of NCUs identified in the manuscripts with the distribution of word types, the original versions of the manuscripts prior to being edited were analyzed using the Wmatrix word-tagging application (Rayson, 2009) which produces a CLAWS (constituent likelihood automatic word-tagging system) v.7 tag-set. The word-type analysis derived from this tag-set employs 137 codes, the tokens from which were each allotted to one of the 11 sub-categories relating to particular word types out of the 14 *structure* sub-categories. Later, as described below, further adjustments were made to the coding alignment to render the NCU data and the CLAWS-derived data as closely comparable as possible and the two data sets were then compared using percentages to illustrate the distribution of NCUs to categories, sub-categories and individual codes, and Pearson product moment correlations to compare the distribution of word types and NCUs in the manuscripts. The assessment of the effect of the authors' L1 on their English writing was based on a comparison of the treatment of the main structural areas in which NCU was detected with the equivalent areas in Thai based on the description in Bootchuy (2008).

Results

In this section, the study's results will be outlined based on the research questions identified in Section 2, the first of which asked:

What are the main areas of English language structure in which the participants' academic writing differs from conventional native speaker usage?

The 26 texts analyzed contained a total of 112923 words and 15993 changes were suggested by the editor of which approximately 56% (8931) were classified as relating to language structure, at an average rate of 7.91 NCUs per 100 words. The NCUs categorized into the 14 *structure* sub-categories in the primary analysis which are the focus of this paper are illustrated in Figure 1 and detailed in Table 3 below.

Within the structure sub-categories, it can be seen that *articles and determiners* were overwhelmingly the largest source of NCUs accounting for almost 40% (3453 out of 8931). Of the remaining sub-categories, *prepositions, verbs* and

Figure 1. Breakdown of structure NCUs between 14 sub-categories

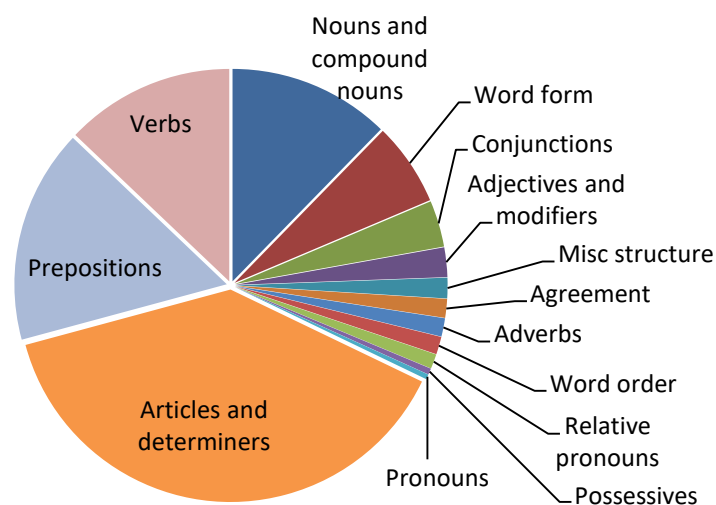


Table 3. Number of structure NCUs by sub-category

Structure sub category	Total NCUs
Word order	120
Prepositions	1456
Verbs	1152
Articles and determiners	3453
Adverbs	125
Nouns & compound nouns.	1099
Word form	565
Conjunctions	316
Adjectives and modifiers	201
Possessives	42
Agreement	128
Relative pronouns	100
Pronouns	34
Misc. structure	140
Structure NCU total (26 texts)	8931
Total words reviewed (26 Texts)	112923

nouns and compound nouns also produced substantial totals (1456, 1152 and 1099, respectively) and the four largest sub-categories together represented over 80% of the structure NCUs.

To complete consideration of research question 1, the NCU data were considered at the individual code level to try to identify the main types of NCUs within the individual sub-categories. As stated above, the largest single NCU type was the omission of the definite article *the*, and overall the absence of articles etc. in obligatory situations accounted for 2425 or 28% of the NCUs. Of the remaining tokens from the *articles and determiners* sub category, 763 involved the inappropriate use of *the*, with only 126 relating to the misuse of an indefinite article. Clearly there was considerable

confusion among the authors about the use of articles in general, and in respect of the use of *the* in particular.

Among the other sub-categories, *prepositions* NCUs (1456) mostly concerned incorrect preposition choice (863) with the omission of a preposition or the use of a preposition where none was needed accounting for, respectively, 231 and 208 NCUs. From the *verbs* sub-category, 659 tokens related to inappropriate tense choice, of which 432 related to the over-use of the present simple tense, and of those, 367 concerned the use of the present simple tense instead of the past simple tense. Incorrect choice of the past simple tense itself accounted for 152 tokens, 93 in situations where the present simple was indicated and 50 where the present perfect was the appropriate choice. Of the remaining verb NCUs, 297 concerned the use of an incorrect verb form, while 87 related to incorrectly formulated or used passive voice constructions. Within the *nouns* sub-category, problems were overwhelmingly related to the incorrect use of plural and singular count nouns with 804 singular forms being incorrectly used instead of a plural, and inappropriately used plural nouns numbering 220.

Research question 2a asked:

Does the distribution of non-conventional usage reflect the distribution of different word types in the participants' work?

Therefore, in the next stage of the data analysis the CLAWS tag-sets were used to consider how closely aligned were the distributions of the NCUs and the tokens of the word types in their work.

Table 4. Word-type tokens per Wmatrix

Word class	Words
Prepositions	14547
Verbs	16217
Articles and determiners	17243
Adverbs	3301
Nouns and compound nouns	37876
Conjunctions	6649
Adjectives and modifiers	10460
Possessives	100
Relative pronouns	616
Pronouns	1333
Misc. structure	876
Not classified	3705
Total	112923
Total classified	109218

Table 4 presents the overall Wmatrix classification which was able to categorize around 97% of the words (109218 tokens) in the manuscripts into the 11 sub-categories used in the initial NCU analysis for which there were direct analogs, with the items not categorized being formulae, figures and letters in the text, foreign words and the infinitive marker *to* which was counted as part of a verb. However the 14 *structure* sub-categories on which the NCU analysis had been conducted included *word order*, *word*

form and *agreement* which had no analogs in Wmatrix, as well as some individual codes within the *adjectives and modifiers* and *miscellaneous* categories which related to clause or sentence level errors which could not be aligned with the Wmatrix distribution. Moreover from the individual codings within the *structure* sub-categories, it was found that the largest number of NCUs related to the omission of the definite article, *the* (1921 tokens) and that a further 504 tokens related to the omission of an article or determiner in an obligatory situation. Therefore, 70% of the overall tokens attributed to *articles and determiners* in the structure NCU analysis had no analog in the CLAWS tag-sets which do not record the use of the *no article* category within the English article system. As Swan (1996) notes, the use of no article before a plural or non-count noun signifies a general reference to the thing etc. denoted by that noun and the *no article* category signifies a distinct type of noun usage and represents an important part of the determiner system.

Therefore, in order to align the NCU analysis with the CLAWS tag-sets, a number of adjustments were made. Firstly, the *word form* and *agreement* tokens were allocated to their respective parts-of-speech sub-categories based on the part of speech which was incorrectly used in the manuscript, Secondly, for the *word order* sub-category, where the NCU related to the misplacement of a single word or to the ordering of adjectives before a noun, the tokens were moved into the appropriate word-type sub-category, with the remaining 88 more egregious word order NCUs being removed from the analysis. Also removed were 83 clause and sentence level NCUs from *adjectives and modifiers* and 110 NCUs from the *miscellaneous* category, with the excluded structure NCUs amounting to about 3% of the total, leaving 8650 NCUs to be compared with the CLAWS word-type data from the manuscripts.

For the *no article* NCUs it was decided to combine the *articles and determiners* and *possessives* sub-categories (since, as Swan (1996) notes, “ „s genitives” (p. 64) are used in place of articles, so effectively complement the determination system of English nouns and to compare the number of *articles and determiners* NCUs including the *no article* tokens, with the number of nouns recorded by the CLAWS tag-set rather than the numbers of articles, determiners and possessives, thus effectively counting the number of *no article* usages as well as those where articles were used correctly or incorrectly in the manuscripts. Adopting this measure increased the number of tokens classified in the texts from 109218 to 129751 by including the 20533 instances where nouns were used which were not preceded by an article, determiner or a possessive.

Table 5 below shows the final adjusted tokens of words and NCUs compared based on percentages, and Figure 2 a and b below show the distributions in chart form. A correlation coefficient was derived comparing the NCU's per word type with the number of tokens of that type (columns **B** and **A(i)** in Table 4) which produced a high correlation of $r = 0.86$, which was significant at $p < 0.01$ (df, 12) Therefore the answer to research question 2a, was clearly affirmative, since based on the r^2 of 0.745, almost three quarters of the variance in the distribution of the NCUs between the word types was related to the frequency of the use of those word types. This is not something which has been considered in studies in Thailand previously, nor does it seem to have been considered elsewhere. In fact such a high correlation would suggest that word frequency may be the main factor in the distribution of NCUs across word types. Therefore in considering whether there is evidence of an effect on NCU from the writers' Thai L1 it must be borne in mind that L1 effects cannot be the main factor in the way in which the

NCUs are distributed between the different word types since this was largely related to the frequency of word types in the manuscripts.

Research question 2b, asked:

Does the distribution of non-conventional usage suggest an effect from their Thai language backgrounds?

The main areas identified as giving rise to NCUs were: articles, verb tenses, noun pluralization and preposition use. All of these are areas which where English differs substantively from the Thai language, which, has no direct equivalent of the English article system, beyond the use of demonstrative adjectives crudely equivalent to the English *this*, *that* etc., nor does it indicate tense by inflecting verbs, favoring discrete time markers to indicate the time of an action where it is required, although these are

Table 5. Word class tokens after adjustment, and corresponding NCUs

Word class	(i) A	(ii) % of total words	B Structure NCUs	C % of total NCUs	D % of words in word class
<i>Prepositions</i>	14547	11.2%	1456	16.8%	10.0%
<i>Verbs</i>	16217	12.5%	1352	15.6%	8.3%
<i>Arts & dets/Possessives</i>	37876*	29.2%	3495	40.4%	9.2%
<i>Adverbs</i>	3301	2.5%	154	1.8%	4.7%
<i>Nouns and comp. n's</i>	37876	29.2%	1369	15.8%	3.6%
<i>Conjunctions</i>	6649	5.1%	316	3.7%	4.8%
<i>Adjectives and modifiers</i>	10460	8.1%	324	3.7%	3.1%
<i>Relative pronouns</i>	616	0.5%	100	1.2%	16.2%
<i>Pronouns</i>	1333	1.0%	54	0.6%	4.1%
<i>Misc. structure</i>	876	0.7%	30	0.3%	3.4%
Total	129751		8650		
Excluded from analysis	3705		281		
Overall Total	133456		8931		

Notes:

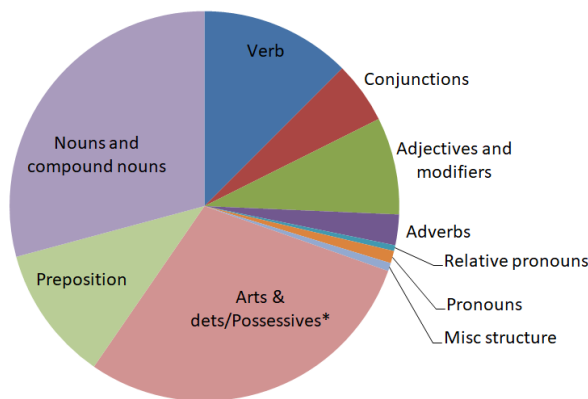
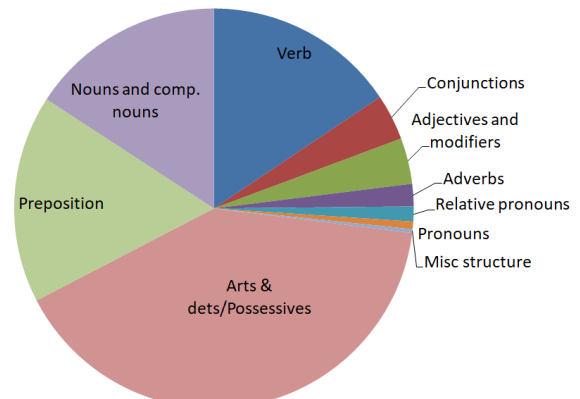
*Based on the number of nouns in the manuscripts (actual *Article and determiners* used in the manuscripts was 17243)

In column **B**, *Verbs* includes 200 tokens reclassified from *Word form* (99) and *Agreement* (101); *Articles & dets/Possessives* consists of 3453 tokens from *Articles and determiners* and 42 tokens from *Possessives*; *Nouns and comp nouns* includes 270 tokens reclassified from *Word form* (263) and *Agreement*(7); *Adverbs* includes 29 tokens reclassified from *Word form*; *Adjectives and modifiers* includes 206 tokens reclassified from *Word form* (174) and *Word order* (32) and excludes 83 tokens at clause or sentence level; *Pronouns* includes 20 tokens reclassified from *Agreement*; *Misc. structure* excludes 110 tokens at clause or sentence level.

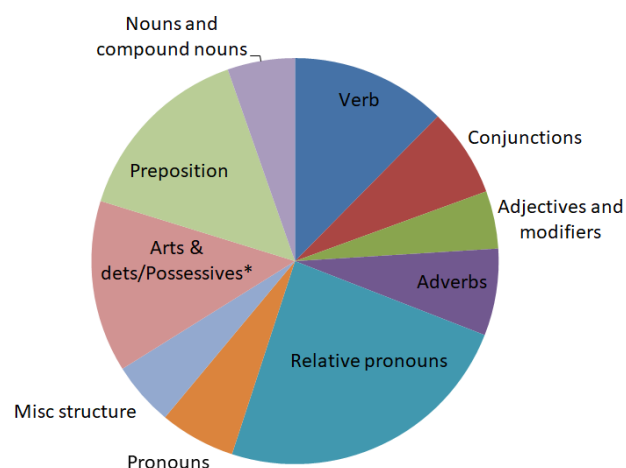
Figure 2. Adjusted distributions of:

a. Word types in texts per Wmatrix
(*articles & determiners/possessives based on number of nouns)

b. Structure NCUs (articles & determiners/possessives combined)

(column **A** in Table 5 above)(columns **B & C** in Table 5 above)

c. Number of NCU's as a percentage of tokens of word type in the manuscripts (column **D** in Table 5 above, adjusted to 100%)



often omitted where the time can be inferred from the context in which the verb occurs. Moreover, nouns are not marked for number which is added by way of a post-positioned classifier and although there are prepositions in Thai there is no one-to-one correspondence with English prepositions or the situations in which they are used, nor are they used consistently to the same semantic effect, and are often omitted. (Bootchuy, 2008).

Ellis (2006, p. 175) notes that theoretical approaches to L1 interference have tended to concentrate on the transfer of features from the learner's L1 to the L2, whereas perceptual blocking and overshadowing from areas of the L1 in respect of structures that are of low salience and high redundancy are a more potent source of mother tongue interference. The four areas giving rise to over 80% of the NCUs detected in the writers' manuscripts are all such structural features of English of low salience and high redundancy. On that basis it would be difficult to conclude otherwise than that cross-linguistic influences and perceptual blocking caused by differences between the L2 and L1 are a major causative factor of the NCUs recorded in those four areas, and that these effects resulted in the L1 shaping the writers' performance in the L2.

Discussion

The results presented above clearly show that the occurrence of NCUs in the writings analyzed was heavily weighted towards four areas, *articles and determiners*, *verbs*, *prepositions* and *nouns*, accounting together for over 80% of the overall total of 8931 *structure* NCUs, and for almost 89% of the word-level errors.

Further, within those four areas, the distribution was also concentrated among a small number of NCU types. For *articles and determiners*, the omission of the definite article, *the*, was overwhelmingly the largest issue and combined with the use of *the* in situations where no article was required accounted for more than 80% of the *articles and determiners* NCUs (2875 out of 3495), and overall for 32% of all the *structure* NCUs recorded. This agrees with the findings of Nopjirapong (2011), in which, respectively, 42% and 20% of the article errors recorded in her study of 2nd year English major students at Srinakarinwirot University were due to the omission or unnecessary use, respectively, of *the*. In the present study it was apparent that with no direct analog in their L1 these Thai writers clearly found great difficulty in correctly using articles or indeed, in the case of the definite article, in using it at all, and as Ellis (2006) notes, this feature of English is of both low salience and high complexity (p.167). Moreover, the results are in accord with those of Pongpairroj (2007), who found that Thai L1 learners of English made significantly more article errors in her study than did French L1 learners concluding that this was because French L1 learners "...have this functional category in their grammars..." (p. 116) whereas Thai L1 learners do not.

For the *verbs* sub-category, the largest area of NCU was in confusion between the past and present simple tenses which together accounted for 460 out of 1152 tokens of *verbs* NCU, or 34%. This finding is broadly in agreement with that of Suvarnamani (2017), who also found that transposing these two tenses was the major source of verb-tense error, in her study of 1st year undergraduates, accounting for over 73% such errors. For Thai learners of English, the lack of an equivalent auxiliary and verb-inflectional system in Thai and the fact that Thai speakers generally divine the time of an action from time markers or context, would render verb form of low salience in understanding the time of an action and as Ellis (2006) notes: "When two cues jointly predict an outcome, the more salient one may be learned and the less salient may not..." (p. 179). Similarly for *nouns*, the main source of errors was in respect of the misuse of singular or plural forms, accounting for over 90% of the 1099 tokens. Ellis (p. 167) highlights the plural *s* ending as being of low salience in view of the number of different uses to which the *s* ending is put in English, and a Thai speaker would be very likely to overlook the noun ending in favor of other more salient indicators of quantity such as numbers or quantifiers. Finally for preposition use, for which almost 90% of the 1456 tokens were due to incorrect choice, omission or unnecessary use, their low salience, the lack of form-meaning similarities between prepositions in Thai and English, and the fact that English prepositions often having multiple and not necessarily contiguous usage (see, for instance, Ellis, p.167, relating to the various uses of *in*) clearly created problems for these authors in their writing of English.

In comparing the findings of the study with those of the 33 EA studies traced in Thailand since 2000, although the participants in the present study are not directly comparable with those in the 33 studies listed in Table 1, it is notable that the three areas most often identified as producing errors in those studies are also the three areas in this study that produced the highest levels of NCUs (*articles and determiners*, *verbs* and

prepositions) with the other major sub-category in the present study, *nouns* and in particular noun pluralization also being identified frequently in those studies. In addition, most of the 33 studies cited mother tongue effects as one of the causes of the errors identified. The participants in those studies were in the main composed of undergraduate students with the next largest group being high school students so that the consistency between earlier results and those in the present study suggests that as Thai learners progress from the intermediate phases of learning to more advanced stages at which they have a real need to be able to actively and accurately use the language, the areas of NCU remain largely similar, suggesting an underlying and persistent influence from their shared Thai L1.

Therefore while the present study found that the distribution of NCUs was heavily influenced by the distribution of word types in the manuscripts, the major structural problems which these writers experience in using English appear to have their source in the blocking and overshadowing effect of their Thai L1. This study therefore offers compelling evidence of the likelihood that the areas identified as producing the largest numbers of NCUs in this study are those where learners will experience the greatest problems in the production of conventional English structure, and those areas therefore need to be targeted during all stages of their learning of English.

Conclusion: implications, future directions and limitations

The study reported investigated non-conventional English language structure in manuscripts written by Thai academics with the aim of establishing to what extent the distribution of NCUs was related to the frequency of occurrence of different word types in the manuscripts, and also whether there was evidence of an effect from the writers' Thai L1. The results clearly show that these two factors are heavily implicated in the pattern of NCU with word frequency accounting for approximately three quarters of the variance in the occurrence of NCUs and mother tongue effects being the most likely cause of NCUs in the four major areas in which the writers experienced difficulty in producing structurally correct English.

Pedagogical implications

The implication of these results is that those particular areas identified as giving rise to the greatest number of NCUs bear a disproportionate importance for Thai academics who aspire to publish their work in English, firstly because the word types identified as problematic are those which constitute the main types of words employed in writing academic articles and also because, based on the congruence between the findings of previous studies of Thai learners of English at earlier stages of development and the academics in the present study, those are the areas which give rise to the largest numbers of errors in written work by Thai users of English at all levels from high school upwards. Pedagogically, this means that a relatively small number of areas, particularly the use of the definite article *the*, the use of verb tenses and in particular the present and past simple tenses, the use of plural and singular nouns, and preposition use and collocations generally need to be targeted to prevent the possibility of errors in these areas becoming entrenched at later stages of language development.

Future directions

This paper presented only overall data from the sample, in line with how previous studies analyzing errors in Thai L1 learners of English have presented their findings. A future paper drawn from the findings of the broader study will consider inter-individual and intra-individual variation in the NCU data. In addition, a further

paper will attempt to show how the individual experiences of the participants in learning and using English influenced the level of NCU in their writing and speech as well as their meta-linguistic awareness of English, based on the data derived from interviewing the authors of the 26 papers analyzed.

Limitations and suggestions for future research

The main limitations of this study are the relatively small size of the sample and the difficulty of ensuring that this was representative of Thai academics who publish articles in English. Moreover, the restriction of the articles analyzed to those edited by only one native English speaking editor might introduce an element of personal language „prejudices“ into the outcome of the analysis. Future studies with English users at this level might usefully be based on work from more than one source university/region of Thailand and include edited work from more than one editor.

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