THE ASIAN ESP JOURNAL

The Asian ESP Journal

December 2017
Volume 13, Issue 2

Chief Editor - Roger Nunn

Associate Production Editor – David Young

Published by ELE Publishing
(Division of the TESOL Asia Group)

TESOL Asia Group is wholly owned by SITE SKILL TRAINING Pty Ltd (Australia)

Publisher: ELE Publishing

Managing Editor of ELE Publishing: Dr. John Adamson

Chief Editor of the Asian ESP Journal: Professor Roger Nunn

Associate Production Editor: David Young

Production Editors: Alliya Anderson; Ameera Shoukry; Enaam Hunaini; Joud Jabri Pickett; Ronald Jones; Sarah Tatz; Tiffany Cammidge

ISSN. 2206-0979

Table of Contents

THE ASIAN ESP JOURNAL

Foreword

Facilitating the transition between languages

Roger Nunn

The Petroleum Institute, Abu Dhabi

David Young

The Petroleum Institute, Abu Dhabi

Welcome to the December, 2017 Issue of Asian ESP (Volume 13, issue 2). We are happy to be able to bring you a diverse set of ESP papers. This diversity is reflected in two papers by authors working in institutions that address the needs of students in a business education environment. David Shea in *Shifting Positions: The Development of Textual Features and Academic Voice in a University Writing Seminar* underlines the importance of helping students develop their 'voice' as authors. In an era where everything can be found, cut and pasted, this topic takes on new importance. How do we train students to using the knowledge they find in support of rather than instead of developing our own arguments? In this one student case study, Shea underlines the importance of helping freshman students learn to position themselves socially. As a result of his study, Shea decides to radically redesign his own curriculum to make 'two-way acculturation' possible. The student learns the skills of academic discourse but also learns to develop a voice that appropriates knowledge without being subjugated by it. In contrast, Monica Broido and Daniel Portman in *Building Bridges, Creating Competencies: ESP capacity building for the Israeli information technology industry* considers the needs of advanced post-graduate students. In a broad study of needs in their context, they identify the need for more emphasis on productive skills as well as developing greater intercultural awareness. Their broad study involves collecting large amounts of interview and survey data from five companies. A very different approach to Shea's

therefore. However, we can still detect some affinities in the outcomes. Training students to be productive needs to start at an early stage of higher education.

In *Understanding ENGAGEMENT resources in constructing voice in research articles in the fields of computer networks and communications and second language writing*, Weiya Zhang and Yin Ling Cheung explore the significance of voice from a different perspective. Using a corpus approach, they identify the resources computer networks and communications (CNC) and second language writing (SLW) research writers employ in order to position themselves when pitching their work for publication in reputable academic journals. The study is especially pertinent as it is predicated on the writers' quest for legitimacy and status in their respective hard and soft science disciplines. In this regard, the study echoes the importance of authorial voice but not quite in the same vein as the one heralded by Shea. Instead, it identifies a key criterion for publication to be the necessity for novice and established writers alike to conform to disciplinary conventions of writing practices.

Hernandez, Amarles, and Raymundo, in *Blog-assisted feedback: Its affordances in improving College ESL students' Academic writing skills*, consider the development of confidence and written discourse skills in a study of ESL students at tertiary level in the Philippines. Hernandez et al. argue that feedback is a key element in facilitating the writing process and demonstrates the merits of using blog-assisted feedback when revising, editing, and augmenting students' output. Mining the students' blog-based messages and reflections, they identify the significance of attitudinal variables in the mix, which echoes Broido and Portman's research into the apprehension experienced by non-native English speakers working in the Israeli information technology industry. In Hernandez's findings, not only did the students' writing skills improve, so too did their attitudes to learning.

In a study of 113 freshman students, I-Chia Chou's paper, *The effects of explicit academic vocabulary instruction in an English-mediated Educational Psychology on EFL learners' content knowledge*, underscores the fundamental importance of the acquisition of academic vocabulary for academic success. Her study focuses on the learning outcomes of explicit vocabulary instruction and the effectiveness of building lexical resources in increasing language learners' academic

achievement, and thus links naturally to Weiya Zhang and Yin Ling Cheung's study of hard and soft science writers' use of resources to position and present their academic papers .

In our final piece, Biook Behnam and Amir Nikoukhesal champion the growing importance of genre analysis in an ESP context in *A Contrastive Study of Move Structure in the Introduction Section of Physical versus Social Sciences Research Articles in English*. Just as Weiya Zhang and Yin Ling Cheung examined the resources utilized by hard and soft science writers, they too focus on where writers of physical and social sciences correspond and diverge in crafting their respective compositions. In Behnam and Nikoukhesal's work, the focus is firmly on the introduction sections of research articles due to the lack of research in the area. Using Swales' Create-A-Research-Space (CARS) model, the authors examined the move structure of 40 research article introductions across disciplines. This study, following Swales' (1990) widely accepted Create-A Research- Space (CARS) model, examined the move structure of 40 research articles. They argue that there are implications for EAP writing pedagogy in non-native researchers being made aware of the generic structure of the research article introduction and its conventions. For a student to gain mastery of the genre, awareness and orientation to these conventions is required. The need to know how to write research articles remains for novice and non-native English writers, and Behnam and Nikoukhesal assert that the results from their study can inform writing instructors as they assist students in determining the specifics of their own discipline's generic structures.

The reader will note in this issue the prevailing themes of voice and agency: as cautioned by Shea, convention may well guide but it can also smother a writer's efforts to formulate and articulate an original argument. In order to foster authorial voice and confidence in both spoken and written discourse, it is incumbent on educators and stakeholders in professional practice to provide environments that attend to the attitudinal, intercultural, and intellectual needs of language learners. Arguably, moving between languages should encourage creative expression rather than stymie it, thereby allowing for both learners and teachers to grow.

THE ASIAN ESP JOURNAL

Shifting Positions: The Development of Textual Features and Academic Voice in a University Writing Seminar

David P. Shea

Keio University, Faculty of Business & Commerce,

Yokohama, JAPAN

Bio data

David P. Shea teaches content-based academic English at Keio University in Tokyo. He is currently associate professor in the Faculty of Business & Commerce, and his main area of research involves the intersection of language education and intercultural pragmatics. He is particularly interested in classroom pedagogy and dialogic teaching.

Email: shea@fbc.keio.ac.jp

Abstract

In this paper, I present a qualitative case study analysis of one student's development of surface-level textual features and academic voice in an advanced, first-year university writing seminar. Looking at both textual and social engagements evident in the student's writing, I trace three categories of improvement: (1) lexis and syntax, (2) implicit framing, and (3) personal opinion. In spite of clear strengthening in rhetorical style and successful framing of the argument, the student's own ideas were lost in the composition process, as she followed source readings, voicing ideas she did not agree with. I argue that the student appropriated textual features of academic discourse, but she was not positioned socially in a way that would allow her to build basic language skills to explain ideas persuasively, with evidence and

justification. The challenge for the writing seminar, I conclude, is to shift its own position, away from writing as appropriation of a particular set of skills or rhetorical structure, and toward two-way enculturation that does not lose track of creative expression but tries to strengthen learner voice and agency.

Keywords: academic writing, textual features, academic voice, sociocultural positioning, sustained thinking, two-way enculturation

Acknowledgements

I am deeply grateful to Chris Casanave for critical comments and feedback on earlier drafts of this paper. I owe a special note of thanks to Shizuko for originally agreeing to participate in the project.

Introduction

Academic writing pedagogy in EFL contexts is often framed in terms of acquiring the textual conventions of a particular discourse community that are necessary if students are to write successfully, but there are two problems with this formulation. First, community is phrased in terms of rhetorical structures, which works to reduce the complexity of writing practice. According to a sociocultural view of literacy (Hardman, 2008; Mercer & Howe, 2012), development is social in origin and arises within mediated interaction (Daniels, 2016; Mercer, 2000, 2016). While it is true that L2 student writers are evaluated by the textual features of discourse (Ferris & Hedgecock, 2013), effective writing pedagogy is also located within the socially situated generation of ideas , and the ways that teachers engage and extend student voice and agency (Sivasubramaniam, 2009a).

Second, the centralizing "centripetal" forces of imitating writing conventions are always mediated by the dynamic and contextually negotiated "centrifugal" forces of creativity and multivocality (Prior, 1995). Consequently, development of proficiency within disciplinary communities is not a process of "one-way enculturation" (Casanave, 1995, p. 86), but rather a dynamic endeavor negotiated locally, that allows personal expression and fosters the reconstruction of learner "selves and the world" (Sivasubramaniam, 2015, p. 74). Discourse communities inevitably include a heteroglossic diversity of styles and perspectives which make textual conventions, however important, inadequate to capture the negotiation of meaning at the heart of learning. Ultimately,

discourse conventions are socially situated, productively enacted, and interactively recreated in practice, and this element of creative appropriation serves to shift the focus of second language writing pedagogy toward what Nunn (2014) calls a "constructivist approach," relating linguistic analysis to holistic learning (p. 19-20).

A sociocultural perspective frames learning as participation rather than cognitive acquisition (Lave & Wenger, 1991; Pavlenko & Lantolf, 2000; Sfard, 1998). In this respect, development can be measured in terms of shifting positions and increasingly proficient engagement as the learner moves from initial peripherality toward the legitimate centrality of expert. Moreover, learning is a function of not only doing, but also "ways of being a person" within the context of activity (Wenger, 1998, p. 149). The development of writing, then, involves shifting textual identities that students negotiate discursively (Ivanic, 1998). It is not always clear, however, what this theoretical view of learning as situated practice entails in the context of the classroom. Freedman and Adam (1996) gave an example of "assisted performance" and how one "attuned" professor in a business class structured the curriculum to gradually "orchestrate" a rhetorical context that, they suggest, enabled students to produce successful reports:

> the instructor assigned cases to be written up at home, and then in class he modeled appropriate approaches to the data, identifying key issues and specifying possible recommendations for action... After the instructor modeled appropriate approaches in class – *especially in the context of the students' struggles to find meaning in the data themselves* – the students were gradually able to make such intellectual moves themselves. (p. 404, italics in original)

It is clear that this conception of assisted performance encompasses what is, essentially, a lecture-based format, where students make the necessary “intellectual moves” to produce successful reports on their own. In other contexts, teachers present explicit models that students learn "by observing" and creating something new (Wette, 2014).

It is clear, however, L2 student writers often need more hands-on guidance to develop sustained, productive discourse (Thompson, 2008), even though, in some contexts, scaffolded assistance does not always facilitate increasingly proficient performance (Belcher, 1994; Blakeslee, 1997; Leki, Cumming, & Silva, 2008). Complex sociocultural dynamics within classroom communities can

restrict student access to participation, circumscribing opportunities for second language use and thus development (Kanno, 1999; Leki, 2001). Participation may be legitimate, as it remains unfairly peripheral.

What studies critical of situated learning point out is that the notion of emergent practice is not simply a matter of whether learning is situated or not. Indeed, as Lave (1996, p. 155) contends, even decontextualized learning is a kind of situated practice. What is significant is the quality and direction of participation. Are students engaged in ways that both strengthen textual features of writing oriented to disciplinary audiences and, at the same time, affirm their own voices and ability to use the L2 productively and creatively? Looking at both the social and textual positions that student writers instantiate allows us to trace the development of academic literacy in terms of the various textual features that students use to "position" themselves discursively as writers. In this paper, I draw on Ivanic's (1998) discussion of textual features to look at one student's writing in an undergraduate academic writing seminar at a Japanese university. I also look at local engagements within the class that worked to scaffold the student writer and mediate (facilitate as well as constrain) the production of academic discourse.

Characteristics of the Writing Seminar

Data for this study are drawn from an academic English writing seminar that I taught as a part-time instructor at a large university in metropolitan Tokyo, Japan. Ten students were enrolled in the class and all but one were in their first or second-year of study. Most were "returnees" (Kanno, 2003) who were advanced speakers of English; some, including Shizuko, whose writing I analyze in this paper, had near-native conversational fluency.

The seminar carried elective credit and met weekly. The pedagogic aim was to offer extensive practice in reading and writing academic English. Each student was assigned to carry out a semester-long project in which they selected, read, and responded to a body of literature (effectively 6-8 academic journal articles) on a topic of chosen interest, leading to a final paper based on the readings, carried out with instructor guidance and feedback. Students also made a number of in-class presentations and engaged in small-group discussions. The objective of the seminar was to develop not only writing proficiency, but also reading fluency, confidence, and critical thinking skills. The first week's assignment was to read and respond to Spack's (1997)

longitudinal study of Yuko and the acquisition of academic literacy at a U.S. university. During the second and third weeks, students searched the library and online databases for articles on individual research topics. With instruction and guidance over the following six weeks, students read 5-6 academic journal articles and wrote short 1-2 page summary-response essays. During the last third of the semester, students worked to integrate the reading and writing activities and each drafted an 8-10 page final paper, which they revised and submitted at the end of the term. In addition to informal reports and discussion, class activities included short lecture presentations and workshops in which I talked about such topics as style guidelines, citation and reference conventions, database search procedures, and revision strategies. As instructor, I read and responded to all student writing, making editorial suggestions, asking clarification questions, and commenting on the ideas students presented in their writing.

Shizuko

In this paper, I present a case study of one student, Shizuko (a pseudonym), whose writing over the course of the semester illustrates important features in the development of academic literacy. Like Yuko in Spack's study, Shizuko had a very high TOEFL score of 660 (+110), but little experience writing academic essays in high school. Unlike Yuko, Shizuko lived in the US from childhood, attending elementary and junior high, before entering a residential Japanese high school in the US, with a primarily Japanese curriculum geared toward university admission in Japan. She reported that her English class focused on reading interpretive essays and literature (creative stories/poetry).

Research Goals and Methods

The purpose of the research project was to better understand how students develop academic literacy. In data collection, I was guided by principles of action research and reflective practice, where inquiry is a local, exploratory means to reflect upon and improve teaching practice (Burns, 2010; Crookes, 1993; Hubbard & Power, 1993, Walsh, 2011). As instructor, I wanted to delineate negotiated practices of engagement enacted in the classroom and reflect theoretically on what Johnson (2006) calls the "experiential knowledge" of the practitioner. Clarke (1994) has criticized the distinction between research theory and teaching as a "dysfunctional" separation that reinforces a top-down imposition of research onto classroom practice, without regard for the complex

contingencies of pedagogy. To that end, I carried out the research to look at student writing, not from the standpoint of composition theory, but from the pragmatic perspective of a classroom teacher.

Shizuko agreed to participate in the study and she gave permission to use her essays for purposes of analysis. Other members of the class approved voice recording of group discussion on condition of anonymity.

For the analysis, I followed procedures of qualitative inquiry (Patton, 2015; Thomas, 2006), generating grounded categories through recursive analysis of a triangulated data sample that included student writing, interviews/surveys, transcripts of recorded classroom discussion, and participant observation notes. I compared open categories identified from analysis of one data set with categories identified in other sets, to produce axial categories that I then used to look at other data. In earlier stages of the research, I was particularly interested to see how students perceived cultural differences while writing in a Japanese setting. As the analysis progressed, however, I began to focus on textual changes in Shizuko's essays, and the ways in which the class worked to structure and shape her writing. In particular, I looked at three categories of change, features related to (1) lexis and syntax, (2) rhetorical structure and implied addressivity, and (3) articulation of personal ideas and opinion.

Features of Academic Style

Over the weekly essays leading up to (and synthesized in) the term-final paper, it is possible to trace the development of an increasingly sophisticated style in Shizuko's writing that reflects the acquisition of textual features of academic discourse, particularly lexis and syntax. In this section, I look at data excerpts taken from the corresponding "response" paragraphs of the first, second, and sixth week's summary-response essays. Over the course of the semester, Shizuko shifted the tone of her writing, appropriating a more confident, authoritative textual voice. The conversational and personal tone of the first essay gave way to a more formal and academic style in the sixth.

In her first essay, Shizuko responded to the Yuko study and Spack's discussion of academic literacy. It is important to note that Shizuko's essay was not written with a public audience in mind and cannot be judged as a polished piece of writing. The purpose of the assignment was in part

heuristic, to elicit a personal response to another Japanese student's struggle to develop academic English. At the same time, the textual features of Shizuko's essay illustrate how she articulated and positioned herself textually at the beginning of the semester:

> I believe this long term study done on Yuko reveals not only how the ESL program should improve their curriculum, but how the Japanese education system should change theirs as well. I too have struggled through endless boring teachers who required no thinking skills. It did not matter if you were listening since nothing said in class varied from the textbook. As Yuko pointed out, teachers should help students "construct knowledge" and not be mere "providers of information". Otherwise, students will lose the valuable ability to think on their own and possess their own opinion. This is where Yuko felt the "big cultural difference". She felt she was not understood because she "didn't speak up". Although in the end, Yuko continued to prefer the subtle Japanese way, it was important for her to be acquainted with the ability to express herself, especially since she is to continue in the field of international relations.

In this response, Shizuko declared her empathy with Yuko's critique of one-way pedagogy prevalent in Japanese education, noting her dissatisfaction with dry textbook-based lectures. Shizuko concluded by referring to cultural differences and the need to express one's ideas academically.

Although the writing was thoughtful and sincere, the tone was personal and reflected inexperience with academic discourse. Shizuko employed a number of colloquial terms ("I believe" and "in the end") and the conversational you ("if you were listening"), coupled with slightly exaggerated overstatement ("endless boring" and "no thinking skills"). Taken together, these features indexed everyday conversation with friends and marked the writing as informal. Shizuko also adopted a prescriptive, rather than descriptive, tone ("I believe ... the Japanese education system should change") to couch her opinion, which further accentuated the conversational style.

Colloquial Expressions	**Exaggerated Overstatement**
I believe in the end if you were listening	endless boring no thinking skills lose the ability to think on their own
Prescriptive Tone	
system should change... teachers should help...	

In addition, the thesis of the paragraph was diffuse and the main point did not come across well. While Shizuko did weave descriptions of Yuko's feelings as well as terminology from Spack's analysis ("construct knowledge") into statements made from her own perspective, the topic focus shifted between her own ideas/experiences and Yuko's, concluding with a description of Yuko's career path. At the same time, the general tenor of Shizuko's opinion was evident when she mentioned thinking skills and implied an endorsement of creativity. The idea, however, remained implicit and unarticulated.

In the second essay, responding to Thorsten's (1996) article on pressures in Japanese education, written three weeks after the first essay, Shizuko demonstrated a clear shift in tone, reflecting a more sophisticated textual positioning. She wrote:

> However, these education mothers are themselves a victim of a society where second chances do not exist. Once left out of the "escalator" that leads to economic success, there is no way to return (Thorsten, 1996). When such a thing happens, all blame falls on the parents. Therefore, as much as education mothers are criticized, they are quite necessary in Japan's society. All blame falls on the fact that educational credentials and social status are favored over creativity and uniqueness. The Japanese education system must start from the beginning in order to spread the idea that individualism is what is most important.

Shizuko was responding to an analysis of the role mothers are pressed to play in the pressurized Japanese education system to support their children. She cited Thorsten's concept of the escalator track and asserted that, while "education mothers" may be criticized (a point Thorsten makes), they play a needed role in society. Shizuko concluded by briefly stating her concern with individuality and creativity in Japanese education.

While some awkward phrasing ("blame falls on the fact") and colloquial expressions ("all blame") remained, the writing displayed a more academic tone than the first essay. In particular, Shizuko showed more "responsibility" to the source text (Leki & Carson, 1997), using APA style (introduced and modeled in class discussions) to quote the term escalator and attribute information to the article. Shizuko also incorporated key ideas and constructs from the reading (e.g., education mothers as victims), which suggests that, in the engagement with the article, Shizuko was appropriating elements of the text into her own writing, not only lexico-syntactic features, but also concepts and viewpoints.

The sixth (and final) summary-response essay, written at the midpoint of the semester after reading Crystal's (1994) analysis of child deviance in Japan, revealed an even more pronounced shift to an academic style:

> It is when the child realizes it impossible to meet expectations that the transformation of the "good child" into the "bad child" occurs. The child's low tolerance for frustration and the tendency to panic in situations of stress make up the perfect formula for the creation of a deviant child. In Japan, the "good child" is perceived to be one that is cooperative, accepting, passive, and agreeable (Crystal, 1994). However, these personality traits that enabled people to live in group harmony, are no longer competent in a society where competition and educational attainment are fierce. It is necessary for the Japanese society as a whole to rethink the concept of the "good child" as one where self-attainment and individuality come first.

Shizuko was responding to an interpretive analysis of adolescent behavior in Japan that located deviance in cultural attitudes and attributes. She cited Crystal's interpretation of the good child who is *sunao* (cooperative) and agreeable, and she noted that, given the prevailing environment of

stress and competition, frustration often leads to deviance. She concluded that individuality should be given a higher priority in Japanese society.

Textual Features

To trace the shift in Shizuko's writing style, I analyzed textual features of the three essay selections according to categories employed by Ivanic (1998, p. 259-274): lexical density of clause structure; nominalization and nominal groups; and verb type. According to Ivanic, a significant characteristic of academic prose is the tendency to phrase ideas in terms of ideational meanings and abstract relationships, rather than specific human action and personal experience. This is manifest in written structure with information typically (though not invariably) phrased in lexically "dense" prose that utilizes generalizations and categorical constructions.

The lexical density of clause structure, measured by dividing the number of "meaning-carrying" content words by the number of coordinate and subordinate (but not embedded) clauses in a selection (Ivanic, 1998, p. 261), produces a figure that indicates the general lexical density of Shizuko's writing. While the numbers do not allow valid comparison with writing from other contexts, they do suggest the change in Shizuko's discourse style, since the excerpts, taken from the corresponding "response" paragraphs of the summary-response essays, were written with the same purpose and based on similar source articles.

First Essay	**Second Essay**	**Sixth Essay**
6.3	7.2	12

In the first essay selection, there were 13 clauses and 82 lexical words, which produced a ratio of 6.3 words per clause. The second essay, with 7 clauses and 51 content words, registered a lexical density of 7.2, slightly higher than the first essay. But lexical density in the sixth essay increased dramatically, reflecting a more complex and integrated discourse texture.

Nominalizations, as the objectification of action or attributes into nominals, are illuminating, arguably, because they suggest a degree of abstraction and conceptualization (Ivanic, 1998, p. 267). Shizuko used six nominalized terms in the first essay (education, teachers, providers, ability,

difference, and relations). In the sixth essay, the increased use of nominalization (expectations, transformation, tolerance, tendency, situations, creation, harmony, competition, attainment, individuality) reflected the way Shizuko incorporated more abstraction into her writing style, appropriating conventions of more formal academic discourse.

First Essay	**Second Essay**	**Sixth Essay**
education	education	expectations
teachers	escalator	transformation
providers	credentials	tolerance
ability	creativity	tendency
difference	uniqueness	situations
relations	beginning	creation
	individualism	harmony
		competition
		attainment
		individuality

The use of nominal groups, head nouns with associated modifiers, is another indicator of the growing complexity of Shizuko's discursive style. In the first essay, there were four extended nominal groups, with an average length of 4.25 lexical words, while in the sixth essay, there were five nominal groups, averaging 5.5 lexical words in length.

First Essay	Second Essay	Sixth Essay
• this long term study done on Yuko • endless boring teachers who required no thinking skills • nothing said in class • the ability to the express herself	• a victim of a society where second chances do not exist • the "escalator" that leads to economic success • the fact that educational credentials and social status are favored over creativity and uniqueness • the idea that individualism is what is most important	• the perfect formula for the creation of the deviant child • one that is cooperative, accepting, passive, and agreeable • these personality traits that enabled people to live in group harmony • a society where competition and educational attainment are fierce • one where self-attainment and individuality come first

Distinguishing between relational and material processes, Ivanic (1998, p. 264) notes that the use of categorical and "relational process" verbs position writers as "interested in general truths, states of affairs and relationships among entities." Shizuko's three essays exhibited a shift in verb use according to type, tense, and modality that reflect more consideration for categorical processes.

First Essay	Second Essay	Sixth Essay
believe	are	is
reveals	do not exist	realizes
should improve	happens	occurs
have struggled	are criticized	make up
did not matter	are	is perceived
were listening	falls	enabled
varied	are favored	are
pointed out	must start	is
should help	is	come
will lose		
is		
felt		
speak up		
continued		

In the first essay, Shizuko used verbs that express primarily material processes, related to physical action and actual deeds or emotions (e.g. *have struggled, were listening, will lose, speak up*). While

verbs in the second essay were concerned with action (e.g. *must start*), they also reflected general relationships between categories and abstract states of affairs (e.g. *chances exist, blame falls, credentials and status favored*). In the sixth essay, however, the verbs expressed relational processes (e.g. *child realizes, transformation occurs, frustration and tendency make up*) that are generalized analytically. Even more pronounced was the shift in tense and modality. By the sixth essay, the variety of verbal forms, evident in the first selection, and the auxiliaries evident in the second (including the imperative *must start*) were gone, and verbs were phrased in the categorical present, without auxiliaries (except for the passive *is perceived*).

Taken as a general indication of writing style, the textual features suggest that, as the semester progressed, Shizuko successfully appropriated academic discourse, as she wrote with greater density, formality, and abstraction. These features positioned Shizuko as an academic writer, and reflected her growing accommodation to the disciplinary conventions of standard academic discourse. They also indicated the development of a textual voice distinct from the casual register used in informal conversation with friends. This shift was located in the scaffolded engagement with source texts, as Shizuko incorporated vocabulary, ideas, and even grammatical structure into summary-response essays, oral presentations, and small-group discussion sessions.

In the final paper, however, Shizuko had to make another shift in textual orientation, related to constructing an original argument. The summary-response essays were assigned primarily as a means to understand and engage with source readings, but the final paper required a more extended, persuasive analysis that integrated source articles with original thesis. In other words, Shizuko had to write to an audience and deal with attendant issues of addressivity.

Framing the Argument

Shizuko's final paper was a nine-page analysis of adolescent deviance in which she contended, basically, that the conflicting pressure on Japanese young people to both conform and succeed generated adolescent deviance. The paper was, on the whole, well-written and convincing, echoing themes and arguments drawn from source readings, first made in the weekly essays. Shizuko described three factors that promoted deviance: a shift toward the nuclear family, low tolerance of frustration among children, and stress produced by competition in the exam-oriented education system. The draft displayed a writing style that was, on the whole, similar to the sixth essay in

terms of textual features of clause structure, nominalization, and verb type. The draft suffered from two problems, however, both of which were related to rhetorical style. The revisions that Shizuko made are instructive because they reflect the development of another aspect of academic discourse.

The first change involved the way the argument was framed in the first paragraph. The draft began abruptly, without a preview of the discussion to follow. Shizuko wrote:

> Recently, adolescent deviance in Japan has become a major social issue (Lock, 1991). Lock further states that among the variety of behavioral problems, bullying, school, refusal, and domestic violence are the most widely discussed and thoroughly researched forms of deviance. However, when looking at the actual statistics, Japan ranks lowest in all 3 issues.

The first sentence was a simple statement about the topic, echoing the style of the summary-response essays written earlier in the semester. Shizuko defined deviance as a social issue and attributed the information to the source article (Lock, 1991) and then elaborated the definition, indexing the argument as Lock's, not her own. There was no overarching introduction of the argument to follow, and the "actual statistics" appeared to be abbreviated and possibly unrelated.

In the revision, Shizuko expanded the paragraph, defining the thesis more clearly and adding information to situate the argument. The first paragraph read:

> In Japan, adolescent deviance has been debated over the last 5 years with increased intensity. School refusal, domestic violence, and bullying are the particular forms of deviance most widely discussed among parents, educators, and psychologists. However, when looking at official statistics taken by Somucho Seishonen Taisaku Honbu comparing Japan with Germany, Norway, Scotland, England, and the United States, Japan ranks lowest in all three categories. The figures would barely cause any concern in any other country, yet adolescent deviance has indeed become a major social issue. By looking at the issue of deviance and why it has attracted so much attention despite its relatively low frequency, we may begin to see what factors of the education system are leading to the onset of deviance.

Shizuko moved the draft reference to Lock to the body of the paper and reframed the issue in her own words, indexing the topic as part of a broader debate. The draft reference to statistics was specified as an aspect of that debate, with the source cited. Although conversational features remained (e.g., "barely cause any concern in any other country"), the thesis came across with greater clarity and specificity, giving the revised version a coherence and persuasiveness that the draft lacked. In the paragraph's last sentence, Shizuko framed the argument she would develop in the paper, previewing the association between deviance and the education system.

The revision in rhetorical structure indicated Shizuko's changing orientation toward an implied audience. This shift in addressivity can be traced to interaction in the classroom and the local audience of classmates she addressed in person during group discussion. In the third week of the semester, when making a presentation about her reading of Thorsten (1996), for example, Shizuko began her summary to the group in abrupt fashion, simply announcing the topic. She said:

> S okay I did my research on um, kyoiku, mama/, and um, , what, they are/ I think hhh everybody knows what they are hhh but, um, , , the article discusses how um, , that even the society, like media/ criticizes them/ ...

Shizuko framed the in-class oral presentation of her final paper draft, given near the end of the semester prior to the revision, in a similar way:

> S okay/ I started out the paper by saying that, although the statistics show that um, that Japan, ranks lowest in, all three, issues/ um, Japanese are the most concerned about, the issue and, I want, to describe why, it's causing so much concern

Shizuko talked this way to her peers, in part, because they shared, as her comment to the group indicates, a great deal of background knowledge and cultural assumptions ("I think everybody knows what they are"). Her classmates also shared a similar speaking orientation to the activity, students doing an assignment (i.e. to talk about what they read and wrote about), which lent coherence to the talk and framed the discourse.

In suggesting the notion of addressivity, Bakhtin (1994, p. 87) maintains that all utterances are constructed "in anticipation" of a response from other members of the speech community. Thus,

the locus of the rhetorical structure in Shizuko's writing and the genesis of its development lies in the discursive position she adopted in anticipation of the audience. In the final paper draft, Shizuko was echoing her presentations to the small group, and the implicit assumptions about what the audience knew and expected to hear, worked to infuse the discourse. But to appropriately frame the final paper as academic argument, Shizuko was required to reconceptualize her audience, not as familiar classmates, but as an imagined and distant forum which required a different speaking position and more explicit rhetorical structure. In the final paper revision, Shizuko made the shift successfully, for the most part, supported by guidance provided in both written feedback given to her draft and in-class discussion, when I talked about the need to frame an argument with an introduction and preview of the thesis. With this scaffolded assistance, Shizuko was able to negotiate the shift in textual orientation and frame her argument more appropriately.

Incorporating Qualification

Shizuko's recognition of a broader academic audience can be seen in another category of revisions related to rhetorical qualification. In the draft, Shizuko made a number of blanket claims about cultural attributes related to Japan, but these generalizations were qualified in the revision. The changes were also rooted in anticipation of feedback from a different audience. In this case, the final paper revision shows how scaffolded assistance helped Shizuko not only incorporate a broader perspective, but also generate a more nuanced argument.

For example, when Shizuko suggested that Japanese children are long-suffering while Americans are independent, repeating contrastive assumptions about Japanese society that are widely held in Japan, I took issue with the characterization in written comments (denoted by D) made to the draft. In response to the feedback, Shizuko qualified the argument in the final version:

> draft One of the Japanese characteristics of the good child is the will to *gambaru,* or persevere (Crystal, 1994). While Americans recognize the different levels of ability in an individual, Japanese believe in success as resulting solely from effort. (D, 2)
>
> *D* *It's simplistic to argue that all Americans are individuals, and all Japanese "make effort."*

final One of the factors that determines a good child is the will to *gambaru*, or tolerate and persevere (Crystal, 1994). Americans tend to recognize the different levels of ability in an individual. On the other hand, Japanese often believe that success, to a great extent, results from effort.

In the revision, Shizuko added nuance to her claims, changing the unilateral "one of the characteristics" to the more discerning "one of the factors that determine". In addition, she modified the unqualified contrastive assertion about American and Japanese beliefs to the more circumscribed "Americans tend" and "Japanese often believe" while qualifying even this claim with the hedge, "to a great extent".

In group discussion, Shizuko's unqualified assertions about cultural attributes were not challenged by her classmates, possibly because ideological assumptions about the unity and uniqueness of Japanese culture are so widespread (Kubota, 1997). One of Shizuko's classmates, for example, asked, in response to Shizuko's presentation about education mothers, not whether expansive characterizations of mothers as concerned about the child's education were in fact true, but rather, if the author was Japanese:

E who wrote the article, is it a Japanese or-
S no, it's um Marie uh, Thorsten/ yeah
E American/
S I think so, I think she's American yeah, ,
E so it's from a, a foreigner's view'
S uh she's like been to Japan a lot, like she's seen a lot of, um, Japanese TV

Another example of revision that Shizuko made to incorporate rhetorical nuance and qualification, concerned her overgeneralization of absent fathers:

draft Still, the absent father of many nuclear families contributes to the process of adolescent deviance. (D, 4)

D *An absent father is not associated with the nuclear family. It sounds as if you're saying that just because there's been a rise in the nuclear family, absent fathers have increased, too. That's not true at all. Fathers are absent*

because of labor practices and social expectations.

final If however, the father of the family is absent due to labor practices, it may contribute to the process of adolescent deviance. Unlike in an extended family, there are no other male figures that can take the place of the lacking father.

Shizuko rephrased her claim hypothetically and then appropriated the phrase I used, "because of labor practices" into her own text, to justify the hypothetical premise. In addition to adding the hedge "may contribute," she offered evidence to support the basic assertion that there are no other male figures to replace an absent father. The result was an argument that had more subtlety and textual elaboration.

In sum, the changes that Shizuko made in response to comments on her final paper draft reflected the appropriation of not only vocabulary and phrasing, but also the addressive orientation to an implied audience. Shizuko's experience suggests that the surface features of academic style appropriated in the engagement with texts, were not sufficient to construct a successful paper. Other aspects, including features of addressivity and textual orientation to a distant audience, were also at play, all socially mediated by scaffolded assistance from the teacher. On her own, Shizuko found it difficult to appropriate these aspects of rhetorical orientation, in part because she was echoing the familiar register of conversation with friends and classmates, equally unfamiliar with academic discourse. However, when she received contingent feedback and guidance about revision, Shizuko was able to successfully incorporate unfamiliar rhetorical features and better frame her argument. And yet, while elements of social engagement worked to mediate Shizuko's writing, there was another issue involving voice and agency that I did not notice until later, but which shaped her orientation to academic discourse.

Extending Ideas

While on the surface, it appears that Shizuko constructed a successful argument in the final paper, her own ideas actually remain largely implied and undeveloped. Clearly she developed greater textual complexity and rhetorical sophistication over the semester, but she was not able to incorporate her own thoughts into her essay. As her writing developed increased sophistication, her own opinions became more implicit and attenuated. Looking once again at the summary-

response essays, it is possible to see how Shizuko did, in fact, state personal opinions, although they were phrased in an abbreviated and colloquial manner. By the time she had revised the final paper, her opinions were no longer apparent because she had abandoned the personal perspective.

For example, in the second summary-response essay, after describing the analysis of educational credentials in Thorsten's source article, Shizuko expressed a personal opinion about the importance of creativity and uniqueness. She stated her conviction directly, in prescriptive terms regarding what must be done:

> The Japanese education system must start from the beginning in order to spread the idea that individualism is what is most important.

Shizuko did not explain the opinion, and she gave no supporting detail or extending argument to substantiate the comment or explain the point. Shizuko neither defined the term individualism nor explained what it might imply, practically or theoretically. The point was simply stated as opinion, much as she might do in conversation with a group of friends who would understand without expanded argumentation.

In the sixth essay responding to Crystal (1994), Shizuko expressed her opinion about the issue in much the same manner as she did in the second essay. The source article described the cultural expectation that children learn to persevere and conform in school, but Shizuko wanted to endorse a more progressive view that affirmed individuality and uniqueness. She wrote:

> It is necessary for the Japanese society as a whole to rethink the concept of the "good child" as one where self-attainment and individuality come first.

Again, the opinion was phrased prescriptively, as necessity, but the point was left unexplained and Shizuko did not take up how the recognition of creativity in education might relate to the source article's focus on cultural attributes.

In the final paper, the tension between personal opinion and academic argument was resolved as Shizuko eliminated not only the prescriptive phrasing but also her own opinions from the argument. Although Shizuko did raise the issue of individuality when she described, for example, the emphasis on conformity expected in Japanese education, the point was attributed to the source

citation; it was not phrased in her own voice, as her own opinion. Shizuko also referred to the nationalist tone that infused the debate about Japanese school reform, but this idea, too, was explicitly cited as information drawn from the source, using the attribution, "according to Crystal" (p. 7).

In the conclusion of her paper, Shizuko phrased the argument entirely in her own words, without attribution. She wrote:

> The cultivation of a child with strong *amae* needs robs the child of chances to develop the will to *gambaru*. The absence of the quality to *gambaru* in turn leads the child to utilize deviant strategies in order to escape from the pressures of academic competition. Furthermore, the concept of *sunao* itself creates those who lack independence and are unable to compete in the harsh educational competition. Consequently, the deviant child is weak both mentally and emotionally, a product of the modern stress laden education system of Japan.

With the notion of the reserved and obedient (*sunao*) child who doesn't have the will to persevere (*gambaru*), Shizuko was drawing almost directly from Crystal's (1994) analysis of the good child who is vulnerable to the competitive pressures of the school system. The words are Shizuko's, but the argument is one that was appropriated from a source. Reflecting a lack of confidence and experience, Shizuko avoided trying to articulate her own opinions in an academic way and integrate them into the overall argument. Instead, she put her own ideas to the side and followed the logic of the source readings to finish the paper, voicing ideas and interpretations that did not reflect her perspective.

In fact, Shizuko commented on this process explicitly in small-group discussion during the last presentation session of the semester, prior to submitting the revised final paper. After describing her basic argument to the group, Shizuko responded to questions from classmates. The comment in turn 4, "when I'm writing the paper" was directed to me (I was sitting in on the discussion).

M are you saying that, um, *amae*, has weakened in the past

S it says that *amae* um, , is a factor that contributes to uh, children not being able to tolerate situations of stress,

M is that because the child is, dependent on the mother/

S it's both, yeah , , , , *hhh* , , when I'm writing the paper/ and, I don't agree with what I'm writing about/

All *hhh!*

S like, should I write, 'I don't agree with this'/ or should I just write it because,

K I think you should just ignore it right/ I [mean-

E [why do you need it/

S I mean, it supports my argument, but I still don't agree with it

All *hhh*

K well how come you don't agree with it if it supports it/

S it doesn't make sense, like

All *hhh*

When Shizuko made the admission that she didn't agree with her own argument, she laughed in embarrassment (indicated by *hhh*) and admitted she was stuck between her feelings and the logic of her academic argument. Note that, in response to M's clarification about the term indulgence (*amae*), Shizuko answered "it says," referring, not to her own opinion, but to the source article. Framing her response in this way, Shizuko was indexing a lack of agency and ownership of her own argument.

Obviously, it is difficult to talk about the ownership of words, given the intertextuality of all speech that is "filled with echoes and reverberations of other utterances to which it is related" (Bakhtin, 1994, p. 85). Indeed, Pennycook (1996) questions the notion of original authorship and points out that textual borrowing is an integral, inevitable component of writing. Ivanic (1998, p. 141), too, notes that a writer's text is "saturated in currently available discourses, even though it is at the same time her own, uniquely creative contribution." Clearly, Shizuko engaged in borrowing, appropriating vocabulary, ideas, perspectives, and even grammatical structure from journal sources, and synthesizing the heteroglossic elements into an original argument. But in the textual borrowing, she was excluding her own ideas because she did not know how to express them in a way that would fit. She ended up writing from an extrinsic discursive position that was not her own. Her own textual voice was reduced, her own ideas excluded.

Discussion

Shizuko's writing development can be traced in terms of shifting positions, as she displayed an increased mastery of academic discourse conventions, based on the socially situated assistance she received in the seminar. At the end of the course, there was every indication she had developed into a confident writer, and it was only after the term ended did it become apparent that she had not actually learned how to build an academic argument. Shizuko's story demonstrates that students may develop a surface-level proficiency with relevant "academic conventions and textual resources" (Canagarajah, 2015, p. 131), yet still not be able to explain their ideas or present a reasoned case in support of an opinion. In other words, the trajectory of enculturation was skewed toward the appropriation of textual features of academic discourse while neglecting the expression of the student's own voice and textual identity.

There may be a tendency to assume that development of academic literacy in the classroom follows a unidirectional progression toward successful acquisition, but that did not happen in Shizuko's case. Her shift in positioning proceeded along a complex and contradictory trajectory. She showed improvement as she lost confidence. Her textual voice grew in strength as she grew confused about how to negotiate an argument, and she struggled even though it appeared she was negotiating the writing assignments successfully. The disparate trajectories suggest that fluency of expression and facility of reasoning are distinct constructs, and that a student can address an academic audience yet find it difficult to explain an idea with evidence and justification.

Ivanic (1998) notes that students are sometimes positioned in the role of a novice when an instructor frames a writing assignment in a way that implicitly requires textual reliance on expert opinion, not the students' ideas (p. 297-300). Indeed, Shizuko relied on the voice of recognized authors to construct the argument in her paper, but the issue was not simply the imposition of an external constraint. Shizuko spoke like an expert but she was basically unable to express her own ideas, which points to a gap in language proficiency she brought to the classroom on the first day of the term, which I must admit that, as her teacher, I did not notice. What is now clear is that, in spite of conversational fluency, Shizuko lacked a solid foundation of expressive skills on which to build academic voice, a limitation that was evident in the abbreviated reasoning she used to talk about her own ideas. When she did express an opinion, it was phrased in prescriptive terms offered

with minimal explanation. When it became clear that explicit prescription did not fit, she had little recourse but to delete it, thus abandoning her own opinion. It may be natural to assume that academic skills automatically accompany advanced conversational proficiency, but as research on bilingualism shows (e.g., Cummins, 2008), it is a widely-held misconception.

A sociocultural perspective inverts the typical view of L2 acquisition, shifting attention from the individual's ability to the social context and ways that learners are "constructed" by social experiences which mediate development (Sivasubramaniam, 2009b). Learning is "as much a matter of students' being acquired by a knowledge system as it is a matter of students' acquiring that knowledge system" (Faltis & Hudelson, 1994, p. 458). This directional transposition broadens the lens with which to view Shizuko's writing, to include ways in which she was engaged to speak and write both in the seminar and prior to entering university. The seminar, while providing authentic practice and scaffolded support, was overly focused on the appropriation of academic discourse conventions, which primarily involved, in Prior's (1995) terms, the centripetal movement of imitation, rather than the centrifugal shift of creative expression. Had the seminar been less focused on discursive content and convention and more attuned to Shizuko's skills of reasoning and explanation, she would likely have been pushed to express her ideas and explain the concepts she encountered, such as the value of creativity and the limitations of conformity. In this case, she would have likely felt less confusion and more confidence. As it was, the seminar framed writing as enculturation (Casanave, 1995), primarily in terms of developing textual features and meeting disciplinary expectations. In prioritizing the shift toward academic convention, Shizuko's textual voice was neglected and her agency weakened.

A related issue concerns the kind of academic literacy with which Shizuko was engaged prior to entering university. In Japan (and other Asian contexts as well), there is a strong tendency in secondary EFL education to emphasize receptive skills, with little attention given to productive expression. In typical high school EFL classrooms, L2 students are positioned as listeners, while the role of speaker who constructs knowledge is reserved for teachers (or the textbook). Students are rarely asked to explain their opinions or engage in extended argument, a receptive arrangement that is prevalent given the concern for entrance exam preparation (Kikuchi, 2009). Shizuko's lack of expressive skill suggests her lack of experience engaging in extended talk and doing things like justifying an opinion, clarifying a point, offering evidence, and presenting counter perspectives.

Generally, the assumption is that knowledge flows to, not from the student, a pattern that research on classroom interaction finds repeatedly, even in university contexts (Hardman, 2008). It was this background that Shizuko brought to the seminar, with few chances to talk and reason aloud, to engage in "sustained thinking" and extended argument (Thompson, 2008, p. 243) that strengthen the fundamental skills of explanation and expression.

Shizuko's story reminds us that the university EFL classroom is positioned on both sides of the line that separates advanced academic content and basic language skills. The challenge for the writing seminar is to shift its own position, to better balance a focus on the textual features of academic discourse with the expressive skills of student voice, in two-way enculturation that does not lose track of creative expression when attention is placed on discursive conventions. Thus, the goal is to empower student voice and agency (Sivasubramaniam, 2009a), to engage learners in sustained thinking preliminary to and in conjunction with writing practice, considering both the rhetorical features of academic discourse and the productive skills that support students as legitimate thinkers. In other words, acquisition is two-way dialogue that involves, not only conforming to discoursal conventions, but also in a sense shaping them as well. If students are not invited to interact in the transformative generation of their own ideas, they may find it difficult to develop full membership in the academic discourse community they wish to join.

References

Bakhtin, M.M. (1994). The problem of speech genres. In P. Morris (Ed.), *The Bakhtin reader: Selected writings of Bakhtin, Medvedev, Voloshinov* (pp. 80-87). London: Edward Arnold.

Belcher, D. (1994). The apprenticeship approach to advanced academic literacy: Graduate students and their mentors. *English for Specific Purposes, 13*(1), 23-34.

Blakeslee, A. M. (1997). Activity, context, interaction, and authority: Learning to write scientific papers in situ. *Journal of Business and Technical Communication, 11*(2), 125-169.

Burns, A. (2010). *Doing action research in English language teaching: A guide for practitioners*. New York: Routledge.

Canagarajah, A. S. (2015). "Blessed in my own way:" Pedagogical affordances for dialogical voice construction in multilingual student writing. *Journal of Second Language Writing, 27*, 122-139.

Casanave, C.P. (1995). Local interactions: Constructing contexts for composing in a graduate sociology program. In D. Belcher & G. Braine (Eds.), *Academic writing in a second language: Essays on research and pedagogy* (pp. 83-110). Norwood, NJ: Ablex.

Clarke, M. A. (1994). The dysfunctions of the theory/practice discourse. *TESOL Quarterly, 28*(1), 9-26.

Crookes, G. (1993). Action research for second language teachers: Going beyond teacher research. *Applied Linguistics, 14*(2), 130-143.

Crystal, D. S. (1994). Concepts of deviance in children and adolescents: The case of Japan. *Deviant Behavior, 15*(3), 241-266.

Cummins, J. (2008). BICS and CALP: Empirical and theoretical status of the distinction. In P. Duff & N. Hornberger (Eds.), *Encyclopedia of language and education: Language socialization* (pp. 487-499). NY: Springer Science.

Daniels, H. (2016). *Vygotsky and Pedagogy*. Oxon, UK: Routledge.

Faltis, C., & Hudelson, S. (1994). Learning English as an additional language in K-12 schools. *TESOL Quarterly*, 457-468.

Ferris, D. R., & Hedgecock, J. (2013). *Teaching L2 composition: Purpose, process, and practice*. NewYork/London: Routledge.

Freedman, A. & Adam, C. (1996). Learning to write professionally: "Situated learning" and the transition from university to professional discourse. *Journal of Business and Technical Communication, 10*(4), 395-427.

Hardman, F. (2008). The guided co-construction of knowledge. In M. Martin-Jones, A. de Mejia & N. Hornberger (Eds.), *Encyclopedia of language and education* (pp. 253-264). New York: Springer.

Hubbard, R.S. & Power, B.M. (1993). *The art of classroom inquiry: A handbook for teacher-researchers*. Portsmouth, N.H.: Heinemann.

Ivanic, R. (1998). *Writing and identity: The discoursal construction of identity in academic writing*. Amsterdam/Philadelphia: John Benjamins.

Johnson, K. E. (2006). The sociocultural turn and its challenges for second language teacher education. *Tesol Quarterly, 40*(1), 235-257.

Kanno, Y. (1999). The use of the community-of-practice perspective in language minority research. *TESOL Quarterly, 33*(1), 126-132.

Kanno, Y. (2003). *Negotiating bilingual and bicultural identities: Japanese returnees betwixt two worlds*. NY: Routledge.

Kikuchi, K. (2009). Listening to our learners' voices: What demotivates Japanese high school students? *Language Teaching Research, 13*(4), 453-471.

Kubota, R. (1997). A reevaluation of the uniqueness of Japanese written discourse. *Written Communication, 14* (4), 460-480.

Lave, J. (1996). Teaching, as learning, in practice. *Mind, Culture, and Activity 3* (3), 149-164.

Lave, J. & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. New York: Cambridge University Press.

Leki, I. (2001). A narrow thinking system: Nonnative-English-speaking students in group projects across the curriculum. *TESOL Quarterly, 35*(1), 39-67

Leki, I. & Carson, J. (1997). "Completely different worlds": EAP and the writing experiences of ESL students in university courses. *TESOL Quarterly, 31* (1), 39-69.

Leki, I., Cumming, A., & Silva, T. (2008). *A synthesis of research on second language writing in English*. Routledge.

Lock, M. (1991). Flawed jewels and national dis/order: Narratives on adolescent dissent in Japan. *The Journal of Psychohistory 18*(4), 507-531.

Mercer, N. (2000). *Words & minds: How we use language to think together*. London: Routledge.

Mercer, N. (2016). Education and the social brain: Linking language, thinking, teaching and learning, *Education & didactique, 10(2), 9-23*. DOI : 10.4000/educationdidactique.2523.

Mercer, N., & Howe, C. (2012). Explaining the dialogic processes of teaching and learning: The value and potential of sociocultural theory. *Learning, Culture and Social Interaction, 1*(1), 12-21.

Nunn, R. (2014). Holistic learning, first-person voice and developing academic competence. *The Asian EFL Journal Professional Teaching Articles, 74*, 19-31.

Patton, M.Q. (2015). *Qualitative research & evaluation methods* (4th ed.). LA: Sage.

Pavlenko, A., & Lantolf, J. P. (2000). Second language learning as participation and the (re) construction of selves. In J.P. Lantolf (Ed.), *Sociocultural theory and second language learning* (pp. 155-177). Oxford: Oxford University Press.

Pennycook, A. (1996). Borrowing others' words: Text, ownership, memory, and plagiarism. *TESOL Quarterly, 30*(2), 201-230.

Prior, P. (1995). Redefining the task: An ethnographic examination of writing and response in graduate seminars. In D. Belcher & G. Braine (Eds.), *Academic writing in a second language: Essays on research and pedagogy* (pp. 47-82). Norwood, NJ: Ablex.

Sivasubramaniam, S. (2009a). Articulating an alternate voice in language teaching research: An exercise in practitioner empowerment. In R. Nunn & J. Adamson (Eds.), *Accepting Alternative Voices in EFL Journal Articles* (pp. 50-66). Busan, Korea: Asian EFL Journal Press.

Sivasubramaniam, S. (2009b). Issues and insights for promoting agency, voice and subjecthood in reading and assessment.*The Asian EFL Journal Quarterly, 11* (1), 8-38.

Sivasubramaniam, S. (2015). Maximizing EIL competence through students' agency, voice and inter-subjectivity. *English Scholarship Beyond Borders: 1 (1)*, 74-108.

Sfard, A. (1998). On two metaphors for learning and the dangers of choosing just one. *Educational researcher*, *27*(2), 4-13.

Spack, R. (1997). The acquisition of academic literacy in a second language: A longitudinal case study. *Written Communication, 14*(1), 3-62.

Thomas, D.R. (2006). A general inductive approach for analyzing qualitative evaluation data. *American Journal of Evaluation, 27*(2), 237-246.

Thompson, P. (2008). Learning through extended talk. *Language and Education, 22*(3), 241-256.

Thorsten, M. (1996). A few bad women: Manufacturing "education mamas" in postwar Japan. *International Journal of Politics, Culture, and Society, 10*(1), 51-71.

Wenger, E. (1998). *Communities of Practice: Learning, Meaning, and Identity*. Cambridge University Press.

Walsh, S. (2011). *Exploring classroom discourse: Language in action*. NY: Routledge.

Wette, R. (2014). Teachers' practices in EAP writing instruction: Use of models and modeling. *System, 42*, 60-69.

THE ASIAN ESP JOURNAL

Building Bridges, Creating Competencies: ESP capacity building for the Israeli information technology industry

Monica Broido, Daniel Portman

Tel Aviv University

Interdisciplinary Center Herzliya

Biodata

Monica Broido is Head of the Academic Writing Programs at Tel Aviv University, where she teaches academic writing to PhD students in several faculties. She is also the English Coordinator for several schools at IDC Herzliya. Her research interests include curriculum design and educational technology implementation at the tertiary level.

Daniel Portman lectures in English for Business and Economics at the Interdisciplinary Center Herzliya, Israel and in a number of industries, including hi-tech and pharmaceuticals. His research interests include tertiary students' transitioning from student to professional and the ESP needs of professionals.

Abstract[1,2]

In today's dynamic global economy, tertiary institutions are recognizing the importance of preparing their future graduates with the core skills they will need when entering the workforce. In Israel, unfortunately, we are witnessing very little investigation of this, even in the study

[1] Abbreviations: EL=English Language; HE=Higher Education; EU=European Union; EFL=English as a Foreign Language; ESP=English for Specific Purposes; HR=Human Resources; IT=Information Technology; ICC=intercultural competence

[2] This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

programs for future hi-tech employees. The Israeli hi-tech industry plays a major role in the economy, contributing significantly to the country's gross domestic product and employing a relatively high percentage of citizens. Given the global nature of Israeli hi-tech, proficiency in English is considered to be of utmost importance. Therefore, this study investigates the English language needs of hi-tech employees from the perspectives of field stakeholders: human resources officials, managers, and employees in order to inform ESP policy makers. The findings of this research reveal that productive skills (speaking and writing) are not only of great need but also often at an insufficient level among employees. An additional theme that has arisen is the centrality of intercultural competence for communicating with partners outside of Israel. We therefore recommend that Israeli tertiary level EFL departments consider an ESP curriculum that incorporates more productive skills and awareness of intercultural competence in the curriculum.

Keywords: English as a Foreign Language; academia-industry relations; needs assessment; capacity building

1. Introduction

Of the one billion new workers who will enter the job market in the next decade, only 40% are expected to be able to get jobs that currently exist (World Bank, n.d.; World Economic Forum: Global Agenda Council on Employment, n.d.). Even today, in the growing complexity of the business environment, jobs and their professional requirements are evolving in ways that academia might be slow to respond to, since they might be operating in a silo. These constantly changing paradigms, therefore, require that universities and industry, which for a long time have been operating in separate domains, create bridges and inform each other of the changing needs of students and professionals (World Economic Forum: Global Agenda Council on Employment, n.d.).

In light of this, we have been witnessing some recent attention by governments to the critical 'interconnectedness of business and academia' as they urge universities to provide 'capacity building' in order to facilitate the employability of their graduates (Jones, 2013; Mikhaylov, 2014). For example, in 2011, the US Department of Education issued a directive linking federal funding of tertiary programs to their graduates' ability to achieve 'gainful employment in recognized occupations' (United States Government, 2011). In the EU, a 2010 European Commission 'Youth

on the Move' initiative charges member states with 'better gearing learning outcomes towards labor market needs' (Barroso, 2010). In Israel, higher education (HE) institutes are tasked with providing 'professional training to help the country advance' (Davidovitch, Sinuany-Stern, & Iram, 2012).

While it would be ideal for HE institutes to know the exact professional skills needed by the future workforce, today's highly-dynamic 21st century economy precludes this. However, there are certain core 'abilities [that] are... transferable between occupations...' (Carnevale, Smith, Strohl, 2013; Jones, 2013) such as 'soft skills' (Clokie & Fourie, 2016), principally English language (EL) proficiency, which provide the competencies demanded of employers now and in the future (Jones, 2013). This is resonated in the Indian National Knowledge Commission report, which holds that "command over the English language is perhaps the most important determinant of access to higher education, employment possibilities and social opportunities" (Government of India, 2009).

Along these lines, it is important to grasp the specific EL needs of future HE graduates, especially as many multinational corporations operate in English globally, and have adopted English as their official workplace language locally to increase efficiency and transparency (Spence & Liu, 2013). The literature provides several examples of this research in diverse fields and countries, such as the tourism industry in Egypt (Ghany & Latif, 2012), human resources (HR) in Malaysia (Moslehifar, Ibrahim, Ali, & Aireen, 2012), banking and finance in Taiwan (Wu & Chin, 2010), public relations in Australia and Singapore (Fitch & Desai, 2012), and engineering and the high-tech industry in Taiwan (Spence & Liu, 2013).

Among the studies on EL needs in industry, various skills have been identified as important to insiders. For example, in banking and finance, as well as in engineering and high-tech, Taiwanese professionals indicated needs in all the four general skills of writing, reading, active listening, and speaking; specifically the writing of emails, meeting minutes, memos, project proposals, and reports; conversing formally and informally, tele-conferencing and telephony, negotiating, building relationships, and delivering presentations (Spence & Liu, 2013). Some of these professionals reported also that improving their spoken English would facilitate 'cross-cultural communication' to allow 'a good working relationship with foreign clients or partners' (Fitch & Desai, 2012; Wu & Chin, 2010).

This holds true in many fields, including the global high-tech industry (Spence & Liu, 2013). It has been found by Beyene et al. (2009) that uneven levels of EL proficiency in companies, where English is the *lingua franc*a, disrupts collaboration and information sharing, and contributed to tensions between native and non-native speakers. In the study, non-native English speakers were hesitant to use English when interacting with native speakers, leading them to feel 'excluded and devalued', thus damaging interaction and collaboration. This resonates with findings in Israel, where Israeli hi-tech employees engaging with Indian team members reported high levels of stress resulting from difficulties with intercultural communication in English (Pines & Zaidman, 2014).

Being able to communicate appropriately in an intercultural milieu in the IT industry in Israel is crucial for the Israeli economy, since one quarter of the Israeli industrial workforce (204,000 workers) is employed in hi-tech manufacturing (Israel Ministry of Foreign Affairs, n.d.). Hi-tech growth in Israel averages about 8% per year, making up nearly a fifth of the country's GDP, while over 90% of the public budgets for R&D is spent on high-tech, making this investment 'the highest among OECD countries' (Israel Ministry of Foreign Affairs, n.d.). Israel boasts some 4000 hi-tech companies, the 'largest concentration of such companies outside California' (Pines & Zaidman, 2014), in varied sectors such as medical electronics, agro-technology, telecommunication, and computer hardware and software. The country holds R&D agreements with the US, Canada, nine EU countries, Hong Kong, India, Turkey, and China. Furthermore, Israeli hi-tech stocks are traded on Wall Street and several European stock exchanges (Israel Ministry of Foreign Affairs, n.d.). Thereby, most Israeli hi-tech employees are likely to require the skills needed for effective global communications on some scale.

Given the tremendous role of hi-tech in Israel, appropriate EL provision in HE is imperative. Ironically, at the HE level, not all students study English; many Computer Science and Engineering students receive an exemption from English through one of several university placement exams, where only reading comprehension is assessed. Based on the placement exam, students are placed into up-to-five (depending on the institution) semester-long levels, where they are offered, but are not obliged to take, general English reading comprehension skills courses. The English as a foreign language (EL) programs throughout the country offer Computer Science and Engineering students ESP only in the exit-level semester course (52 academic hours), and even then, usually no writing or oral skills are taught. This unwritten EFL policy, which came about in the mid-20th century,

was based on the assumption that students would be required to read academic material in English for their undergraduate studies, whereas in reality, most read material in Hebrew (Symon & Broido, 2014). Even if reading in English were needed beyond the undergraduate level, of the nearly 240,000 graduates, only some 70,000 pursue postgraduate degrees (The Council for Higher Education - The Planning and Budgeting Committee, 2014). Therefore, in response to this outdated approach, a consortium, involving eleven institutes of HE (five Israeli and six European), two Israeli educational organizations, and the National Union of Israeli Students, has recently completed a three-year research project, ECOSTAR (English as the Cornerstone of Sustainable Technology and Research), funded by the Tempus Programme of the European Union (EU). The main goal of ECOSTAR was to 'develop a new framework for English teaching' in Israeli HE institutions, in response to 'today's age of globalization' and the requirements of the '21st [century] workplace', as informed by academic stakeholders (Tempus ECOSTAR, n.d.). However, at least two studies have pointed to a possible mismatch between the assumptions of academic stakeholders and the actual field needs (e.g. Moslehifar et al., 2012; Orr & John, 2001). Therefore, it is important that academia be informed by the industry itself (Clokie & Fourie, 2016; Orr & John, 2001; Wu & Chin, 2010).

While investigation of EL needs, assisted by industry insiders, has not been conducted extensively in Israel (though see Deutch 2003 for regarding Law Studies in Israel), some studies have determined that the teaching of English for academic purposes (EAP)/English for specific purposes (ESP) does not meet the needs of today's professionals in a variety of fields (Symon & Broido, 2014; Tempus - European Commission EFA, n.d.). Research has revealed that the actual needs of graduates require the teaching of all four skills in preparation for their professional lives (Tempus – European Commission EFA, n.d.). However, the actual kinds of tasks carried out by the workers have not been investigated. As such, given the central role of the IT industry in the Israeli economy, the current study aims to identify the specific EL competencies required for hi-tech, as informed by insider knowledge. This will hopefully allow for the creation of better and more effective ESP programs in HE for future IT professionals. Therefore, our research question is as follows: What EL competencies are expected of HE graduates applying for a hi-tech job in Israel?

2. Materials and Methods

In order to understand the EL expectations of the IT industry for HE graduates, we investigated

five hi-tech companies, located either in Tel Aviv or within 30 km of Tel Aviv, all considered within Israel's hi-tech 'hub'. All five companies conduct the majority of their business globally. As the first stage, we conducted semi-structured interviews with HR officials to understand the key topics surrounding EL in these companies. Next, based on these interviews, we created and distributed questionnaires to HR managers, managers, and employees to gain insight into the role of EL in recruitment and daily work. As a third stage, we followed up with some of the questionnaire respondents to clarify some of their responses. Table 1 shows the companies and their industry focus.

Table 1: Companies and Industry Focus

Company (pseudonym)	**Industry focus**
Hitech 1	software to support the manufacturing of electronics
Hitech 2	software for the security industry
Hitech 3	production of storage devices
Hitech 4	software and hardware for the security industry
Hitech 5	algorithms for the investment industry

Within these five companies, we were informed by three groups of stakeholders: HR professionals, managers, and employees. In this way, we could avail ourselves of a trinocular perspective: (1) EL requirements as perceived at the organizational level (HR); (2) the importance of specific EL tasks in employees' work (managers); and (3) the actual use of specific EL tasks in the field (employees). All participants consented to take part in this study, and understood that our interaction with them was for academic research purposes.

2.1 Data Collection

Our data were gathered as follows:

Table 2: First Stage Data Collection

Hi-tech company stakeholder	**Data collection instrument**	**Companies (responses)**	**Total responses**
HR professionals	semi-structured interviews (30-45 min. each)	Hitech 1 (1) Hitech 2 (1) Hitech 3 (1)	3
	general questionnaire	Hitech 2 (1) Hitech 4 (1)	2
	finance questionnaire	Hitech 2 (1) Hitech 4 (1)	2
	marketing questionnaire	Hitech 4 (1)	1
	support questionnaire	Hitech 2 (1) Hitech 4 (1)	2
	R&D questionnaire	Hitech 2 (1) Hitech 4 (1)	2
	administrative questionnaire	Hitech 2 (1) Hitech 4 (1)	2
	follow-up interview (20 min.)	Hitech 2 (1)	1
Managers	questionnaires	Hitech 2 (4) Hitech 4 (2) Hitech 5 (2)	8
	follow-up email	Hitech 2 (1)	2
Employees	questionnaires	Hitech 2 (8) Hitech 5 (2)	10
	follow-up telephone interview (15 min.)	Hitech 2 (1)	1

Each of these is discussed below.

2.2 Semi-structured interviews with HR managers

HR professionals were our first point of contact, as we felt they would be able to provide an organizational-wide perspective on the EL expectations of HE graduates. As an organization's gatekeeper vis-à-vis HE graduate candidates, HR is naturally informed by the rest of the company regarding professional expectations, including EL, in the hiring process. In addition, HR managers are responsible for directing on-the-job training of the employees, including EL training.

As such, we conducted three in-depth, semi-structured interviews (one in person and two by phone) with HR professionals at Hitech companies 1, 2, and 3, focusing on their hiring and training practices with regard to EL. The following were the questions that guided our semi-structured interviews:

1. *Who do your employees interact with in English?*
2. *Does your company test candidates' English level during the hiring process?*
3. *Does your company invest in EL training? In what areas?*
4. *Can a lack of English be a barrier for the company's business?*
5. *What EL competencies would you expect an HE graduate looking to work at your company to have?*
6. *Are there different EL expectations for different populations?*
7. *Do you have any suggestions for Israeli HE EFL policymakers?*

These interviews were recorded and content-analyzed for themes we deemed worthy of further exploration in the second stage of our data collection, the questionnaires.

2.3 Questionnaires for stakeholders

Based on the information given by the HR managers and insights from one of the authors who has over 18 years of experience teaching ESP in hi-tech, eight sets of electronic questionnaires were devised and sent amongst the three sets of stakeholders. The informants had the option to answer anonymously. We sent the links to the different questionnaires to HR professionals and managers for distribution to their team members. As we were interested in gathering as much data as possible from the largest pool possible, we asked those who received the questionnaires to snowball the link to peers and friends in the Israeli IT industry.

The questionnaires were broken down as follows:

A. one general questionnaire for HR professionals eliciting general information about the use of English at the company, including testing and training practices. This allowed us to gain a general picture of the role of EL at the companies.

B. five different questionnaires for HR professionals eliciting how important specific EL skills such as reading professional texts, writing routine correspondences, and giving oral presentations, are in the hiring considerations for the different employment sectors in their company, i.e. finance, marketing, support, R&D, and administration. This allowed us to understand the role of different EL skills in the *hiring process* of each kind of function. (See sample questionnaire in Appendix A: HR questionnaire about finance.)

C. one questionnaire for managers addressing their perceived importance of specific EL skills for their subordinates, such as the ones outlined in B above. This allowed us to understand the role of EL skills for *employees to work successfully* from a managerial point-of-view.

D. one questionnaire for workers eliciting, aside from demographic data, information about their previous language studies and the frequency of certain EL tasks on the job, such as those outlined in B above. This allowed us to understand the *actual use* of EL in the work environment amongst employees.

It should be noted at this point that attempting to conduct a research project amidst the bustle of the Start-up Nation is no easy task, as stakeholders seem to have very little spare time (or patience for researchers). Thus, even after more than six months of repeated email and phone reminders to our well-intentioned, yet harried informants, we received only 29 questionnaires back. Table 3 summarizes this information, along with the number of responses to each one:

Table 3: Stage Two - Stakeholders and Questionnaires

Stakeholder	**Questionnaire**	**Number of responses**
HR	A general questionnaire was sent to the HR managers of Hitech 2 and 4 in order to consolidate information from the semi-structured interviews. Five different questionnaires were then sent to the same HR professionals, regarding the importance of EL when hiring for the following functions: 1. Finance 2. Marketing 3. Support 4. R&D 5. Administrative	2 2 1 2 2 2
Managers	A questionnaire was sent to managers in Hitechs 2, 4, 5 addressing the importance of certain EL tasks in the daily work of employees.	8
Employees	A questionnaire was sent to employees at Hightechs 2 and 5 addressing the frequency of certain EL tasks in the daily life of employees.	10
Total number of questionnaire responses		**29**

The results of these questionnaires were analyzed to compare the viewpoints of the three stakeholder populations with regard to EL expectations and practice. During analysis, inconsistencies among the three populations were identified. For example, the importance of knowing how to write reports was rated as low by managers, yet employees reported writing reports rather frequently. To try to understand these inconsistencies, follow-up contact was made with representatives of the three stakeholder populations.

2.4 Follow-up contact with representatives of stakeholders

As a third stage, in order to understand and validate some of the questionnaire data, questions with inconsistent responses were discussed with relevant respondents by telephone. In such cases, we asked the informants to expand and clarify their response.

3. Results

3.1 Interviews with HR

3.1.1 English use

All three company HR managers cited active use of English in their companies, with customers and coworkers situated on nearly every continent.

3.1.2 EL level testing during the hiring process

During the hiring process, while all three companies test the EL level of candidates who will be interacting internationally, the testing practices differ. The following is a summary of the EL testing practices for Hitech companies 1, 2, and 3.

Hitech 1

The EL level of candidates is checked by HR. For example, a candidate might receive a case study and then be asked to explain how they would cope with the issue in English. Administrative candidates might not only be interviewed in English but also asked to write a task typical of their prospective role, such as an announcement. Candidates coming from a global company are asked to self-assess their English level.

Hitech 2

The EL level of candidates is checked by the Director of HR. In addition to a reading and writing test, candidates might be asked how comfortable they are with their English, including their experience in using English. With regard to specific roles, as with Hitech 1, candidates are tested according to the anticipated needs of the role. For example, support engineers receive a hypothetical issue to be solved via email and then they are asked to write an email providing the solution in English. This task allows the Director of HR to examine several aspects: comprehension of the issue, vocabulary usage, clarity of expression, logical writing, and politeness. As with Hitech 1, administrative staff are mainly tested orally, as their principal duty in English is to greet and assist international visitors. In such cases, the Director of HR might hold an informal conversation with the candidate and then conduct portions of the interview in English. Concerning candidates from other global companies, as with Hitech 1, it is assumed they have an appropriate EL level, yet this is still confirmed by contacting references.

Hitech 3

For positions requiring English, EL is checked formally through a third-party testing firm, which assesses oral fluency. In addition, HR conducts the entire interview in English. The purpose of this interview is not only to assess the candidate's English level but also to function as a diagnostic so that EL gaps can be filled, should the candidate eventually be hired. Table 1 summarizes the key findings regarding testing at the three companies:

Table 4: Key findings regarding EL testing practices at Hitech 1, 2, and 3.

	Hitech 1	**Hitech 2**	**Hitech 3**
Who gets tested?	all candidates requiring English in their job	all candidates requiring English in their job	all candidates requiring English in their job
Who conducts the test?	HR	HR	third-party testing firm + HR

What is the purpose of the test?	assessment (suitability for the position)	assessment (suitability for the position	suitability for the position + diagnostic for further training
What skills are tested?	speaking, reading, writing (depending on the role)	speaking, reading, writing (depending on the role)	speaking

As can be seen, the testing practices of Hitech 1 and 2 are fundamentally the same, while those of Hitech 3 differ in three aspects: the test administrator, the purpose of the test, and the skill tested.

3.1.3 EL training

Hitech 1

According to the HR official, 'our basic assumption is that we're not an English school for our employees' (HT1 interview data). In other words, it is expected that candidates arrive at the interview with the EL skills required for the job to which they are applying. Notwithstanding, the company does strengthen the EL skills of an employee moving from a local to an international role. Also, if EL skills are found to be lacking for a specific role, the company helps bridge this gap, but this is determined on a case-by-case basis. On a wider scale, for less-experienced populations, the company provides focused, skill-based EL training, such as how to write business emails.

While not perceived as EL per se by Hitech 1, training for intercultural competence (ICC) emerged as extremely important, precisely because problems and misunderstandings occur even when communicating in a foreign language that is technically correct (see example in 3.1.4 – English as a barrier in HT 1). Unlike with EL training, Hitech 1 'takes 100% responsibility' for its employees' ICC (HT1 interview data). In this regard, Hitech 1 provides workshops, one-on-one training, and a self-developed online program, informed by HR functions in each country where the company operates. This online program serves as part of the new employee orientation.

For employees assigned for relocation, personal ICC consultancy is provided for the employee's family. This has been implemented as a result of relocated employee productivity drops, due to

frustration often felt by the spouse of the employee (often the wife) while on relocation. A successful strategy for dealing with this issue, while at the same time enhancing the local employees' English proficiency, is to have the relocated employee's spouse visit the company in the new country for the purpose of providing English conversation practice to the local employees. This has proven to be especially effective in China, Japan, and Korea, where many locals are hesitant to speak English.

Hitech 2

One of the company goals is to provide many employees with EL training, especially those interacting with customers, such as support professionals, software testers, developers, and administrative staff. While Hitech 2 has not run in-depth training lasting more than a month for any population, it has provided shorter courses emphasizing professional conversation and writing skills.[3]

Hitech 3

Whilst the *modus operandi* at Hitech 3 is not to provide EL courses, the company does offer, short workshops in writing emails and other documents as well as giving presentations. Nonetheless, when required, senior members receive one-to-one tuition. Additionally, like at Hitech 1 and 2, there is a great emphasis on ICC, such that every new employee is provided with country-specific ICC training.

3.1.4 Lack of English as a barrier

Hitech 1

From her experience, the former HR official at Hitech 1 is certain that '...everyone working in a global company has at least ten examples of miscommunication' (HT1 interview data), though not all of these are 'dramatic', or would be considered a 'barrier' to conducting business (interview data). Notwithstanding, there have been instances of senior managers too 'terrified' to deliver

[3] *Authors' note*: *since the interview, one of the authors has provided Hitech 2 with a 1.5 hour ICC lecture, introducing several intercultural parameters relevant to the company's business context.*

lectures to global team members, which would seem to create a rather high barrier (interview data). Furthermore, the impending possibility of a company English-only language policy is suspected as a potential barrier to conducting business. For example, if company-wide feedback questionnaires are written in English, it might create a situation in which some employees would not be able to fully participate in the feedback process. The HR official provided an additional example, which she said was not language-based but rooted in ICC. Once, a Chinese colleague called this HR official 'aggressive,' which the official took as an insult. However, when the Chinese colleague was asked about this, she said that being called aggressive is a great compliment, as it implies tenacity.

Hitech 2

The HR official at Hitech 2 cited a lack of English as a potential barrier to conducting business. For example, at a global meeting, a high-level technical executive was unable to contribute to a meeting. In another example, in an HR email, a US team member wrote that 'it would be a shame' not to hire a particular candidate. This was interpreted literally by the Israeli team member, who had understood that they would be bringing great shame to the organization by not hiring the candidate. For instance, many times employees translate their thoughts directly from Hebrew to English, resulting in an utterance that might be 'appropriate for Israelis' but 'not for Americans' (HI 2 interview data). This has led, for example, to instances in which Israeli managers have inadvertently sparked 'antagonism' in their customers (HI 2 interview data). Also, Israeli HR-related communication has been interpreted as 'gruff and abrupt' for the US receiver (HI 2 interview data).

Hitech 3

Lack of English can act as a barrier to conducting business on several fronts. For example, an engineer who is able to write well might still lack the confidence to speak. Similarly, when conducting a professional workshop, lecturers whose English is lacking might find themselves frustrated with a 'block in [their] mind', as they feel as if their English is 'not good enough' to deliver the lecture as effectively as possible. Perhaps one of the most detrimental effects of a lack of English is the uneven playing field that can result when it comes to promotion opportunities. At higher corporate levels, Israeli team members might begin competing with US candidates for

global roles. As such, when presenting their candidacy, the Israeli must spend their time not only preparing their candidacy but also formulating and practicing appropriate language. In contrast, the US candidate has the advantage of solely focusing on building their case, thereby speaking more naturally and confidently.

3.1.5 EL competencies expected of an HE graduate

Hitech 1

According to the HR official, the 'indispensability' of English in hi-tech is already an accepted standard. At Hitech 1, professional English is needed both inside and outside the company, especially in global roles, which are some two-thirds of the positions. Therefore, all candidates should be able to 'conduct an intelligent conversation', write emails, and read and understand professional literature. Also, the more any employee advances, the higher both the EL and ICC is expected. In fact, ICC is considered part of the leadership competency requirements at Hitech 1.

Hitech 2

There are no baseline EL skills for all employees, but different roles require different types of skills. For example, they should be able to write simple emails to provide instructions and answer inquiries. Management members must be able to make presentations to the global management team, while development team members must be able to host their counterparts, and to read and write emails about technical issues. Also, receptionists must be able to answer the phone and conduct a conversation in English.

Hitech 3

Nearly all communication at Hitech 3 is in English. In fact, some employees do not have Hebrew options on their keyboards, and often, managerial training sessions are given in English. As a result, employees are expected to know how to 'verbalize everything [in English] or they can't move forward' (HI 3 interview data). Desired EL skills at Hitech 3 include 'presentation skills, fluent English, [and] perfect grammar' (HI 3 interview data). And yet, while the company assumes that most employees come with such competencies, in reality, these expectations are sometimes unrealistic. Therefore, as with Hitech 1, the need for 'perfect English' is reserved more for

marketing, general, and administrative functions, and less for engineers. It was emphasized, however, that as team members advance in rank, more interaction takes place with colleagues overseas, requiring that EL skills should expand accordingly.

3.1.6 EL Expectations for different populations

Hitech 1

High levels of EL proficiency are expected of first tier customer support professionals, as their primary audience is customers seeking their assistance in resolving technical issues. Additionally, all global positions require a high level of proficiency. For example, two-thirds of the operations positions are global, thus prioritizing EL skills for this population, which was not the case even ten years ago. Moreover, as employees are promoted to senior positions, the need for English increases as well, as these employees are called upon to interface with customers and partners outside of Israel.

Hitech 2

Like Hitech 1, EL is a priority for customer-facing professionals as well those who interact with company coworkers outside of Israel. This population is expected to be proficient in speaking and especially reading and writing, as most communication is conducted through email. Even, administrative staff should have basic conversational skills to hold phone conversations and host visitors from abroad, as well as handle basic emails. Similar to Hitech 1, the more senior an employee is, the more proficient the EL level must be, as these executives are expected to make presentations to the company's global management team in the US.

Hitech 3

As with Hitech 1 and Hitech 2, customer-facing roles require a high level of EL. In fact, it was indicated that marketing professionals should have 'perfect English', as all of the company's marketing activities are targeted towards foreign markets. In addition, it was mentioned that for general, administrative and corporate-level functions, EL proficiency 'is a must', as the company as a whole operates solely in English. Predictably, as Hitech 3 professionals are promoted, their EL level should improve as well. This was illustrated by the HR professional herself, who said that as a senior executive, her boss and immediate colleagues are based in the US, thus requiring that

she maintain a high level of proficiency to communicate with them.

3.1.5 Recommendations for EL in HE

Hitech 1

One possible gap is employees' abilities to listen to and understand English in order to facilitate communication. As such, her advice to HE EFL departments is that anything that 'has to do with training listening muscles should not be skipped' (HI 1 interview data), presumably so that employees will be used to a variety of accents and intonation.

Hitech 2

English in HE 'probably needs to be real world oriented' to provide 'good business communication skills'. For example, more 'reading and writing skills' integrated with 'their cultural aspects' are required. Along these lines, it was mentioned that employees still have trouble understanding texts as the texts were meant to be understood, thus pointing to the need for learning how to 'read between the lines', which presumably requires ICC. Also 'explain[ing]...clearly in English is required because 'employee explanations are often misinterpreted' by global partners. Finally, given the fact that many employees 'do not feel comfortable speaking in English', it was suggested that practice in speaking is emphasized during HE and even before.

Hitech 3

In general, it was suggested aiming for a 'higher level of English at colleges and universities', citing that it would be a 'perfect ROI [return on investment] for Israel…'. In particular, presentation skills should be emphasized, especially for situations in which future employees will be interacting with global colleagues and customers. Also, it was suggested that HE emphasize ICC. As with Hitech 2, the HR official recommended increasing English instruction in the primary and secondary years, beginning with first grade.

3.2 Questionnaires

3.2.1 Demographic data

HR professionals, managers, and employees from five different hi-tech companies, located within

Israel's 'hi-tech hub', either in Tel Aviv or within 30 km of Tel Aviv, responded to our questionnaire. The industries included the following: software to support electronics manufacturing; software for the security industry; production of storage devices; software and hardware for the security industry; and algorithm-building for the investment industry.

The HR managers who responded to the questionnaire were female and experienced in their field, having worked between 10-25 years in HR roles, while the other managers who filled out the questionnaires all came from R&D departments.

The employees that answered our questionnaires were 60% male and 40% female; 30% were aged 20-30; 40% aged 30-40; and 20% aged 40-60. The vast majority (80%) holds an academic degree. The surprising fact that 20% are unqualified could be due to the fact that in Israel, many IT workers are recruited straight out of the army, after having served in elite military intelligence IT units, so they have not pursued academic training and yet possess the necessary skills. Of the employees, 40% are engineers, 30% software developers, 20% IT technicians, and 10% researchers. Forty% have been employed at their present company less than two years, while 30% between two to five years, and another 30% over six years. This is a fairly accurate representation of the IT industry with regard to time of employment in one company at the non-executive level. Concerning the amount of time they have been at their present jobs, there was an even spread with 30% having less than two years of experience, 40% with two to five years, and 30% with over six years.

3.2.2 Employee self-ratings

We also asked employees to self-rate their English proficiency in several skills on a scale of 1-10 (1-least to 10-most). 60% rated their reading ability as 'excellent' (9-10), while only 40% rated it as 'good' (7-8). For writing, the picture was reversed, with only 40% their ability as 'excellent' (9-10), while 60% rated it as merely 'good' (7-8). In speaking, the situation was even worse, with only 30% rating their proficiency as 'excellent' (9-10), 40% in the 'good' (7-8) range, while the other 30% rated themselves as having only a 'fair' level of proficiency (4-6). The results for listening tended to lean towards high proficiency, with only 20% in the 'fair' (4-6) or 'basic' range (2-3), another 20% in the 'good' range (7-8), while the majority, 60%, were in the 'excellent' (9-10) range. As we can see, many employees feel that their receptive skills (listening and reading) are higher than their productive skills (speaking and writing). Such findings already point to a

possible need in enhancing productive EL skills amongst future hi-tech employees while they are still in school.

3.2.3 Lack of EL skills as barriers

The HR representatives rated all aspects of English proficiency and knowledge very highly, stating a lack of these skills could present a barrier at work. Since it is their job to make sure all employees have the language skills to deal with work eventualities, they see this aspect as crucial and they make a concerted effort to hire employees with a good knowledge of English. This is probably in light of blunders committed due to EL misunderstandings. Such misunderstandings may be grave and cost the companies not just time and money but also contracts and future alliances. It is not surprising, then, that HR felt that it was not the linguistic knowledge *per se* that was important, but the general fluency and intercultural awareness. This points to the importance of teaching English at the tertiary level as part of a comprehensive ICC framework.

Interestingly, 50% of the workers view EL as a barrier for successfully carrying out their work, whereas only 12.5% of the managers thought so. In a follow-up interview, for example, one manager stated that their employees' EL was 'good enough'. This is despite the fact that about half the employees feel the very opposite. Perhaps the managerial perspective is unaware of employees helping each other out when encountering EL situations beyond their ability. Some of the workers said that when it comes to writing high-stakes correspondence or having high-stakes conversations over the phone, they ask another colleague who speaks better English, to do it for them. This was also mentioned by the HR official in Hitech 2, an L1 English speaker, who is often called upon to proofread key documents. Another explanation for the discrepancy we found could be that the managers felt it was part of their responsibility to step in and help, so that the project is not hurt by employees' lack of EL.

3.2.4 Importance of EL skills

Our questionnaire addressed EL skills based both on the contexts mentioned by the HR managers as well as on one of the author's practical experience teaching ESP at Israeli hi-tech companies.

3.2.4.1 Speaking skills

Meetings/seminars

With regard to participating in meetings and seminars, the majority of employees (60%) attend such events at least once a month; 10% do it on a weekly basis, and 10% on a daily basis. Expectedly, both HR and managers see this ability as very important.

However, as for running meetings and seminars, employees cited this as a very infrequent activity (80% never do so). Interestingly enough, both HR and managers rated this as moderately to very important. It seems that the overall lack of importance as perceived by the employees themselves is due to the low frequency in which employees are charged with managing meetings and seminars. Perhaps the HR and managers' view is that eventually the employees will be called on to conduct such activities and therefore should be equipped to do so.

Presentations

As for presentations, the picture is very interesting and varied; managers were very split in their perceived importance for this skill (37% rated it as high in importance, 38% mid-range, and the rest of low importance). Most employees say they rarely make presentations (80% say they never do it, while 20% say it is rare). This could explain the mid-range and low importance manager rating, yet HR said this is very important, especially for support professionals, while also adding that they know that employees seek and receive help from more senior workers or colleagues to do this.

Negotiations

Negotiation skills in English were rated low by everyone, indicating that this aspect of work in IT might be done by specialized teams and was not part of the requirements for most employees (100% say they have never been involved in negotiations).

Company visitors

Speaking to visitors is not a common occurrence for most employees (60% say they have never

done it, and only one employee reported doing it regularly), yet its importance was rated as high to very high by managers and HR. This difference in perception was explained to us in a follow up interview: even though this is not a frequent activity, workers are still expected to be able to do it.

Telephone support

Telephone support was reported as rather infrequent, with only 20% of employees reporting doing it two to three times a week. In a follow-up interview, this finding was explained by a support professional who mentioned that when she is on support duty, she uses the telephone frequently, yet this occurs only one or two months a year. Therefore, it is not surprising that telephoning was rated as very important for both HR officers and the other managers, as when support professionals use the phone, they must be competent.

The speaking tasks (other than negotiations, which are rated) vary in terms of their frequency of use, yet it is clear that most are critical to successfully conducting business and therefore rated as high by HR and managers.

3.2.4.2 Writing skills

Writing in high tech companies takes many forms, from writing reports and proposals to formal and informal correspondence.

Reports

Writing reports is a very common activity (20% do this daily, while an additional 40% are doing this weekly), and it is correspondingly rated high by both HR and managers.

Proposals for projects

This is not a very common activity (40% report never doing this, and another 40% report doing it once a month), and its importance is seen as different by different managers. We suppose that this fact is influenced by the type of department the managers run.

To try to understand why employees do not frequently write proposals, we asked one HR official

post facto. She said that all technical communication goes through a native English-speaker tech-writer group whose job is to support this aspect (Hitech 2 interview data). Therefore, these workers do not have to take responsibility for this.

Minutes of meetings

Most employees are called upon to write minutes of meetings at least once a month (only 20% reported they never do this). According to HR, writing minutes in English was seen as important for managers, as very important for support personnel, but not so important for R&D technicians.

Correspondence

The frequency of writing "high stakes" correspondence is very hard to determine, as its reported frequency was evenly spread out with 20% saying they never do it, 20% doing it several times a month, 20% doing it weekly, 20% doing it daily, and an additional 20% doing it several times a day. This might be due to the professional responsibilities of these different employees. HR, however, thought this ability was crucial since it presumably can create alliances or cause grave damage to company relations (HI 1, HI 2 interview data). It might be, as mentioned earlier, that if a task is beyond the abilities of some workers, others who possess those abilities are asked to perform them (HI 2 interview data).

Writing semi-personal correspondence was not seen as very important by anyone, nor did employees report doing this much (50% reported they never or very rarely engage in this activity). This is interesting, given the lack of physical contact among global teams and the obvious need to maintain semi-personal relationships through email.

Writing is important in the high-tech world, yet is a neglected skill within Israeli HE, and should be worked on more intensively, especially the report writing.

3.2.4.3 Reading skills

Managers and employees said that reading instructions, manuals, projects, documents, and professional texts was important and is performed by 60-70% of employees at least once a day if not several times a day. HR felt this aspect to be extremely important for both R&D and support

workers, probably due to the frequency of reading these texts.

It seems that HE graduates seem to be equipped with the reading comprehension skills needed for the hi-tech environment. However, it might be wise to consider practicing more varieties of professional texts within HE.

3.2.4.4 Listening skills

As for listening at international seminars and conferences, even though it is a rare occurrence (50% state they have never done this, while the other 50% report doing so between once a week and once a month), it is still considered important by managers and HR, since when it does occur, it is important the employee be able to understand the professional content presented at the conference.

Therefore, perhaps introducing various types of listening activities on professional issues would be a welcome addition to the HE curriculum. As a whole, all aspects of English proficiency seem to be important for IT workers, HR and managers in Israel, not just to understand information (e.g. reading professional documents) but also for communicating internationally (e.g. writing emails, providing phone support).

4. Discussion

As expected, the data from the interviews and questionnaires all point to the critical importance of EL skills in Israeli IT companies, at all professional levels. We will discuss the findings and give recommendations by category before presenting our general conclusions.

From the interview and questionnaire findings, a lack of sufficient EL competency can both prevent candidates from gaining employment, and employees from carrying out their duties and achieving career advancement. Thus, during recruitment, candidates are screened for certain EL competencies, including those that might not be utilized on a regular basis, yet are still seen as critical to conducting business successfully. To fill in some of the EL competency gaps, courses are sometimes offered by the company, though the general assumption is that employees should come pre-equipped with the EL skills required for the job. This shows the importance of providing students with EL skills as much as possible before they enter the workforce, as this might be their only real opportunity to develop their EL skills sufficiently. In addition, employees lacking certain

EL skills could be precluded from promotion opportunities when competing with candidates who have better EL skills. Such considerations demonstrate that EL skills can determine career success for the both short and long terms.

While addressing EL training with the companies, the theme of ICC emerged as central, especially where the lack of ICC can cause expensive misunderstandings. These misunderstandings may be grave and cost the companies not just time and money but also contracts and future alliances. What we found surprising, however, was that ICC was mentioned as a separate, yet related, discipline to EL skills by the HR professionals, despite the inextricable link between language and culture (Fantini & Fellini, 2012). Given this link and the HR perspective, our findings point to the importance of ICC in any language teaching/learning framework. As such, we would make the following recommendations to Israeli HE EFL departments.

4.1 Recommendations

Certain competencies within the 'four skills' and ICC were identified as promoting EL capacity building within the Israeli hi-tech context. We would suggest teaching these skills within the framework of an EAP/ESP curriculum.

Speaking

Concerning speaking, all three categories of speaking (prepared, semi-prepared, and spontaneous speech) were seen as important. Prepared speech includes tasks such as presenting a technical topic at a formal meeting; semi-prepared includes activities such as giving a technical explanation within the framework of a support call; and spontaneous speech includes the ability to hold an extended, in-depth conversation with colleagues at meetings. However, many employees reported that they 'do not feel comfortable speaking in English'. HR viewpoints resonate with this perception, as it was suggested by them that speaking practice begin 'a lot earlier than tertiary level', and continue into HE (HI 2 and 3 interview data). Today, such crucial competencies, except perhaps prepared speech, are rarely addressed at the Israeli tertiary level. It is highly recommended, then, that more institutions include opportunities for spontaneous speech and discussion as part of the curriculum.

Writing

With regard to professional writing, two kinds of categories should be addressed in HE: formal writing and correspondence. Formal writing includes reports, such as a project summary or minutes of meetings, and correspondence includes routine emails, updating colleagues on a process, or providing an answer to a query. Again, within the current EAL context, writing is normally marginalized to providing short answers in response to texts, as opposed to original texts written for a real-world communicative purpose. Writing instruction, especially professional genres, should be included in every ESP course for all Israeli students, especially for future IT workers.

Reading

Even though most EL (EAP) courses in Israeli HE focus on reading comprehension, it is usually academic or quasi-professional in nature, and proficiency is measured according to correctly answering questions based on the texts. However, our findings show that IT professionals must cope with a wide variety of professional and technical texts and react to these texts, whether in writing or by speaking. Also, it was mentioned by our HR participants that employees still have trouble 'reading between the lines', such as reading for the implied messages and understanding culturally-driven expressions. Therefore, the emphasis in HE should be on engaging with discipline-specific professional literature to acquaint students with the style typical of each discipline, the specific vocabulary of the profession, and the conventions practiced in the different fields. Additionally, the types of tasks students are asked to do with texts should move away from answering "25 questions on the text" toward extracting information to be synthesized with other texts in order to formulate personal recommendations. Furthermore, there should be more practice with colloquialisms, common idioms, and expressions.

Listening

Listening skills should be addressed for two categories: prepared and spontaneous speech. Prepared speech includes professional lectures, such as the types common at conferences. Spontaneous speech would include phone conversations and practice understanding a variety of English accents. As it stands today, listening skills do not form part of the ESP curriculum in Israel.

ICC

Israeli hi-tech requires its employees not only to cope with the EL skills identified above but also to adjust the deployment of these skills based on the culture of their interlocutor. ICC as part of the EFL curriculum is currently not addressed on its own within EFL departments, yet from our findings, it should assume a prominent role. As such, we would recommend not only a formal introduction of intercultural parameters (Hall, 1973; Trompenaars & Hampden-Turner, 1993, 1997) that could help raise awareness of ICC, but also emphasize, through activities and discussion, the kind of ICC needed for successful functioning in the business world (Holmes, 2012).

4.2 Concluding remarks

Until now, ESP curricula were devised within EFL departments only, or in exceptional cases in consultation with the deans and lecturers in the field. The contribution of this study is that it ventures beyond the ivory tower of academia and identifies the English communication needs of one of Israel's major economic drivers, hi-tech. In this milieu, we provide a trinocular view of the EL needs of future Israeli HE graduates, as informed by HR officers, managers, and employees. Because each stakeholder sees only one part of the proverbial elephant, it was important to construct a full picture by examining the views of all three.

Israeli hi-tech is highly successful, yet we found that despite HR efforts to ensure that all employees possess a high level of EL skills, in reality, many employees do not have them and manage to avoid some EL related tasks by asking a team-mate or their manager to do it for them. This probably leads to our finding that the managers' overall perception that their employees' lack of EL competencies might not be critical to the company. Yet, employees still know they are considerably unequipped, which could jeopardize future advancement opportunities. Our viewpoint is that HE can provide such capacities by employing an ESP approach so that future IT professionals are prepared for the language tasks ahead of them.

Our findings concern the Israeli hi-tech sector, which comprises some 20% of the Israeli economy (about 4000 companies) and employs approximately 25% of the Israeli workforce (Israel Ministry of Foreign Affairs, n.d.). With the growing emphasis placed by HE institutions in the world on increasing the employability of their graduates (Clokie & Fourie, 2016; Davidovitch et al., 2012;

European Commission, 2010; Jones, 2013; Mikhaylov, 2014; United States Government, 2011), it is time for Israeli HE EFL departments to embrace this conception and start preparing our graduates for the workforce through considering an ESP approach. By building bridges for our students towards the EL competencies required of the growing and evolving hi-tech industry, Israeli HE will play a more prominent role in maintaining and furthering Israel's place in the competitive world economy.[4]

References

Barroso, J. M. (2010). *Communication from the Commission Europe 2020: A strategy for smart, sustainable and inclusive growth*. Brussels.

Beyene, T., Hinds, P. J., & Cramton, C. D. (2009). *Walking Thru Jelly - Language Proficiency, Emotions and Disrupted Collaboration in Global Work. HBS Working Paper*.

Carnevale, A.P., Smith, N., Strohl, J. (2013). Recovery - Job Growth and Education Requirements through 2020, 111. https://doi.org/10.1037/e535092011-001

Clokie, T. L., & Fourie, E. (2016). Graduate Employability and Communication Competence: Are Undergraduates Taught Relevant Skills? *Business and Professional Communication Quarterly*, 1–22. https://doi.org/10.1177/2329490616657635

Davidovitch, N., Sinuany-Stern, Z., & Iram, Y. (2012). The Price of Success : Some Consequences of Increased Access to Higher Education in Israel. *Cross Cultural Communication*, *8*(2), 101–111. https://doi.org/10.3968/j.ccc.1923670020120802.1447

Deutch, Y. (2003). Needs analysis for academic legal English courses in Israel: A model of setting priorities. *Journal of English for Academic Purposes*, *2*(2), 125–146. https://doi.org/10.1016/S1475-1585(03)00013-4

European Commission. (2010). Communication from the Commission EUROPE 2020 A strategy for smart, sustainable and inclusive growth. *Com(2010) 2020*, (3 March, 2010), Commission of the European Communities. https://doi.org/10.1016/j.resconrec.2010.03.010

Fantini, A. E., & Fellini, F. (2012). An essential Component of Intercultural Communicative

[4] We would like to thank Ms. Julia Feuer for her useful comments and revisions of our paper.

Competence. In *The Routledge handbook of language and intercultural communication* (pp. 263–278). Retrieved from https://books.google.com.tw/books?hl=en&lr=&id=aB6pAgAAQBAJ&oi=fnd&pg=PT433&ots=t0gcyK2WCE&sig=6uU6p09ogJ5VzyL5uJ2BxIx6td4&redir_esc=y#v=onepage&q&f=false

Fitch, K., & Desai, R. (2012). Developing global practitioners: Addressing industry expectations of intercultural competence in public relations graduates in Singapore and Perth. *Journal of International Communication*, *18*(1), 63–78.

Ghany, S. Y. A., & Latif, M. M. A. (2012). English language preparation of tourism and hospitality undergraduates in Egypt: Does it meet their future workplace requirements? *Journal of Hospitality, Leisure, Sport and Tourism Education*, *11*(2), 93–100. https://doi.org/10.1016/j.jhlste.2012.05.001

Government of India. (2009). *National Knowledge Commission - Report to the Nation 2006-2009*. Retrieved from http://www.aicte-india.org/downloads/nkc.pdf

Hall, E. T. (1973). *The Silent Language*. Garden City, New York: Doubleday.

Holmes, P. (2012). Business and management education. In J. Jackson (Ed.), *The Routledge handbook of language and intercultural communication* (pp. 464–480). Routledge.

Israel Ministry of Foreign Affairs. (n.d.). ECONOMY: Sectors of the Israeli Economy. Retrieved from http://mfa.gov.il/MFA/AboutIsrael/Economy/Pages/ECONOMY- Sectors of the Economy.aspx

Jones, E. (2013). Internationalization and employability: the role of intercultural experiences in the development of transferable skills. *Public Money & Management*, *33*(2), 95–104. https://doi.org/10.1080/09540962.2013.763416

Mikhaylov, N. S. (2014). International Business Students' Cross-Cultural Competence Development: The Influence of the Educational Environment. *SAGE Open*, *4*, 1–15. https://doi.org/10.1177/2158244014564352

Moslehifar, M. A., Ibrahim, N. A., Ali, M., & Aireen, N. (2012). English Language Oral Communication Needs at the Workplace: Feedback from Human Resource Development (HRD) Trainees. *Procedia - Social and Behavioral Sciences*, *66*, 529–536. https://doi.org/10.1016/j.sbspro.2012.11.297

Orr, T., & John, S. (2001). English Language Education for specific professional needs. *IEEE Transactions on Professional Communication*, *44*(3), 207–211. https://doi.org/10.1007/978-981-287-071-1

Pines, A. M., & Zaidman, N. (2014). Stress and burnout in bicultural teams in hi-tech industry. *British Journal of Management*, *25*(4), 819–832. https://doi.org/10.1111/1467-8551.12056

Spence, P., & Liu, G.-Z. (2013). Engineering English and the high-tech industry: A case study of an English needs analysis of process integration engineers at a semiconductor manufacturing company in Taiwan. *English for Specific Purposes*, *32*(2), 97–109. https://doi.org/10.1016/j.esp.2012.11.003

Symon, M. & Broido, M. (2014). Changing Worlds, Changing Needs: EFL Provision. *Academic Exchange Quarterly.* Vol. 18, Issue 2, pp. 126-131. http://rapidintellect.com/AEQweb/-sum2014.htm

Tempus - European Commission EFA. (n.d.). EFA - English for All. Retrieved from http://tempus-efa.proj.ac.il/moodle/

Tempus ECOSTAR. (n.d.). Tempus ECOSTAR - About Us. Retrieved from https://tempus-ecostar.iucc.ac.il/

The Council for Higher Education - The Planning and Budgeting Committee. (2014). The Higher Education System in Israel – Issues, Characteristics and Unique Aspects.

Trompenaars, A., & Hampden-Turner, C. (1993). *Riding the waves of culture: understanding cultural diversity in business*. London: Nicholas Brealey.

Trompenaars, A., & Hampden-Turner, C. (1997). *Riding the waves of culture: understanding cultural diversity in business*. New York: McGraw-Hill.

United States Government. (2011). Program integrity: Gainful employment-debt measures. *Federal Register: The Daily Journal of the United States Government*, *76*(113), 34386–34539. Retrieved from https://www.federalregister.gov/articles/2011/06/13/2011-13905/program-integrity-gainful-employment-debt-measures

World Bank. (n.d.). Addressing the Youth Employment Crisis Needs Urgent Global Action. Retrieved September 20, 2016, from http://www.worldbank.org/en/news/press-release/2015/10/13/addressing-the-youth-employment-crisis-needs-urgent-global-action

World Economic Forum: Global Agenda Council on Employment. (n.d.). *Matching Skills and Labour Market Needs Building Social Partnerships for Better Skills and Better Jobs*. Davos-Klosters, Switzerland. Retrieved from http://www3.weforum.org/docs/GAC/2014/WEF_GAC_Employment_MatchingSkillsLabourMarket_Report_2014.pdf

Wu, R., & Chin, J. (2010). An investigation into the English language needs of banking and finance professionals in Taiwan. *Proceedings of the 12th Academic Forum on English Language Testing in Asia*, 73–87. Retrieved from https://lttc.com.tw/TLResource/Needs_Analysis_of_Banking_and_Financial_Professionals.pdf

Appendix A: HR questionnaire about finance

Appendix B: General Questionnaire for HR Managers - requested information about their demographics, duties, and the English requirements and/or courses given in their companies.

Appendix C: English for Professional Purposes Questionnaire (for IT managers) - aside from asking questions about their managerial duties, it also asked about how English is used in their companies and its frequency of use.

Appendix D: English for Professional Purposes Questionnaire (for IT workers) - aside from asking questions about their duties, it also asked about how English is used in their companies and its frequency of use.

English for Professional Purposes Questionnaire: Finance (HR Manager)

* Required

About You

1. **What is your name?** *

2. **What is your company's name?** *

3. **What is your phone number?** *

4. **What is your email?** *

About Finance Employees

Please answer these questions in relation to finance employees only.

5. **When hiring employees, how important is it that they can read instructions or manuals?** *

   Examples: reading an update of how to report expenses or how to use a new software package
   Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Very important

6. **When hiring employees, how important is it that they can read project documents?** *

   Example: reading the background and flow of a project
   Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Very important

7. **When hiring employees, how important is it that they can read office documents?** *
   Example: reading about company news or policy updates
   Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Very important

8. **When hiring employees, how important is it that they can read professional texts?** *
   Example: reading a published report or website in your discipline
   Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Very important

9. **When hiring employees, how important is it that they can write routine correspondences?** *
   Example: writing an email requesting or providing information about a project
   Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Very important

10. **When hiring employees, how important is it that they can write "high-stakes" correspondences?** *
    Example: writing to complain/apologise about something that was done incorrectly
    Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Very important

11. **When hiring employees, how important is it that they can write "semi-personal" correspondences?** *
    Example: writing to congratulate, thank, or send condolences
    Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Very important

12. **When hiring employees, how important is it that they can write minutes of meetings?** *
    Example: summarizing the main points of a meeting as well as action items for participants
    Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Very important

13. **When hiring employees, how important is it that they can write reports?** *
Example: summarising/updating on a project, including the project flow
Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Very important

14. **When hiring employees, how important is it that they can write proposals for projects?** *
Example: introducing a project and its benefits to the audience; includes a summary of its flow and required resources
Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Very important

15. **When hiring employees, how important is it that they can write presentation slides?** *
Example: writing bulleted text to accompany a PowerPoint presentation on a new product feature
Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Very important

16. **When hiring employees, how important is it that they can give oral presentations?** *
Example: presenting an aspect of a project, including an opinion about it
Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Very important

17. **When hiring employees, how important is it that they can manage meetings/seminars?** *
Example: opening and closing the meeting, managing its flow, including talking points and time allotted to participants
Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Very important

18. **When hiring employees, how important is it that they can attend meetings/seminars?** *
Example: asking/answering questions from other participants
Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Very important

19. **When hiring employees, how important is it that they can negotiate?** *
Example: negotiating the price or delivery time of a product
Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Very important

20. **When hiring employees, how important is it that they can speak with company visitors?** *
Example: introducing yourself, making small talk, and showing the customer around
Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Very important

21. **When hiring employees, how important is it that they can communicate by phone?** *
Example: finding the right person to speak to, taking messages, and clearing up misunderstandings
Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Very important

22. **When hiring employees, how important is it that they can have informal and social conversations?** *
Example: meeting for after-hours small talk at a bar/restaurant
Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Very important

23. **When hiring employees, how important is it that they can provide support?** *
Example: providing step-by-step instructions/explanation to a customer
Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Very important

24. **When hiring employees, how important is it that they can receive spoken instructions?** *
Example: listening to instructions for a new procedure via a webcast
Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Very important

25. **When hiring employees, how important is it that they can listen at international seminars/conferences?** *

Example: listening to experts in your industry provide updates about new developments
Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Very important

26. **When hiring employees, how important is it that they can use different communication strategies in response to different cultures?** *

Example: giving feedback in an indirect manner instead of a direct manner
Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Very important

27. **When hiring employees, how important is it that they can repair misunderstandings with people from other cultures?** *

Example: apologizing for misunderstandings caused by cross-cultural/language differences
Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Very important

28. **When hiring employees, how important is it that they can follow social conventions of other cultures?** *

Example: using titles/honorifics for different people depending on their function
Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Very important

29. **When hiring employees, how important is it that they can "read between the lines" with people from other cultures?** *

Example: understanding that calling someone “aggressive” might be a compliment in another culture
Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not important	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Very important

THE ASIAN ESP JOURNAL

Understanding ENGAGEMENT resources in constructing voice in research articles in the fields of computer networks and communications and second language writing

Weiyu Zhang, Yin Ling Cheung

National Institute of Education, Nanyang Technological University, Singapore

Bio Data

Weiyu Zhang is a Lecturer at the English Department of Shenzhen Open University. She received her MA in Applied Linguistics from National Institute of Education, Nanyang Technological University. She has presented papers on second-language writing at the American Association for Applied Linguistics Conference and the Symposium of Second Language Writing.

Email: weiyu.zhang@icloud.com

Yin Ling Cheung is an Assistant Professor of English Language and Literature at National Institute of Education, Nanyang Technological University. She is also Head of Graduate Research and the Academic Development Centre. Yin Ling's area of research and teaching is second language writing. She has published in *System and RELC Journal.*

Email: yinling.cheung@nie.edu.sg

Abstract

This study explores voice from the perspective of interpersonal meaning in the fields of computer networks and communications (CNC) and second language writing (SLW).

The analysis is based on three corpuses of literature reviews (LR): 68 CNC LRs, 68 quantitative LRs, and 68 qualitative LRs. Using the Appraisal Theory, the study investigates how research

writers use ENGAGEMENT resources to position themselves for propositions being referenced in their writing while also taking 'putative readers' into consideration. Findings of the analysis suggest that CNC writers predominantly use the ATTRIBUTE + DENY/COUNTER resources to introduce related literature and point out the research gaps. Further difference between the SLW and CNC disciplines lies in the use of ENDORSE, CONCUR and PRONOUNCE resources, with CNC writers making significantly less use of these resources than the SLW writers. The findings of this study contribute to the current knowledge of the construction of authorial voice and provide a practical reference to novice SLW and CNC writers, in particular English as an Additional Language writers, who wish to publish their research work in internationally reputable journals to negotiate their position as legitimate members of the discipline.

Keywords: voice, second language writing, engagement resources, Appraisal Theory, journal articles

Introduction

Voice is one of the important yet complex concepts that have attracted much research and scholarly interest in the field of applied linguistics today (Guinda & Hyland, 2012). Over the years, the concept of voice has been treated from different angles in the research of writing, for example, as style (Elbow, 1994), western individualism (Ramanathan & Atkinson, 1999), self-representation (Ivanič & Camps, 2001), evaluation (Thompson & Hunston, 2000), appraisal (Martin & White, 2005), as well as stance and engagement (Hyland, 2008). The importance of voice lies in that all writing contains voice as it constitutes an integral part of self-representation and elaborates how writers position themselves in relation to the community (Hyland, 2008). In academic writing, for example, crafting a convincing argument necessarily concerns the appropriateness of one's voice, which involves taking a position on issues relevant to the discipline and following disciplinary and genre conventions in expressing viewpoints (Hyland, 2012). In this sense, voice negotiates social relations and thus falls into the realm of interpersonal meaning.

The understanding of voice in academic writing within the domain of interpersonal meaning has been a key area of research in recent years (Cheung & Low, in press). Research in this line seeks to identify how voice is realized through linguistic and discursive resources to effectively achieve goals in writing. Chang and Schleppegrell (2011), for example, explored voice in the introduction

section of research articles (RAs). Working within the Systemic Functional Linguistics (SFL) framework, the study discovered that the pattern of certain resources identified in the texts can be explicitly linked to the rhetorical purposes of academic writing (Swales, 1990). Other comparative studies on voice have found differences in the use of resources by different groups of writers divided by discipline (e.g., Hyland, 2005, 2008; McGrath & Kuteeva, 2012), research paradigm (e.g., Kwan et al., 2012), and language background (e.g., Gil-Salom & Soler-Monreal, 2014). It is argued that these differences could be attributed to the diverse expectations and conventions in shaping academic argument by different discourse communities. Overall, these studies have produced robust knowledge on the linguistic and discursive realizations of voice, which could serve as practical reference for novice research writers, making them aware of the resources available to present their argument and situate their research within the larger discursive context. This awareness would be particularly helpful for researchers from English as Additional Language (EAL) context, who are pressured by the increasing demand to publish in prestigious English-medium journals (Flowerdew & Wang, 2016) but constrained by their limited repertoire of linguistic and discursive resources (Cho, 2004; Belcher, 2007). Following research of this line, the current study sets out to examine the realization of voice by expert research writers in RAs published in internationally prestigious peer-reviewed English-medium journals. As previous research has provided evidence on linguistic and discursive variations across disciplines and even among sub-disciplines (e.g., Holmes, 1997; Ozturk, 2007), the current study narrowed down its focus on two sub-disciplines of computer networks and communications (CNC) and second language writing (SLW) under the larger discipline area of computer science and applied linguistics. As computer science and applied linguistics falls into the traditional hard and soft end of discipline lines respectively, differences in voice are assumed based on existing findings (e.g., Hyland, 1999a; 1999b; 2008). Further, to explore possible differences within the sub-discipline of SLW where two distinct research paradigms (qualitative vs. quantitative) prevail, the writers of SLW will not be viewed as one intact group, but two groups divided by the two research paradigms.

The current study is also motivated by the fact that the literature review (LR) is among the most challenging section to write in RAs (Uzuner, 2008), where the research niche is carved out through critical discussion and evaluation of existing literature in the field. To inform the writing of LRs, many research efforts have been devoted to explore linguistic and discursive features in LRs from various perspectives (e.g., Gil-Salom & Soler-Monreal, 2014; Kwan et al., 2012). Adding to this

body of research, the current study seeks to understand voice in LRs from an SFL standpoint, more specifically, through the ENGAGEMENT framework (Martin & White, 2005). The ENGAGEMENT framework is well-established and has been proved informative to study the realization of voice in different genres (e.g., White, 2012; Miller et al., 2014; Chang & Schleppegrell, 2011). However, the application of this framework in existing research of academic writings were mostly on student argumentations (e.g., Lancaster, 2014; Miller et al., 2014; Wu, 2007) rather than on research writings, with the exception of Change and Schleppegrell (2011). To the best of our knowledge, no study so far has utilized this framework to study LRs in RAs. The current study attempts to fill this gap in the hope of providing useful insights into the writing of LRs and also extending the application of the Engagement framework.

The following research questions have guided the current study:

1. Is there any common pattern in the realization of voice through ENGAGEMENT resources in the three corpuses (i.e., second language writing – qualitative, second language writing – quantitative, and computer networks and communications)? If so, how?
2. Is there any difference in the realization of voice through ENGAGEMENT resources among the three corpuses? If so, how?

The ENGAGEMENT Framework

The ENGAGEMENT framework, together with ATTITUDE and GRADUATION, forms a part of the larger system of APPRAISAL (Martin & White, 2005). ENGAGEMENT explores the realization of interpersonal meaning in texts through the writers' use of linguistic resources to position themselves in relation to propositions being referenced and with respect to their putative readers. Interpersonal meaning is realized through the interplay of MONOGLOSS and HETEROGLOSS voices. Since the current study sets out to examine how research writers carve out their research niche in the LR section through critical evaluation of existing literature in the field, the MONOGLOSS voice which does not explicitly reference alternative propositions were not considered.

The focus of current investigation is on the construal of HETEROGLOSS which could be

categorized as either CONTRACT or EXPAND. Their difference that the expand category "actively make allowances for dialogically alternative positions" while the CONTRACT "challenge(s), fend(s) off or restrict(s) the scope of such alternatives" (Martin & White, 2005, p. 102). The CONTRACT category includes DISCLAIM and PROCLAIM options, whereas the EXPAND comprises ENTERTAIN and ATTRIBUTE resources.

Under the CONTRACT category, the DISCLAIM option contains linguistic resources by which "textual voice positions itself as at odds with, or rejecting some contrary positions" (Martin & White, 2005, p. 97). It encompasses DENY and COUNTER resources. The DENY resource includes negations (e.g., "no," "don't," and "never"), which acknowledge alternative propositions but only to reject them and exclude them from the current dialogue. The COUNTER resource (e.g., "although," "however," and "even") has a counter-expectation connotation and represents a proposition as supplanting another one that normally would have been expected in the situation.

The PROCLAIM category contains resources by which "textual voice sets itself against, suppress or rules out alternative positions by representing the proposition as highly warrantable" (Martin & White, 2005, p. 98). It consists of three resources of CONCUR, PRONOUNCE and ENDORSE. The CONCUR resource presents the authorial voice as agreeing with or sharing some consensual knowledge with the projected readers (e.g., "certainly," "of course," and "not surprisingly"). The PRONOUNCE resource involves authorial emphasis on the correctness of the proposition being advanced (e.g., "indeed," "the truth is," and "I therefore propose"). The ENDORSE resource affirms the proposition being sourced to external sources (e.g., "show," "demonstrate," and "find").

Under the EXPAND category, the ENTERTAIN resource (e.g., "may," "could," "it seems," and "it's possible") withholds writers' full commitment to the proposition being referenced. The ATTRIBUTE resource (e.g., "say," "report," "argue," and "according to") associates the proposition with external sources without explicitly conveying the writer's stance.

As the ENGAGEMENT framework is well-established and has been utilized in many studies to examine academic writing, the present study adopts the existing definitions and taxonomy with only minor adaptations: (1) A new JUSTIFY resource has been added to the framework, which is not listed in Martin and White (2005), but has been suggested in a later study by White (2012). The JUSTIFY resource is used by the writer to justify, substantiate, or argue for the proposition

being advanced. The decision to include JUSTIFY was based on our observation that writers in our corpus employ quite a few such resources to construct an argument and persuade the putative readers who may hold a contrasting viewpoint. As White (2012) has classified JUSTIFY resource in the CONTRACT: PROCLAIM category, the current study follows this classification. (2) The current study does not make further distinction under the CONCUR and ATTRIBUTE category due to the rare occurrence of some sub-categories (See Figure 1 for an illustration of the hierarchical relationship among the categories).

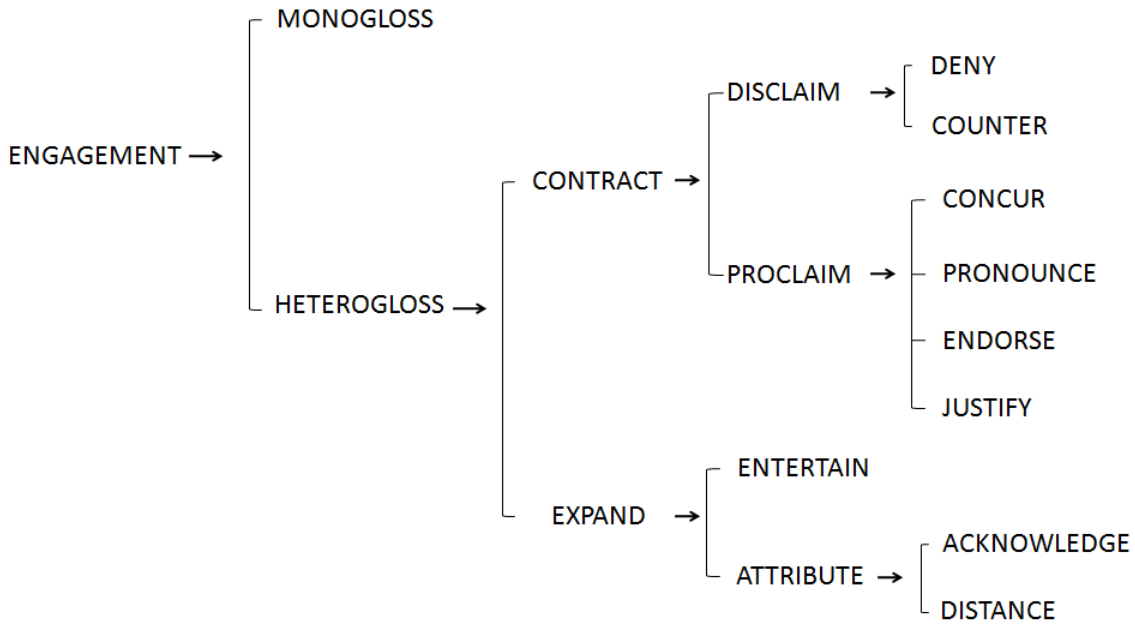

Figure 1: The ENGAGEMENT Framework

Methodology

Corpus

To answer the research questions, we constructed three corpuses of LRs, which contains 68 CNC LRs, 68 qualitative SLW LRs, and 68 quantitative SLW LRs. All the LRs were extracted from empirical RAs in internationally reputable peer-reviewed English-medium journals published during the period of 2011-2015. Compared to research of a similar kind, the current study employed a much larger writing sample from each sub-discipline, so that a higher-confidence

quantitative generalization on disciplinary writing practices could be derived. However, the narrow focus only indicates that the empirical findings may not be immediately generalizable to other sub-disciplines in applied linguistics or computer science.

The LRs in the SLW corpuses were drawn from six SSCI journals, namely *Journal of Second Language Writing (JSLW)*, *English for Specific Purposes (ESP)*, *Language Learning and Technology (LLT)*, *Journal of English for Academic Purposes (JEAP)*, *Computer Assisted Language Learning (CALL),* and *System*. The main criterion for the selection is the journals' impact factor based on the Journal Citation Reports® on the InCites™ website provided by Thomson Reuters. However, some journals (e.g., *Applied Linguistics*, *TESOL Quarterly*) were excluded in the list due to the small number (less than five) of empirical RAs published on topics of SLW in the five-year period. All the empirical RAs in the aforementioned six journals were carefully scrutinized, and those on the topic of SLW were selected. The RAs were then classified into qualitative, quantitative, and mixed-method research following the characterizations by Creswell (2009). The mixed-method RAs were excluded as the current study intends to uncover possible difference in the realization of voice between writers from the two contrasting research paradigm (i.e., qualitative and quantitative). There were 100 qualitative and 68 quantitative RAs identified in the journals. All the quantitative RAs were kept to form one of the corpuses. To ensure that the sample sizes of the corpuses were the same, 68 qualitative RAs from the original pool of 100 were selected randomly using computer-generated random numbers. Following similar procedures, 68 LRs that form the CNC corpus were randomly drawn from three journals based on Scimago Journal and Country Rank (2015), namely, *IEEE Transactions on Computers*, *IEEE-ACM Transactions on Networking* and *IEEE Transactions on Mobile Computing*.

The LR sections of all the selected RAs were extracted. The LR section, or typically entitled as "related work" in CNC papers, is usually located between the introduction and methodology sections; or at the end of some CNC papers. It may not always be explicitly titled as "literature review" or "related work" and it may sometimes be integrated into or form a sub-section of the introduction (Dörnyei, 2007). In these cases, the researchers manually identified the LRs drawing on Bitchener's (2010) three optional moves in writing LRs. The identified LRs were then converted into plain text format for corpus analysis. Table 1 presents the descriptive statistics of the corpus.

Table 1: Descriptive Statistics of the Corpus

	Qualitative SLW	Quantitative SLW	CNC
No. of LRs	68	68	68
Total no. of words	80867	106181	39806
Mean no. of words	1189	1561	585

Data Coding and Analysis

The coding was done by the UAM Corpus Tool (O'Donnell, 2011) at two levels. At the first level of text annotation, each LR was assigned a label according to article sources (i.e., CNC, qualitative, quantitative). At the second level of segment annotation, the identified ENGAGEMENT resources in LRs were selected and assigned a label (e.g., ATTRIBUTE) according to resource categories.

The coding of ENGAGEMENT requires a good understanding of the framework and careful consideration of contextual factors to interpret the meaning and function of the resources before assigning them appropriate labels. The interpretation, hence the coding, could be somewhat subjective. To mitigate this unavoidable subjectivity, inter- and intra-coder reliability measures have been adopted to make sure that the data coding is valid and reliable. To achieve inter-coder reliability, the first author of this paper served as the first coder, and a doctoral student who is familiar with the ENGAGEMENT framework was invited to be the second coder. The implementation of inter-coder reliability measure went through three phases. In phase one, the first author of this paper gave a training session to standardize the two coders' understanding of the coding scheme. In phase two, the two coders worked separately to code some portion of the data and then compare the codings to resolve differences and jointly work out solutions to difficult cases. In phase three, the two coders independently coded 3% of randomly selected data from the corpus. The inter-coder agreement assessed by Cohen's Kappa was at .879, which indicates satisfactory inter-rater reliability. The first coder then coded all the remaining data. To ensure intra-coder reliability, the first coder coded all the data twice in two different sittings. And after the second coding, the first coder carefully went through each category of coded resources to ensure consistency.

Both quantitative and qualitative analysis was conducted on the coded instances of ENGAGEMENT resources. For quantitative analysis, raw frequencies of the coded resources were normalized per 1000 words in order to control the effect that different lengths of the LRs might have on the results. Then, a series of one-way ANOVAs and post hoc texts were performed using IBM SPSS Statistics 23. The alpha value was set at .05 (2-tailed) for all tests. In cases where significant differences were detected, eta squared was applied to calculate the effect size. For qualitative analysis, each coded instances was closely examined in its context to exam how ENGAGEMENT resources are employed to construct authorial voice and also to identify possible qualitative differences.

Findings

Table 2 summarizes the descriptive statistics of ENGAGEMENT resources identified in the corpus. The results of the one-way ANOVAs and qualitative analysis will be presented in the following sections according to resource categories.

Table 2: Descriptive Statistics of ENGAGEMENT Resources in LRs (alpha = .05)

	Qualitative SLW		**Quantitative SLW**		**CNC**	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**
CONTRACT	12.66	4.49	14.79	5.14	14.62	7.34
DISCLAIM	6.55	2.92	7.93	3.80	10.53	6.58
- DENY	1.96	1.46	2.35	1.63	3.82	3.36
- COUNTER	4.58	2.11	5.59	2.53	6.71	4.45
PROCLAIM	6.11	2.81	6.85	2.27	4.09	2.75
- CONCUR	.16	.34	.18	.30	.01	.09
-PRONOUNCE	.14	.30	.22	.44	.07	.27
- ENDORSE	2.97	2.18	4.13	2.16	1.27	1.68

- JUSTIFY	2.83	1.89	2.32	1.37	2.75	2.10
EXPAND	21.38	4.58	20.86	4.20	25.72	5.80
ENTERTAIN	4.79	2.79	4.93	2.81	5.69	4.09
ATTRIBUTE	16.59	4.40	15.92	3.57	20.03	6.49

Note. Mean frequencies were normalized per 1,000 words.

ATTRIBUTE

ATTRIBUTE is the most frequently employed resource by all three groups of writers to introduce existing knowledge in the field. The result of the one-way ANOVA, $F(2, 201) = 13.355$, $p < .05$, suggests significant difference in the use of ATTRIBUTE. The value of eta squared = .12 indicates that the effect size is moderate. According to the post hoc test, CNC writers employ significantly more ATTRIBUTE, whereas the SLW groups do not differ from each other. Qualitative difference is also evident. While SLW writers more often use ATTRIBUTE to introduce verbal arguments or interpretations of certain issue (see Example 1), CNC writers usually employed the resource to introduce real-world activities involved in addressing certain research issues (see Example 2).

(1) The authors also **argued** that [ATTRIBUTE] students' lack of summarising revealed a failure to synthesise ideas from across their source materials; this in turn, was indicative of students' inability to understand key ideas in depth. (QUAL49)

(2) In [17], authors **propose** [ATTRIBUTE] an algorithm to allocate server bandwidth that can predict the minimum server bandwidth requested for each channel, based on historical information. **However** [COUNTER], this work focuses only on live streaming systems. (CNC68)

Despite the differences, common patterns still exist in the use of ATTRIBUTE to construct voice among all groups of writers. For example, it allows writers to source a proposition to external sources without explicitly indicating where the authorial voice stands (Martin & White, 2005). So writers could avoid clarifying their stance towards certain issues, especially controversial ones. In Example 3, the writers present diverse scholarly interpretations of the term "learning engagement."

No clear clue, at least at the semantic level, for readers to judge which of these interpretations the writers align with. In so doing, the writer conveys a self-representation as an "informational fair trader" (Martin & White, 2005, p. 115) who merely distributes knowledge of the field. However, it should be noted that, in identifying instances of ATTRIBUTE, the ENGAGEMENT framework concerns only with the semantics of the formulation (Martin & White, 2005). This means that there may be clues in the global context that signal the writer's stance. In Example 2, while the ATTRIBUTE resource alone does not convey any stance on the algorithm proposed, the COUNTER resource followed makes a clear authorial evaluation on the limitation of its focus.

(3) … however, learner engagement is open to various interpretations and encompasses numerous sub-constructs, such as the depth of processing (Qi & Lapkin, 2001; Sachs & Polio, 2007; Storch & Wigglesworth, 2010) [ATTRIBUTE], language analysis and cognitive comparison (Sheen, 2010) [ATTRIBUTE], awareness of monitoring and editing (Ferris et al., 2013) [ATTRIBUTE], learners' willingness and commitment to "reason[ing] through their errors" (Evans, Hartshorn, McCollum, & Wolfersberger, 2010, p. 453) [ATTRIBUTE], revision operations (Ferris, 2006) [ATTRIBUTE], as well as learning strategies enhancing memorization of target forms (Hyland, 2003) [ATTRIBUTE]. (QUAL03)

It's also evident in all three corpuses that research writers sometimes classify and present existing research as related groups according to the research context, finding, and methodology (see Example 4). This kind of classification can only be made based on a solid understanding of the research literature. Therefore, such use of ATTRIBUTE embodies writers' efforts to negotiate their status as discipline insider so that their arguments would sound more convincing. Moreover, a key function of ATTRIBUTE in academic writing is to acknowledge and give credit to the texts being referenced. Without proper source attribution, the writers could risk giving the impression of plagiarism.

(4) From the point of view of the methods employed, a number of localization techniques rely on Extended Kalmanfilters **[16], [17]** [ATTRIBUTE], Monte Carlo methods **[18]**, **[19]**[ATTRIBUTE], including nonparametric belief

propagation **[20]** [ATTRIBUTE], and on the knowledge of the connectivity between the nodes. (CNC24)

ENTERTAIN

The result of the one-way ANOVA, $F(2, 201) = 1.445$, $P > .05$, suggests no significant difference in the use ENTERTAIN. The use of ENTERTAIN could be understood as writers' assessment of the likelihood (Martin &White, 2005), or their lack of commitment to the truth-value or factual status of the proposition (Palmer, 2001). As in Example 5, the writers note that the algorithm reviewed in the pretext may not be able to distinguish multiple holes close to each other. However, no evidence is furnished to support this. So the ENTERTAIN resource "it is possible" acknowledges the lack of evidence, hence the tentative wording. The use of ENTERTAIN could also signal writers' anticipation that the proposition may be potentially problematic to some readers and thus provide the possibility of solidarity with readers holding alternative views (Martin & White, 2005). In Example 6, which is the topic sentence of the paragraph, the writer intends to put forward the argument that "the students' lack of exposure is a factor influencing this difficulty" by presenting supporting evidence in the post-text. The ENTERTAIN resource "may" indicates that the writer anticipates possible disagreement of some readers but still hopes to include them in the current dialogue in an attempt to persuade them.

(5) **However** [COUNTER], **it is possible** [ENTERTAIN] that some cycle found by their algorithm contains multiple holes next to each other. (CNC49)
(6) A factor influencing this difficulty **may** [ENTERTAIN] be students' relative lack of exposure to a range of stance resources. (QUAL36)
(7) Taken together, these findings **appear to** [ENTERTAIN] lend support to the view that the reading-to-write process has a bearing on source use in writing. (QUAL50)

The ENTERTAIN resource also include some appearance- or evidence-based wordings (see Example 7) such as "seem", "suggest", "appear to", which present the proposition as being derived from a subjective process of deduction or surmise (Martin & White, 2005). The subjectivity involved in this process implies that there is likely to be other interpretations. In this particular case, this proposition is followed by a COUNTER resource "however" which introduces

contradicting evidence. While such wordings have been occasionally identified in SLW papers, they are hardly seen in CNC papers.

DENY

The result of the one-way ANOVA, $F(2, 201) = 12.13$, $P < .05$, suggests significant difference in the use of DENY. The value of eta squared = .01 indicates that the effect size is small. The post hoc tests (alpha = .05) showed that CS writers employ significantly more DENY resources, whereas the SLW groups do not differ from each other.

The DENY resource identified in the corpus include negations by which writers rule out certain proposition that is somehow contradictory to the one they intend to advance. In Example 8, the writer directly rejects the proposition "teacher transmission of genre knowledge leads to student acquisition and application of genre knowledge". The writer then goes on to argue that besides teacher transmission of genre knowledge, metacognitive training is also needed for learners to apply genre knowledge to academic writing. The use of DENY enables the writer to acknowledge the alternative position, and presents the authorial voice as responding to the alternative and those readers who hold up to it.

(8) It should be noted that teacher transmission of genre knowledge does **not** [DENY] necessarily leads students to the acquisition and application of genre knowledge. (QUAL66)

The DENY resource is found deployed by writers from both sub-disciplines to convey a negative evaluation of previous research. In Example 9, the writers highlight two problems of the mechanism proposed in [32] through the double instances of DENY and they mention explicitly later in the "contribution" section that their own framework handles these problems. Such "ATTRIBUTE+ DENY" pair is very straightforward and efficient in pointing out research gap so that a niche can be established for one's own study. This pattern is more frequently found in the CNC corpus than in the SLW ones.

(9) **Although** [COUNTER] a mechanism is proposed in **[32]** [ATTRIBUTE] to reason about contexts, it does **not** [DENY] provide well-defined context-aware data fusion models **nor** [DENY] does it address the challenges associated with context

ambiguity and situation prediction. (CNC30)

COUNTER

The result of the one-way ANOVA, $F(2, 201)=7.54, p < .05$, suggests significant difference in the use of COUNTER. The value of eta squared = .07 indicates that the effect size is moderate. The results of post hoc tests (alpha = .05) showed that CS writers employ significantly more COUNTER resources than qualitative writers, but no difference exists between CS and quantitative SLW writers.

The use of COUNTER enables a counter-expectation connotation and conveys the authorial voice as "surprised" by the exceptional case (Martin & White, 2005). Similar to DENY, it is also frequently employed by all three groups to identify research gap. In Example 10, evidence of possible benefits of prewriting is presented in the pre-text. Given the benefits, readers would expect prewriting to attract much scholarly attention. However, it is actually most ignored and thus a knowledge gap. In Example 11, the use of COUNTER allows the writers to point out that HAIR (introduced via ATTRIBUTE) is not the optimal protocol as its advantage (i.e., reduces energy consumption) may lead readers to expect. The COUNTER resource aligns readers, since it presents the authorial voice as being equally surprised as readers and sharing their sentiment. It is also indicative of the gap between expectation and reality, which allows room for the writers' study to bridge it. This "ATTRIBUTE + COUNTER", like the "ATTRIBUTE + DENY" pair is very efficient in pointing out the research gap and is more frequently identified in the CNC rather than the SLW papers.

(10) **However** [COUNTER], the prewriting stage is usually the most ignored part in the writing process. (QUAN36)

(11) **In [24], Jia et al. presented** [ATTRIBUTE] HAIR (Hole Avoiding In advance Routing) protocol to bypass holes in advance.…Taking advantage of earlier knowledge about hole positions, HAIR achieves shorter routing paths, and thus reduces energy consumption. **However** [COUNTER] it suffers from a serious drawback: great energy depletion of nodes along the detour paths. (CNC14)

The DENY and COUNTER resources often operate in conjunction (see Example 9 and 12).

Sometimes, as in Example 12, the proposition being denied is directly contradictory with the expectation normally assumed in its place (Martin & White, 2005). In Example 12, as the focus of the study is primarily on the U.S. context, the writers anticipate that some readers may assume that the subject writing courses will demonstrate current developments of U.S. composition classes only, and that the study's results may not be applicable to other contexts. However, notwithstanding this assumption, the same kind of courses is often available in many other countries besides the U.S. The writers recognize this possible assumption but argue, through the use of ATTRIBUTE, that the results of the study maybe of reference value in other similar contexts as well.

(12) **While** [COUNTER] our focus is primarily on examining the U.S. composition context, this is **not** purely a U.S. development since institutions in various countries have begun offering these kinds of courses (Jeannet & Wright, 2010; Johns, 2003; Liu & You, 2008; Marshall & Williams, 2010) [ATTRIBUTE]. (QUAN53)

All three groups of writers also incorporate COUNTER to present contrasting propositions, such as different applications of theory, research findings, methodologies, and definitions of construct. In Example 13, where the writer reviews the three genre traditions, the use of COUNTER merely indicates the differences in their theoretical bases.

(13) Australian genre studies are based on systemic functional linguistics taking its roots from Hallidayan functional linguistics (Halliday, 1994) and sociocultural theories of learning (Vygotsky, 1978), **whereas** [COUNTER] the New Rhetoric view of genre draws on post-modern social and literary theories, especially Bakhtin's notion of dialogism. English for Specific Purposes (ESP) genre studies, **on the other hand** [COUNTER], are largely based on Swales' (1990) discoursal work on academic and research English demystifying the use of English in academic contexts. (QUAL56)

CONCUR

The CONCUR resource is rarely identified in all three corpuses. The result of the one-way ANOVA, $F(2, 201) = 8.51$, $P < .05$, suggests significant difference. The value of eta squared = .07

indicates that the effect size is moderate. The results of post hoc tests (alpha = .05) showed that CS writers employ significantly less CONCUR resources, whereas the SLW groups do not differ from each other.

The use of CONCUR presents the proposition being advanced as shared knowledge in the current context of communication, it therefore aligns readers to the proposition and entails an effect of excluding dialogistic alternatives (Martin & White, 2005). However, in cases where CONCUR are used, writers usually do not assume shared ground with readers without providing solid evidence. In Example 14, the writers make a claim concerning the focus of many comparative corpus studies of NS/NNS essays. In advancing the claim, the writers have reviewed a number of related studies for evidence in the pretext. Thus, the claim was derived from a process of persuasion, and the use of CONCUR to some extent indicates the writers' confidence that the readers will be convinced by these confidence.

(14) **Clearly** [CONCUR], many corpus-based comparative studies on NS/NNS essays have focused more on the distributions of lexico-grammatical features than on patterns of linguistic co-occurrence across these texts. (QUAN18)

The CONCUR resource is sometimes followed by COUNTER (see Example 15). The writer presents the value of "such resources" as shared belief with readers but only to step back at a later point and suggests that "such resources" alone are not enough. The joint use of the two resources reflects the writer's presumption that some readers may not agree on the proposition proposed at the later point. The writer acknowledges the first proposition to be understandable in order to build solidarity with these readers before arguing for what the readers may be skeptical of.

(15) Such resources are **clearly** [CONCUR] valuable for both novice L2 writing teachers and L2 writing teacher educators, **yet** [COUNTER] there is still a need for empirical research examining what L2 writing teachers know and believe about teaching L2 writing and crucially how they acquire such knowledge. (QUAL02)

PRONOUNCE

The PRONOUNCE resource is also rarely identified in all three corpuses. The result of the one-

way ANOVA, $F(2, 201) = 3.354$, $p < .05$, suggests significant difference. The value of eta squared = .03 indicates that the effect size is small. The results of post hoc tests (alpha = .05) showed CS writers employ significantly less PRONOUNCE resources, whereas the SLW groups do not differ from each other.

With the use of PRONOUNCE, writers explicitly interpolates self into the text to show a high level of investment in the proposition. This high level of investment is supported through the subsequent use of ATTRIBUTE to acknowledge related sources that can serve as evidence for the proposition, as in Example 16.

(16) **Indeed** [PRONOUNCE], Chinese EFL scholars have commented on the importance of collective lesson planning in both universities **(e.g., Ma, Wang, & Gao, 2007; Wang, 2010; Zhou, Zao, &Wang, 2008)** [ATTRIBUTE] and high schools **(e.g., Cao, 2009; Li, 2005; Liang, 2010)** [ATTRIBUTE]. (QUAL62)

The PRONOUNCE resource is employed in LRs to point out critical issues concerning the methodology or focus of the study. In Example 17, the inappropriateness of most tools for elementary students is highlighted because this group of students is the target population studied by the writer. The particular methodological problem is pointed out so that possible solutions can be offered in the writer's own study.

(17) **In fact** [PRONOUNCE], most of the tools used in the above-mentioned studies were not particularly designed for elementary-school students' writing activities. (QUAN36)

ENDORSE

The result of the one-way ANOVA, $F(2, 201) = 34.479$, $p < .05$, suggests significant difference in the use of ENDORSE. The value of eta squared = .26 indicates that the effect size is large. The results of post hoc tests (alpha = .05) showed that the three groups of writers significantly differ from each other in the use of ENDORSE with the quantitative SLW writers utilized the resource most frequently, followed by qualitative SLW and CNC writers respectively. Similar to ATTRIBUTE, the use of ENDORSE is to introduce existing knowledge of the field, especially

findings of previous studies. However, while the use of ATTRIBUTE signals no authorial stance towards the referenced proposition, the use of ENDORSE conveys an authorial voice that construes the proposition as valid (Martin & White, 2005).

(18) **A number of studies have shown** [ENDORSE] that this is effective in developing learners' explicit knowledge. (QUAN22)

(19) **Montgomery and Baker (2007) found** [ENDORSE] that students' perceptions of the quantities of micro and macro written CF received were consistent with their ESL writing teachers' self- assessment. (QUAL63)

(20) **The work in [26] has demonstrated** [ENDORSE] the possibility to design on-chip power converters integrated with 64-tile network-on-chip in 3D. (CNC10)

JUSTIFY

The result of the one-way ANOVA, $F(2, 201) = 1.533$, $p > .05$, suggests no significant difference in the use of JUSTIFY in all three corpuses.

The JUSTIFY resource is mainly employed to achieve the following purposes. First, it offers argumentative support for the current proposition, as in Example 21, where an evaluation was performed on one study and followed by a JUSTIFY resource "because" to provide a ground for the writer's evaluation. Second, it bases the current proposition on previously presented evidence, as in Example 22, where the connective "thus" indicates that the following proposition that "L2 writers should be given instruction…" is derived from literature reviewed in the above rather than the author's own assertion. Third, it announces and justifies the aim or focus of the current study (see Example 24), which serves a very important purpose in writing LRs.

(21) The scope of this study was limited, **however** [COUNTER], **because** [JUSTIFY] students' selections were made only from the resources that were made available to them by their course lecturers and tutors and did not extend to materials that they might have selected independently. (QUAL49)

(22) **Thus** [JUSTIFY], rather than simply spending more time writing in the classroom, L2 writers need to be given instruction that targets the most efficient methods and strategies for writing (QUAN38).

(23) Our work, **hence** [JUSTIFY], focuses on achieving energy efficiency using VM placement, while exploiting MapReduce capabilities for greater optimization. (CNC12)

Discussion

This section discusses the findings in answering the two research questions posed for the current study.

Common patterns of voice

First, both SLW writers and CNC writers employed ATTRIBUTE most frequently in their LRs. This is consistent with the observation by Chang and Schleppegrell (2011), who found a high proportion of ATTRIBUTE resources used by writers to review existing research in the field and relate them to the current study. Through this process of reviewing various perspectives, limitations of existing work will be identified so that a research niche can be established. The high frequency of ATTRIBUTE could be linked to the purpose of writing LRs. It should be noted that, the finding of Chang and Schleppegrell (2011) was based on educational research papers, which falls on the soft end of discipline line. Our study, therefore, provides evidence that the frequent use of ATTRIBUTE could be extended to hard discipline such as computer science.

Second, both SLW writers and CNC writers employ CONTRACT resources in presenting research gap, methodological justification, and focus of their own study. This finding echoes previous observations. For example, PROCLAIM and DISCLAIM, both belong to the CONTRACT category, were used to introduce research gap and focus of study (Chang and Schleppegrell, 2011). Moreover, negations and adversatives (e.g., "however" and "even though"), which are essentially DENY and COUNTER resources under the CONTRACT category, were used in LRs to point out limitations of existing research and justify one's own study (e.g., Gil-Salmon and Soler-Monreal, 2014; Kwan et al., 2012). In research articles, matters such as the research gap, methodological justification, and focus of study are crucial because they constituted the ground on which researchers build their main arguments or even the entire study. As a result, they need to discount alternative interpretations of these matters and close the dialogic space so that they can establish the validity and significance of their own work. The CONTRACT resources are most effective to

achieve these goals.

Third, CONCUR and PRONOUNCE resources are infrequently identified in SLW and CNC corpuses. Since the CONCUR resource indicates writers' assumption of shared knowledge with readers (Martin & White, 2005), the infrequent use of it implies that these research writers do not make much efforts in addressing commonsensical issues. A plausible explanation could be that research writers need to construct an argument or a niche for their own study in the LR section (Bitchener, 2010), which is more likely to be based on discrepancy of disciplinary knowledge or unsettled dispute among fellow researchers, rather than what is already known and accepted as authenticated knowledge. Even in cases where CONCUR is used, they usually serve as conclusive statements based on existing evidence. This could also explain the infrequency of PRONOUNCE, which involves authorial emphases or a strong commitment to the proposition being referenced (Martin & White, 2005). However, discrepancy and dispute exist due to lack of evidence so there are fewer unequivocal bases for these writers to make strong commitments.

To sum up, the common patterns of voice identified in SLW and CNC corpuses can all be linked to the niche-carving goal of LRs in academic discourse. The findings support the view that discourse communities do develop their own conventions of writing practices (Swales, 1990). However, the fields of SLW and CNC are further separated by sub-disciplines and research paradigms, differences also exist due to their distinct knowledge structure, epistemological beliefs and research practices.

Differences of voice between and within sub-disciplines

One finding of variation is that CNC writers' voice construction is more standardized than their SLW counterparts. CNC writers predominantly use the "ATTRIBUTE+DENY/COUNTER" resources to first introduce related literature and then point out the research gaps (see Examples 9 and 11) so that a niche can be established. Therefore, significantly more ATTRIBUTE, DENY and COUNTER resources are identified in the CNC corpus than in the SLW ones. Although the "ATTRIBUTE+DENY/COUNTER" resources are also evident in the SLW papers, they are not as prominent. In the SLW papers, writers spend a lot of space elaborating on the research context, theoretical basis and research procedures. Hence, the average length of the SLW papers is much longer than the CNC papers (see Table 1). One plausible explanation of this difference is that

knowledge in hard discipline is tightly structured and cumulative following predictable paths, which allows standardized reporting style as writers can presuppose their readers to possess certain amount of background knowledge (Bazerman, 1988; Hyland, 1999a). Knowledge in soft discipline, however, is discursive and subject to the influence of diverse social, cultural, and historical factors (Hyland, 2008). Thus, writers in soft discipline cannot make similar presupposition about their readers and need to elaborate on the research context in order to argue for the relevance of their own study against alternative interpretations (Hyland, 1999b, 2008).

The other finding of variation concerns the use of ATTRIBUTE and ENTERTAIN. CNC writers often employ ATTRIBUTE to refer to real-world activities such as research methodology and procedures (see Example 2), rather than subjective arguments or interpretations as preferred by their SLW counterparts (see Example 1). This reflects an important aspect of the positivist-empirical epistemology of the hard discipline: the voice of the researcher is subordinated to the voice of nature, and facts should be allowed to speak for themselves (Hyland, 1999b). So the researchers' interpretative role is minimized in the writing process, strengthening the objectivity of their study. On the contrary, soft discipline is more dependent on researcher's interpretation to make sense of phenomena (Hyland, 2008). For similar reason, CNC writers almost never make use of ENTERTAIN resources (such as "appear to" and "seem") that implies a subjective process of deduction on the part of the researcher (Martin & White, 2005) in order to downplay their interpretive role.

Another difference is related to the use of CONCUR and PRONOUCE resources, with the CNC writers employ significantly less of both. As PRONOUNCE involves an overt intervention by the authorial voice to stress the validity of the proposition (Martin & White, 2005), the less use of it reflects the writing practices of hard discipline to minimize the writers' role in order to present their research as objective (Hyland, 1999b). This objectivity allows a more cohesive body of knowledge in hard discipline with less dialogistic alternatives. Knowledge in soft discipline, however, is more open to the influence of contextual factors (Hyland, 2008). There is greater need for writers in soft discipline to argue their research against alternative interpretations. The CONCUR resource serves the purpose of excluding dialogistic alternatives (Martin & White, 2005). Hence, they are more frequently found in the SLW corpus.

Further difference between the SLW and CNC disciplines lies in the use of ENDORSE, with CNC writers making significantly less use of it than the SLW writers. According to Martin and White (2005), the use of ENDORSE associates the referenced proposition with the subjectivity of the authorial voice because writers intervene in the meaning making and construe the proposition as correct or valid. The less use of ENDORSE can be linked to the positive-empirical epistemology of the hard discipline, which requires writers to represent their research as objective and detached from subjective interpretation (Hyland, 1999b).

Within the same sub-discipline of SLW, there are also differences between the two groups of writers divided by qualitative and quantitative research paradigms. To start with, there are significantly more COUNTER resources identified in the quantitative LRs. This could be plausibly explained by the distinct inquiry methods of the quantitative research paradigm. The methods include correlational studies and quasi-experiments (Creswell, 2009), which require carefully defined variables and measurements to determine trends or test the impact of interventions. How a specific variable is defined and measured would often result in quite different findings even when other conditions are equal. In quantitative LRs, writers usually make comparisons among findings using different methodologies, so as to provide a direction and justify the specific practice adopted by their own study. The comparisons are often realized through the use of COUNTER resource, as in Example 24. This comparison is made for the writer to evaluate different measurements and provide a direction for the writer's own inquiry. As the quantitative research paradigm in soft discipline shares some characteristics with hard discipline in their inquiry methods, their writers do not differ in the use of COUNTER.

(24) When fluency as words per minute was calculated on writing time, outlining was found to positively impact writing fluency. **However**, when pre-task planning time was added to the calculation, outlining was found to have no effect on words per minute. (QUAN26)

In the SLW sub-discipline, there are significantly more ENDORSE resources identified in quantitative LRs than qualitative ones. This may possibly due to the different knowledge-making practices of the two research paradigms. Many qualitative studies are exploratory in nature, which means that not much has been discovered about the area and the researcher attempts to construct

an understanding of it (Creswell, 2009). In contrast, the objective of a quantitative study is to verify an existing theory or knowledge in an area (Creswell, 2009). To do so, researchers often develop a research hypothesis and collect data to test it, and reflect on the findings to confirm or reject it. The hypothesis is essentially an expected or likely finding based on what has already been established in the field. To map out the research hypothesis, a large part of quantitative LRs may devote to review findings of related studies, which is most frequently realized via ENDORSE in the current corpus.

To conclude this section, the variations between SLW and CNC sub-disciplines follow along the soft and hard discipline lines, as suggested by previous studies (e.g., Hyland, 1999a; 1999b; 2008). The findings on paradigmatic variations within the sub-discipline of SLW may corroborate Firestone's (1987) claim that quantitative and qualitative research reports employ different persuasive strategies. Although the difference lies in only two out of eight ENGAGEMENT resources, they are closely linked to important goals in writing LRs, such as justifying methodological choices (via COUNTER) and developing research hypothesis (via ENDORSE). Thus, for their research work to reach publication, it is necessary for novice and EAL research writers to understand the paradigmatic variations while comforting to broad disciplinary conventions.

Implications

The findings of this study significantly contribute to our current knowledge of how voice is realized through linguistic resources in reviewing literature in SLW (soft science) and CNC (hard science) sub-disciplines. The realization of voice was explored from an SFL perspective focusing on the ENGAGEMENT framework. The framework was previously applied in studies to examine student writing rather than RAs. The study has advanced knowledge about the application of ENGAGEMENT by examining high-stake research writings. The common patterns and differences of voice identified in this study could shed light on the accepted writing conventions of the SLW and CNC communities.

This study can provide valuable guidance for novice writers who wish to publish in internationally reputable journals to negotiate their position as legitimate members of the discipline. A key criterion for publication is to conform to disciplinary conventions of writing practices, which

applies to novice and established writers alike (Flowerdew, 2000). Novice writers, however, will find the requirement particularly challenging, especially EAL writers who are writing papers not in their first language. The findings of the current study may serve as a useful resource for both L1 and L2 novice writers. They also offer practical pedagogical implications for EAP and ERPP instructors, especially those specializing in the sub-disciplines of SLW and CNC. Last but not least, developers of writing manuals could draw on the findings of this study to produce materials offering systematic guidance to EAL/ERPP writers in both soft science and hard science disciplines.

Limitations and Future Research

While the study's use of a sample of 204 LRs with a focus on two sub-disciplines enables a higher-confidence quantitative generalization of writing practices in the two sub-disciplines, the current findings cannot be hastily generalized to other sub-disciplines of applied linguistics or computer science. Future studies thus need to be conducted with other sub-disciplines to thoroughly understand the most important writing conventions in applied linguistics and computer science.

Although the ENGAGEMENT resources discussed provide some useful insights into the relationship that writers intend to establish with their readers, this study does not examine directly the reader's construction of the writer's voice, in order to find out whether the writers have indeed succeeded in building the intended kinds of relationships. A study that examines how reviewers construct the writer's voice has shown that voice does play a role in the blind review process for publications (Matsuda & Tardy, 2007). Therefore, the reader's construction of voice in subject texts is an important element to consider in future related studies. Nevertheless, the current study does not preclude completely insights on the reader's side. This is because the samples of the study are RAs that have reached publication, which means that the writers have at least succeeded in building a satisfactory writer-reader relationship with arguably their most critical readers, namely gate-keeper reviewers of the journals.

The analytical framework adopted by the study comprises the ENGAGEMENT system from the APPRAISAL theory (Martin & White, 2005). Future studies may include the other two sub-systems in APPRAISAL, namely ATTITUDE and GRADUATION, and examine how these resources interact with ENGAGEMENT resources in the construction of authorial voice in writing

for internationally peer-reviewed journals.

References

Bazerman, C. (1988). *Shaping Written Knowledge*. Madison: University of Wisconsin Press

Belcher, D. D. (2007). Seeking acceptance in an English-only research world. *Journal of Second Language Writing, 16*(1), 1-22.

Bitchener, J. (2010). *Writing an applied linguistics thesis*. New York: Palgrave Macmillan.

Chang, P., & Schleppegrell, M. (2011). Taking an effective authorial stance in academic writing: Making the linguistic resources explict for L2 writers in the social sciences. *Journal of English for Academic Purposes, 10,* 140-151.

Cheung, Y. L., & Low, T. H. (in press). Pre-university students' voice construction in argumentative essays. *RELC Journal*.

Cho, S. (2004). Challenges of entering discourse communities through publishing in English: Perspectives of Nonnative-Speaking Doctoral Students in the Unitied States of America. *Jounal of Language, Identity and Education, 3*(1), 47-72.

Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). Thousand Oaks, California: SAGE.

Dörnyei, Z. (2007). *Research methods in applied linguistics*. New York: Oxford University Press.

Elbow, P. (1994). Introduction: About voice and writing. In P. Elbow (Ed.), *Landmark Essays on Voice and Writing* (pp. 11-47). California: Hermagoras Press.

Firestone, W. (1987). Meaning in Method: The Rhetoric of Quantitative and Qualitative Research. *Educational Researcher, 16*(7), 16-22.

Flowerdew, J. (2000). Discourse community, legitimate peripheral participation and the nonnative-English-speaking scholar. *TESOL Quarterly, 34*(1), 127-150.

Flowerdew, J., & Wang S. H. (2016). Author's editor revision to manuscripts published in international journals. *Journal of Second Language Writing, 32,* 39-52.

Gil-Salom, L., Soler-Monreal, C. (2014). Writers' positioning in literature reviews in English and Spanish Computing doctoral theses. *Journal of English for Academic Purposes, 16,* 23-39.

Guinda, C. S., & Hyland, K. (2012). Introduction: A context-sensitive approach to stance and voice. In K. Hyland & C. S. Guinda (Eds.), *Stance and Voice in Written Academic Genres*. United Kingdom: Palgrave Macmillan.

Holmes, R. (1997). Genre analysis, and the social science: An investigation of the structure of research article discussion sections in three disciplines. *English for Specific Purposes, 16*(4), 321-337.

Hyland, K. (1999a). Academic Attribution: Citation and the Construction of Disciplinary Knowledge. *Applied Linguistics, 20*(3), 341-367.

Hyland, K. (1999b). Disciplinary discourses: writer stance in research articles. In C. Candlin & K. Hyland (Eds.), *Writing: Texts, Processes and Practices*. London: Longman.

Hyland, K. (2005). Stance and engagement: A model of interaction in academic discourse. *Discourse Studies, 7*(2), 173-192.

Hyland, K. (2008). Disciplinary voices: Interactions in research writing. *English Text Construction, 1*(1), 5-22.

Hyland, K. (2012). *Disciplinary Identities: Individuality and community in academic discourse*. Cambridge: Cambridge University Press.

Ivanič, R., & Camps, D. (2001). I am how I sound: Voice as self-representation in L2 writing. *Journal of Second Language Writing, 10,* 3-33.

Kwan, B. S. C., Chan, H., & Lam, C. (2012). Evaluating prior scholarship in literature reviews of research articles: A comparative study of practices in two research paradigms. *English for Specific Purposes, 31*(3), 188-201.

Lancaster, Z. (2014). Exploring valued patterns of stance in upper-level student writing in the disciplines. *Written Communication, 31*(1), 25-57.

Martin, J. R., & White, P. R. R. (2005). *The language of evaluation: Appraisal in English*. New York: Palgrave Macmillan.

Matsuda, P. K., & Tardy, C. M. (2007). Voice in academic writing: The rhetorical construction of author identity in blind manuscript reviews. *English for Specific Purposes, 26*, 235-249.

McGrath, L., & Kuteeva, M. (2012). Stance and engagement in pure mathematics research articles: Linking discourse features to disciplinary practices. *English for Specific Purposes, 31*(3), 161-173.

Miller, R. T., Mitchell, T. D., & Pessoa, S. (2014). Valued voices - Students' use of Engagement in arguementative history writing. *Linguistics and Education, 28*, 107-120.

O'Donnell, M. (2011). UAM Corpus Tool (Version 3.2). Retrieved from http://www.wagsoft.com/CorpusTool/download.html

Ozturk, I. (2007). The textual organization of research article introduction in applied linguistics: Variability within a single discipline. *English for Specific Purposes, 26*, 25-38.

Palmer, F. R. (2001). Mood and Modality (2nd ed.). Cambridge, United Kingdom: Cambridge University Press.

Ramanathan, V., & Atkinson, D. (1999). Individualism, academic writing, and ESL writers. *Journal of Second Language Writing, 8*(1), 45-75.

Swales, J. M. (1990). *Genre analysis: English in academic and research settings*. Cambridge, United Kingdom: Cambridge University Press

Thompson, G & Hunston, S. (2000). Evaluation: an introduction. In S. Hunston, & G. Thompson (Eds.), *Evaluation in text*. Oxford: Oxford University Press.

Uzuner, S. (2008). Multilingual scholars' participation in core/global academic communities: A literature review. *Journal of English for Academic Purposes, 7*, 250-263.

White, P. R. (2012). Exploring the axiological workings of 'reporter voice' news stories - Attribution and attitudinal positioning. *Discourse, Context & Media, 1*, 57-67.

Wu, S. M. (2007). The use of engagement resources in high- and low-rated undergraduate geography essays. *Journal of English for Academic Purposes, 6*, 254-271.

THE ASIAN ESP JOURNAL

Blog-assisted feedback: Its affordances in improving College ESL students' academic writing skills

Hjalmar Punla Hernandez

English Division, Department of Humanities, College of Arts and Sciences

University of the Philippines

Arceli M. Amarles

College of Graduate Studies and Teacher Education Research

Philippine Normal University

Ma. Concepcion Y. Raymundo

Faculty of Arts and Languages,

Philippine Normal University

Biodata

Hjalmar Punla Hernandez is a PhD in Applied Linguistics candidate at the Philippine Normal University, and an Assistant Professor at University of the Philippines Los Baños. He considers Academic Writing, Computer-Mediated Communication, English for Academic Purposes, and Sociolinguistics as his research interests.

Email: hernandezhjalmar070@gmail.com; hphernandez1@up.edu.ph

Arceli M. Amarles holds a PhD in Applied Linguistics from De La Salle University, Manila. She was the Director for Membership and now the Secretary of the Linguistic Society of the

Philippines. Her research interests focus on Academic Writing, Discourse Analysis, and World Englishes.

Email: arceliamarles30@yahoo.com

Ma. Concepcion Y. Raymundo is a faculty member in the Faculty of Arts and Languages at the Philippine Normal University. Her research interests are in Academic Writing, and Language and Literature.

Email: cbyruma@yahoo.com

Abstract

In the 21st century, academic writing remains as a challenging skill to learn. ESL (English as a Second Language) learners, in fact, sometimes are faced with writing apprehension and poor writing skills. Being a qualitative and quantitative research, this study aimed at investigating the use of blog-assisted feedback in academic writing. Eleven ESL students in a tertiary level institution in the Southern Luzon, the Philippines, selected purposively, participated in the study. The study focused on the following: (1) determining the students' weaknesses in and attitudes towards academic writing before blog-assisted feedback; (2) using blog-assisted feedback as computer-mediated communication (CMC) tool through the feedbacking, revising, and editing stages of students' writing; and (3) identifying students' attitude towards writing after the blog-assisted feedback. The main data sources were the students' blog-based messages and reflections, content analyzed using the framework of Treadwell (2010), and Zhang and Wildemuth (2011). Results showed that most of the students had weaknesses in and almost all of them had negative attitudes towards writing. In connection to this, blog-assisted feedback was found meritorious in improving writing skills. Such innovation can likewise be concomitant with the students' improved attitudes towards writing; hence, blog-assisted feedback is recommendable in facilitating certain stages of the writing process, i.e. feedbacking, revising, and editing.

Keywords: Academic Writing, Computer-Mediated Communication, Blog-assisted Feedback, Computer-Supported Collaborative Learning

1. Introduction

With the ever-growing access to the internet in the 21st century, college students' everyday activities in the academe have shifted to virtual spaces (Black, 2009); however, writing skills among tertiary students remain problematic (Mallen, 2007). Contrary to the notion that writing is difficult among non-native users of English, second language writing specialists such as Nunan (1999) and Tribble (1996) argue that writing is in reality challenging for both native and non-native speakers (NNSs) of English. As types of learners, both therefore are not exempted from the challenges of writing. In fact, Atea and Shawish (2010) claim that this is so as writing is a complex skill combining variously interrelated components and comprising a range of cognitive and psychomotor undertakings prior to students arriving at a written product. These challenges, however, are "enormous" for NNSs (Nunan, 1999, p. 271). Consequently, students tend to consider writing as a dreadful activity (Nepomuceno, 2011). College ESL (English as a Second Language) students taking Academic Writing course face associated concerns, that is, they can be perceived lacking the motivation to write. Moreover, "researchers so far have concluded that students' writings are more or less affected by the writing task … and there are still variables left unexplained, more studies are called for" (Ji, 2011, p. 23).

In a private tertiary institution in Southern Luzon, the Philippines, 50 to 60 percent of the total population of students fail in the Academic Writing course (MCL Assessment and Evaluation Office, 2014). Students, therefore, retake the course the second or third time. Conspicuously, this has been a trend observed when evaluating the writing performance of students in the institution. Anecdotally, when students are asked about what they like regarding writing, they simply elicit no reactions. When it comes to virtual spaces, they can be categorized as inclined as evidenced by their active manipulation of cell phones and iPods inside or outside classes. Faced with these issues, ESL writing teachers continue probing for solutions to make academic writing constructive, engaging, and successful. Technological or computer innovations such as Facebook, Black Board Learn, Edmodo, and Blogs are just some of the virtual spaces that ESL writing teachers may or can employ in facilitating the learning of their ESL writing students, more particularly in enhancing their writing proficiency. In terms of blogs, Liu and Chang (2011) have revealed that "a growing number of teachers, including second language (L2) teachers, have started using blogs in their teaching practices and professional development" (p. 26). In fact, Sun and Chang (2012)

note that blogs can play in the writing instruction, and that human-computer interaction can now be integrated into ESL writing teachers' instructional choices. Through blogs, ESL students can be encouraged to enhance their writing skills (Yunus, Tuan, & Salehi, 2013). Equally importantly, Kutlu (2013) asserts that "technology can be used in order to develop writing skills of the students" (p. 270). Inspired by the foregoing arguments, and motivated by the opportunity of utilizing technology to ESL students' writing abilities (Sandolo, 2010) or written communication (Hiradhar, 2013), this study aims at investigating the employment of blog-assisted feedback as an innovative computer-mediated communication (CMC) tool to expedite the writing skills and attitude of college ESL academic writing students. Along with this, the study's objectives are to: 1. provide ESL writing teachers the affordances of blog-assisted feedback in enhancing college ESL students' writing skills, and 2. offer them practical functions of blog-assisted feedback that may overhaul students' negative attitude towards writing.

2. Review of related literature

2.1 CMC through Computer-Supported Collaborative Learning

The study is supported by computer-supported collaborative learning (CSCL) (Stahl, Koschmann, & Suthers, 2006) that proposes new virtual applications bringing students and teachers creative activities of social exploration and interaction. Computers as mediating tools provide alternative avenues for discussions and develop shared information. They can assist sociability through communication and feedback. CSCL (Stahl, 2006) concentrates on meaningful negotiations and focuses on collaborative knowledge building (Scardamalia & Bereiter, 1991). Computers boost artefacts for instruction (Ludvigsen & Mørch, 2008; Vygotsky, 1986). Reciprocally, blogs as CMC tools offer a viable environment for collaboration through which users can express ideas in the World Wide Web (Fageeh, 2011). Stahl (2006) underscores that blogs are persistent CSCL environments capable to be read or accessed. Blogs, artifacts mediated by computers, are texts serving as proofs of meaning-making process between online participants like the teacher and students. CSCL suits the study as blogs are CMC tools mediated by computers. They are text-based interface whereby collaboration between online participants takes place. "Blogs are forms of software that can help create social communities where both readers and writers can interact" (Bloch, 2007, p. 134).

2.2 Feedback in Second Language (L2) Writing

According to Biber, Nekrasova, and Horn (2011) who critically reviewed feedback in L2 writing, feedback in L2 writing is classifiable into 1. source, 2. mode, 3. focus, 4. type, and 5. tone. The source of feedback can be the teacher, a peer, a student, or the computer. The feedback may be given orally, written, or computer-mediated. In addition, the focus of feedback varies in terms of the components or skills in academic writing from grammar, vocabulary, spelling, organization, and content to mechanics, form, and content and form. Whatever the feedback, it can be positive, negative or mixed in tone. Furthermore, feedback outcomes can be measured by looking into students' writing proficiency, attitude, records of composition strategies/processes, and records of revisions that may focus grammar; spelling, content, organization, vocabulary, or holistically on these focus types. In their analysis, Biber, Nekrasova, and Horn report that among the feedback sources, computer-mediated feedback has the least number (i.e. 32 studies compared to teacher feedback that had 119 studies), which suggests that there exists a lesser attempt of utilizing technology into ESL writing.

2.3 Blogs in ESL/EFL classrooms

In the new millennium, technology or CMC tools are a trend integrated in ESL teaching and learning *(*Farahian & Rajabi, 2013). Weblog, for instance, is one of the innovative CMC tools. It is *blog* for short, while *blogging* is the act. Blog is an internet-powered site supporting in creating compositions with relative ease. They can either be asynchronous or synchronous (Gedera, 2012). Campbell (2003) among others has specified blog types: tutor, class, and learner blogs. Campbell, Stanley (2005), and McDowell (2004) have reported on blogs' educational purposes: a space where students and parents find information about course syllabus, homework assignments, assessment, deadlines and so on, a portal to help students explore the resources hyperlinked to the blog entry, and a hub where permanent links can be organized to aid the students in developing autonomy. Unconventionally, blogs are not delimited to texts as they now include hypermedia entries such as videos, images, and the like (Educause Learning Initiative, 2005). Depending on how they are used, blogs serve various purposes. These and other purposes have been proven by certain studies on blogs.

2.4 Related studies

Over the years, blogs have been a writing tool being investigated in ELT research. According to studies (Blackmore-Squires, 2010; Gedera, 2012; Lin, Lin, & Groom, 2013; Nepomuceno, 2011; Özdemir & Aydin, 2015; Sun & Chang, 2012; Zhou, 2015), blogs in ESL and EFL settings have been proven as meritorious in different ways. Specifically, they have pedagogical, affective, social, and psychological roles in ESL and EFL classes.

The pedagogical dimension of blogs comes into a number of various aspects. Nepomuceno (2011) have found blogging as an effective activity in developing writing proficiency, writing practice, writing with less pressure and more confidence, and so on. In addition, Lin, Lin, and Groom (2013) have described blogging as a writing platform with amusing features to users like convenience, novelty, and freshness. Yunus, Tuan, and Salehi (2013) have reasonably reported that blogs allow lecturers of English to incorporate other multimedia components which in turn encourage ESL students to stimulate their writing skills. Espousing the claim of Lin, Lin, and Groom, they also have found that blogs provide a platform for students particularly in communicating and support them in commenting to other students' compositions. As for peer feedback, Gedera (2012) has asserted that blog peer feedback supports interaction among learners, and that is a good way to express their feelings and opinions. Relative to this is her claim that it improves students' writing specifically in the lexico-grammatical level. However, improvements in writing, according to Zhou (2015), were actually due to blog-assisted process writing as a treatment that helps students overcome some of their writing difficulties. This is in fact supported by Özdemir and Aydin's (2015) findings that teaching writing through process influences students' writing achievement not in blog only but in traditional writing environment also.

The affective side of blogs, on the other hand, is represented by the confidence and motivation that ESL students have attained after using blogs in their writing classes. For one, Zhou (2015) has reported that students develop a sense of confidence in expressing their ideas by writing, and they like the blog evaluation of reading each other's writing and learning from it. Gedera (2012) has similarly revealed that blogs make them interested in writing as it motivated them. Specifically, blog peer feedback was a very innovative method of encouraging students to write, and is more flexible compared with face-to-face feedback. Fairly interestingly, Sun and Chang (2012) have

noted that blogs motivate students to participate in sharing and generating knowledge, and developing writing strategies along the process of learning writing.

Generally, blogs render social support towards academic writing students. Sun and Chang (2012) have affirmed that blogs offer learning through social support, and that they empower students to have a sense of writer identity. Through blogs, students demonstrated an awareness of being responsible academic writers by showing their necessity of constructing logical, clear, and coherent texts for readers. The interactive and collaborative nature of blogs proved that they can help students to reconstruct their knowledge of writing and convey their identity as writers. Likewise, Zhou (2015) has reported that the blog-assisted process writing aids student writers in collaborating, cooperating, brainstorming, and discussing in an ESL writing class. Equally substantially, Gedera (2012) revealed that blogs offer functionality and intuitiveness, and writing for an audience, commenting, and receiving comments, and collaborative environment. For example, ESL students see the need for posting their feedback; otherwise, their classmates would identify that they are not finished yet (Gedera, 2012).

Psychologically, blogs have been perceived in valuable ways too. Blackmore-Squires (2010) has asserted that blogs are a user-friendly communication tool that is supportive to the improvement of students' critical thinking skills. Thus, writing for an audience, the process writing with peer review, self-editing, and revising influence the quality of students' writing. Moreover, Lin, Lin, and Groom (2013) have perceived that blogging is journaling that improves their writing.

To critically examine, it is clear that blogging or blogs are pedagogically, affectively, socially, and psychologically functional though they also have down sides such as "intolerable bloggers," and distractions, online gaming, and other applications by social networking sites and paucity of a physical mentor (Nepomuceno, 2011), informal and ineffective physical setting, unduly distracting, and difficulty of concentration (Lin, Lin, & Groom, 2013), and students' lack of skills and participation in blogging (Yunus, Tuan, & Salehi, 2013). To highlight the research gaps, the studies above except Özdemir and Aydin (2015) and Zhou's (2015) did not report on the quantitative improvements that writing students may have made after engaging in a blog-assisted writing class. Over the years, many studies in L2 writing were qualitative, or thought pieces (Biber, Nekrasova, & Horn, 2011); thus, this implies the need for quantitative or mixed method studies in

academic ESL writing. Additionally, they did not clearly address the affective dimension of students namely their writing apprehension. More importantly, more of them such as Nepomuceno (2011), Sun and Chang (2011), Blackmore-Squires (2010), Lin, Lin, and Groom (2013), and Yunus, Tuan, and Salehi's (2013) studies lacked the writing teachers' engagement in the blogging treatment. Along with these lacunas is the apparent divide between the seemingly lacking utilization of blogs into ESL writing, for example in the Philippine ESL setting, with students facing challenges in their writing skills while there exists a lesser attempt of utilizing technology into L2 writing. ESL/EFL writing teachers, in fact, are responsible for providing "novel paradigms" and "new frames" (Aljumah, 2012; Erkan & Saban, 2011; Vygotsky, 1978) to develop and engage writing students or more specifically aid them in improving their writing skills and apprehension. Fusing blogs with ESL writing pedagogy, i.e. written feedback was not visibly articulated in the past studies. Therefore, the study employs blog-assisted feedback in the process writing of students in the tertiary level. Alongside this, it seeks to investigate the affordances of blog-assisted feedback to the academic writing skills and writing attitude of students. In this regard, the researcher seeks answers to the following questions.

2.5 Research questions

1. What are the students' weaknesses in and attitudes towards writing before blog-assisted feedback?
2. What merits did blog-assisted feedback bring to students' writing?
3. What are the students' attitudes towards writing after blog-assisted feedback?

3. Methodology

3.1 Research design

The study used mixed research design through collecting qualitative and quantitative research data to describe students' weaknesses in and attitudes towards academic writing, and present the affordances or merits of blog-assisted feedback in the academic writing skills of students.

3.2 Sampling technique and participants

Purposive sampling was used in identifying the respondents. The respondents were 11 college ESL students (taking different programs, i.e. Maritime Education, Information Technology, and Multimedia Arts) from a heterogeneous Academic Writing class of 40 students in the Second Term of 2016-2017. The 11 were selected after reviewing and assessing all the 40 students' previously submitted compositions.

3.3 Research instruments

Using Gayeta's (2002) criteria of writing components and errors (adapted from ESL Composition Profile), the researchers reviewed and assessed students' previous compositions to identify their writing weaknesses in terms of content, organization, vocabulary, language use, and mechanics. A questionnaire was also used to determine their attitudes towards writing with the 11 students. To validate this, students underwent interview. Moreover, blog survey of Abu Bakar and Ismail (2008) was administered with students to identify their knowledge on blogs.

3.4. English level of the students, notion of peer feedback, and knowledge of using blogs

After reviewing and assessing their previous essays, the researchers discovered that the students' level of English writing ranges from poor to fair in terms of content (17-21 points), organization (10-13 points), vocabulary (10-13 points), language use (11-17 points), and mechanics (3 points). These students, however, were repeaters of the academic writing course; hence, they already had an idea on the notion of peer-feedback in academic writing. In addition, they were all trained on how to operate blogs particularly before data collection. Assuring that the students are the same in terms of their level of English writing, knowledge of peer feedback, and knowledge of operating blogs, potential mediating variables were controlled.

3.5 Data collection and analysis

Before starting the actual data collection, the researcher formally asked permission from the Office for Research Promotion and Coordination of Malayan Colleges Laguna to conduct the study which they gladly approved. Training sessions on operating blogs were carried out. Students who have either high or low proficiency in technology must receive instructions about the operations of

computer; thus, they could benefit from familiarization processes in order to identify the nuances of blogs into the classroom (Blackmore-Squires, 2010). Familiarization was given a week. The blog platform utilized was Webs.com since it offers free hosting service for building blogs. Class and student blogs were used.

On the other hand, students were tasked to write persuasive essay as it is useful for them when tasked with writings not only in English courses but also in other subjects. Langan (2011) emphasizes that persuasion always applies to essays since all forms of writing are persuasive. It was also the lesson stipulated in the Academic Writing Syllabus of the institution. The study employed online writing process.

Blogging was divided into six sessions: prewriting, composing, feedbacking, revising, editing, and publishing. The researcher then followed the format that follows.

1. Prewriting: This served as their warm-up activity and caught their interest about the writing task, providing them ideas on what to write. Viewing, brainstorming, and outlining over the blog were made in this stage. This happened before the students wrote the first draft of their persuasive essays in the class blog. Figure 1 shows the screen for prewriting of the class blog.

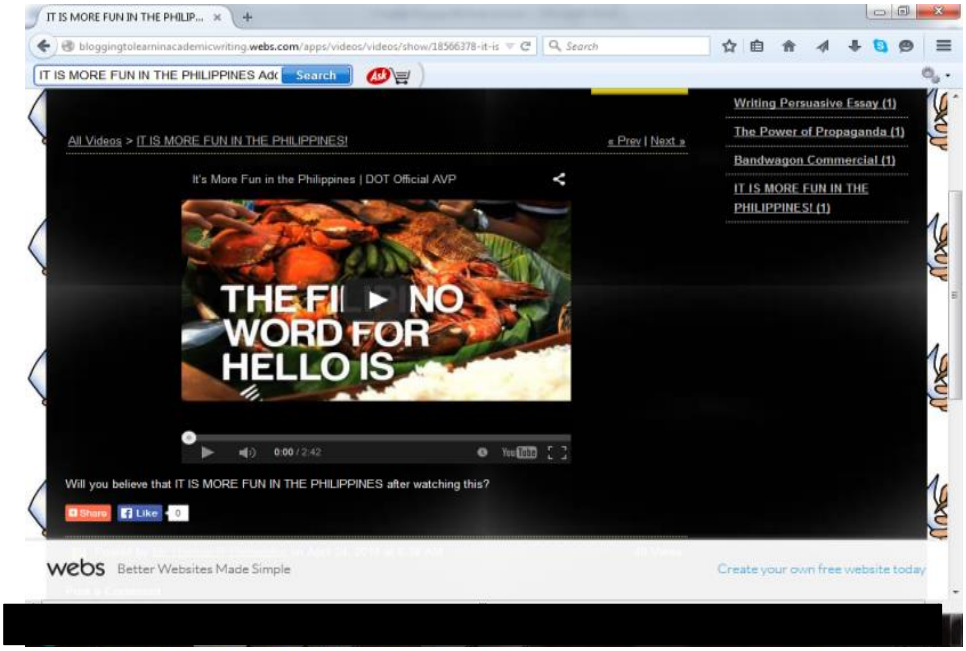

Figure 1: Prewriting

2. Composing: Students were expected to write their compositions structured with introduction, body, and conclusion on class the blog. This stage gave students the ample time to write the first rough draft of their persuasive essays with the aid of the formal outline they prepared during the prewriting stage.

3. Feedbacking: Peer conferencing was performed. Each participant was paired with another and each of them contributed feedback; thus, giving each a chance to make sense of his peer's persuasive composition. This part provided the students the opportunity to read and review their peers' written outputs and express their constructive or negative feedback, which is, focusing on the vital elements of academic composition, towards their classmates' persuasive essays.

4. Revising: Considering the constructive feedback of their peers, the students were tasked to rewrite their first drafts building-up significant elements of academic writing (i.e. content, organization, language use or grammar, vocabulary, and mechanics) which necessitated reconstructions. This part also gave the teacher the chance of providing feedback about their essays prior to revising them. This stage aimed to strengthen the students' persuasive composition.

5. Editing: This part offered the students the prospect of rebuilding their written outputs. They rewrote their persuasive essays striving to improve more on elements of written compositions such as syntax, and mechanics that required further reconstructions. Moreover, this stage also provided the teacher a chance of giving feedback for improvement before editing their essays.

6. Publishing: The students produced a refined persuasive essay while creating their student blogs. Before publishing their compositions, the teacher still suggested pointers to enhancing their essays. This functioned as the final stage of the online writing process.

During the data collection, it is worth noting that it was through these sessions that the students communicated with each other and their teacher. It is also important to note that students covertly participated in the study so as to avoid the Hawthorne effect that is a threat to external validity of the results. And before dismissal in each session, students maintained reflections on the class blog.

Asking the respondents to write reflections instantaneously after each session was performed as immediate introspection in order to control moderating variables such as delay of reaction, time lapse, and so on that may affect retrieving their attitude towards blog-assisted feedback. Since blogs are archival (Nardi, Schiano & Gumbrecht, 2004), students' and the teacher's blog-mediated feedback or written interactions during the feedbacking, revising, and editing stages were documented. Blog-mediated feedback and student reflections were used as sources of data. They were analyzed using Treadwell's (2010) and Zhang and Wildemuth's (2011) content analysis framework. Two inter-coders were involved in data analysis, plus one of the researchers. Thus, three inter-coders performed inter-coding in order to avoid researcher expectancy, a threat to internal validity. Data analysis was done thrice.

Inter-coders did independent coding proper given that they were properly briefed about the study's objectives, background, methodology, and the coding. Two rounds of inter-coding assessments took place in which similarities and differences in light of the coherence of the coding scheme and the samples transpired. New categories such as "Record of Writing Development" were also discovered along the process. Moreover, inter-coding agreement was calculated to avoid whimsical judgments. Stemler (2001) in this book, *An Overview of Content Analysis*, notes that to make measurements of inter-coding reliability is to calculate the percent of agreement between coders. To do this, the researcher basically added the number of similar cases that were coded by the inter-coders and divided it with the number of total cases. This was done during each round. In the first round, all the inter-coders arrived at 40 percent similarity. The researcher and the inter-coders made justifications as to the reasons why they coded one sample and another until they all agreed and arrived at an understanding. The researcher also made more briefings in order to provide the inter-coders further instructions. In the second round, they inter-coded again all the data and they agreed at 75 percent. In terms of the codes and samples that they were different, the three of them expressed their analyses about why they coded specific samples until the inter-coders reached an agreement of adjusting their coding to the coding of the researcher. As final agreement, they arrived at 90 percent similarity supporting inter-coder reliability. Conventionally, this percentage of agreement justifies the acceptable reliability estimation as not less than 80 to 90 percent which what analysts accept as reliable (United States General Accounting Office, 1989). Citations of the data in the results section are authentic; therefore, they were unaltered. To address the quantitative aspect of the study, the researcher with two other raters (also the inter-coders in

content analysis) rated the students' essays. The three raters used Gayeta's (2002) criteria of writing components and errors (adapted from ESL Composition Profile), to score the students' compositions in terms of content, organization, vocabulary, language use, and mechanics. The scores from the three raters were interpreted using the correlation-coefficient. Its equation is shown below.

$$r = \frac{n(\Sigma xy) - (\Sigma x)(\Sigma y)}{\sqrt{[\, n\Sigma x^2 - (\Sigma x)^2 \,][\, n\Sigma y^2 - (\Sigma y)^2 \,]}}$$

While this statistical approach is workable only for two sets of scores, the overall interpretation of r was obtained via triangulation, that is, the computation of correlation-coefficient was made between Rater 1 and Rater 2, Rater 2 and Rater 3, and Rater 1 and Rater 3 with which the r of each was compared. Specifically, Rater 1 and Rater 2 yielded 0.85, Rater 2 and Rater 3 generated 0.88, and Rater 1 and Rater 3 made 0.93. Since all the r from the three computations of correlation-coefficient was between 0 and 1, the scores meant that there is a High Positive Correlation among the scores of the three raters.

4. Results and discussion

The findings of the study are outlined in this section. Where applicable, the current results will be compared and/or contrasted with the concepts in the related literature and findings revealed in the previous studies.

4.1 Students' Weaknesses in Academic Writing

Most of the students had weaknesses in the five writing components namely content, organization, vocabulary, language use and mechanics as shown in Table 1. The asterisks correspond to the writing weaknesses.

Table 1: Students' Weaknesses in Academic Writing

Component	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11
A. Content	*	*	*	*	*	*	*	*	*	*	*
B. Organization	*	*	*	*	*	*	*	*	*		*
C. Vocabulary	*	*	*	*	*	*	*	*		*	
D. Language Use	*	*	*	*	*		*	*		*	*
E. Mechanics	*	*	*	*	*		*		*	*	*
Writing Weakness	A, B, C, D, E	A, B, C, D, E	A, B, C, D, E	A, B, C, D, E	A, B, C, D, E	A, B, C	A, B, C, D, E	A, B, C, D	A, B, E	A, C, D, E	A, B, D, E

Note: Table 1 shows the students' writing weaknesses in terms of A. content, B. organization, C. vocabulary, D. language use and E. mechanics. The asterisks correspond to the writing weaknesses.

Legend: A – Content; B – Organization; C – Vocabulary; D – Language Use; E – Mechanics; S – Student

4.2 Students' Attitudes towards Academic Writing

On the other hand, 72.72 percent of the students (i.e. S1, S2, S3, S5, S6, S9, S10, and S11) (8 out of 11) had negative attitudes towards writing revealed by the use of questionnaire and interview.

First, student 1 stated that "Writing is hard because of long writing exercises". It is also difficult for him especially when he is asked to write something he does not know. He explained that he feels that if he wrote something that is not good, he feels embarrassed because his work is not good as the others' writing. In addition, he noted that when others read his work, they might laugh at him because of his erroneous grammar, and lack of content. However, he wanted to improve his writing.

Similarly, student 2 expressed "I am not that much of a writer". He expounded that his writing is hard to understand. He stated that he feels nervous when someone reads his writing because he thinks that he is the only one who understands it. He revealed that he is weak in terms of organizing ideas since he usually jumbles his ideas. He wanted to overcome it in order to write properly. Furthermore, he still wanted to accomplish essays and writing activities.

Moreover, student 3 revealed that when somebody reads his essay, he feels shy and nervous because of the scattered and jumbled ideas in his composition, and incorrect sentence structure. He feels that when reading his essays, there are many mistakes. He reiterated that he can think of ideas but having difficulty in writing them correctly. Also, he mentioned that he has weakness in grammar and spelling. He perceived that some of his words in his sentences are not in specific place. He would like to write about informative topics such as alien and cloning.

In addition, student 5 noted that "Writing essays is boring" because it takes hours and topics are boring. He prefers to write on topics he knows. His writing skills are not really good and he believes that he has weaknesses in vocabulary, organization, grammar, and content. He feels proud when reading his composition primarily when he is the one who composed it; however, he feels ashamed when he is unsure of the correctness of his essay.

Affectively, Student 6 articulated that he feels lazy when writing. He is confused in terms of grammar, for example, the use of *this* and *these*. He feels good when reading his own composition, but he feels nervous when other read his work because people may see his mistakes. He likes to write about terrorists and likes to try learning writing online.

As for student 9, he feels sad when reading his composition because of his wrong grammar, and he feels nervous when others read his work because they might have negative impressions on what he has written. Student 9 conveyed that he likes to try learning academic writing online. He stated that he has weaknesses in grammar and vocabulary, that is, wordiness. However, he likes to overcome his weaknesses in order to write better.

In like manner, student 10 stated "Writing essay is difficult" because of grammar. He perceived that he has weakness in grammar, while he knows that it is important. He feels shy and afraid when someday reads his work since he feels that something is wrong with what he has written. He likes writing about the environment and current issues. He likes to try learning writing online because he feels that writing online can provide him time to think.

With disinterest, student 11 told that he is "easy-go-lucky" in writing. He explained that he has weaknesses in grammar, and vocabulary. However, he mentioned that these are important. He lacks confidence and sometimes he feels scared when reading his own writing because readers

might laugh at him because of his inaccurate grammar. Lastly, he would like to improve his writing as it will be essential for him in the future.

On the other hand, student 4, 7, and 8 reported more of their weaknesses in writing, and less of their negative attitude towards it. Student 4 enjoys writing and feels nervous at the same time. He enjoys it because he could express his thoughts and feelings, but he feels nervous when others read his composition because readers might misunderstand his compositions because of his incorrect and poor grammar. Moreover, he does not know how to divide parts of an essay even though he knows its structure. He also has difficulty in organizing ideas. As for him, he can write about a topic based on what he knows.

In the same way, student 7 thought that he has low proficiency in writing. He stated that he is weak in grammar, and vocabulary. When reading his composition, he feels confident but conscious of his grammar. He gets nervous because of his grammar mistakes. Moreover, he likes to learn writing online because he thinks he can be more expressive. In contrast, he is too shy and jittery when attending face-to-face class.

Lastly, student 8's case is somehow different as he stated that he encounters mental block when writing. Quite similarly, he is weak in terms of grammar, and organization. He expressed that he likes overcoming these two in order to be a good writer. He appreciates reading what he has written, but feels happy, at the same time, shy because of his mistakes such as ungrammaticalities.

4.3 Merits of Blog-assisted Feedback to Students' Writing

Blog-assisted feedback was found meritorious by providing virtual collaboration between peers, online correction of errors, record of writing development, and improvement of writing skills.

As for virtual collaboration between peers, blog-assisted feedback provided the students to merge in online peer collaboration and improve their persuasive essays in terms of content, organization, grammar, vocabulary, and mechanics. This finding exactly articulates Blackmore-Squires' (2010) assertion that the blog's collaborative environment is useful in improving students' writing skills. Importantly, it confirms Zhou's (2015) claims that blog-assisted process writing helps learners not only in collaborating, and Gedera's (2012) finding that blogs offer a collaborative environment. The class blog functioned as a virtual platform for executing peer review which is a meaningful

process of writing. Students became certainly capable of reading through each other's essays, commenting to their peers, and receiving comments from their peers. It was evident that their comments were about the chief elements of written academic compositions, i.e. content, organization, vocabulary, language use, and mechanics. Students read and analyzed each other's compositions in terms of their strengths and weaknesses as well, and they provided these for each element of writing respectively. Student 2 became particularly creative by applying symbols indicating the type of comments he sent to his peer. Figure 2 shows an instance of online peer feedback.

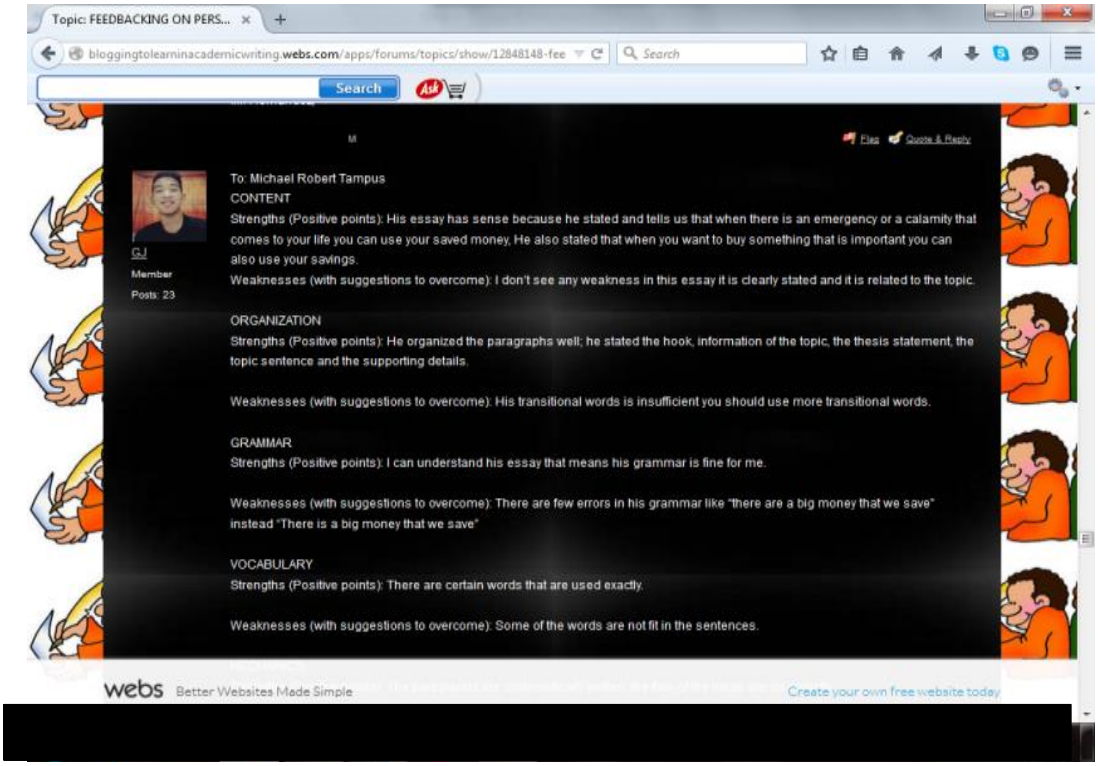

Figure 2: Online Peer Feedback

Another example of a pair, documented in word processor is presented here.

Student 1 November 09, 2016 at 10:55 AM

To: (Student 2) here is my feedback on your essay.

CONTENT

Strengths (Positive points):

Your essay is easy to understand and you plot the main point of the topic. Good work!

Weaknesses (with suggestions to overcome):

Some paragraphs are not detailed, you should give more examples.

ORGANIZATION

Strengths (Positive points):

You write your ideas well and organized. Good work!

Weaknesses (with suggestions to overcome):

You should use other words or synonyms for the word "victim" to avoid redundancy.

GRAMMAR

Strengths (Positive points):

Your sentences are easy to understand.

Weaknesses (with suggestions to overcome):

You should be careful in using the tenses and words that has "d" or "ed".

VOCABULARY

Strengths (Positive points):

You have used simple words that are easy for readers to understand.

Weaknesses (with suggestions to overcome):

Some words are no need to use, like the "acquaintance".

MECHANICS

Strengths (Positive points):

You write your sentences well and neat.

Weaknesses (with suggestions to overcome):

Do not contract words, and you should use comma before the transition words. Also check your spelling.

Student 2 at November 09, 2016 at 10:59 AM

For Student 1

Feedback:

Legend:

"+" = Strengths

"-" = Weaknesses

~ Content ~

+ Your ideas and details in this topic made me convinced about our country. Also, your Ideas and Details are perfectly matched to your topic.

- You have no weaknesses when it comes to Content.

~ Organization ~

+ Your Essay is perfectly written in five-paragraph form. The topic sentences are well-written and the Introduction has an excellent start.

- You have no weaknesses when it comes to Organization.

~ Grammar ~

+ Your grammar is not that bad and it's easy to understand.

- There are a few grammatical mistakes or mispelled words in your essay. The use of "is" and "are" including the tenses must be improved. Plus, the use of verb after the topic must be improved for example: ~~People needs to give attention~~ [People need to give attention]

~Vocabulary ~

+ Your Vocabularies are well-used in some sentences and it's basic and easy to understand the meaning.

- Although your vocabularies are basic, you need to improve them with a little advanced words that can give the readers a challenge to understand the meaning of it.

~ Mechanics ~

+ The comma is well-used in every sentence.

- Every paragraph needs an indent. There are a few proper nouns that needed to be capitalized. After completing a sentence, you must leave 2 spaces before starting a new sentence.

Expressing each other's analysis, students obviously made a follow-up to confirm on their comments whether it was useful. For student 1, student 2's feedback was helpful because he realized his need for improving more of his vocabulary skills.

Student 2 November 09, 2016 at 11:09 AM

Hey Mr. Yu, how was my feedbacks? did you find my feedbacks helpful?:D

Student 1 November 09, 2016 at 11:13 AM

Yeah. I really need to improve my vocabulary more. 

Students became engaged in developing their writings, and this illustrated that the blog promoted a collaborative educational environment conducive to enhancing the quality of writing skills (Blackmore-Squires, 2010). Being able to accept the feedback is critical to a writer's success (Hunt & Milsom, 2011), students became acquainted with others and they recognized the relativeness and benefits of critiquing the works of their classmates. Relying on the suggestions and feedback from others, students were able to describe their experiences as invaluable, in that receiving supportive comments and feedback from each other aided them to progress into different aspects. The researcher found one commonality of online experience which is the improvement of students' composition mistakes and writing skills. Student 6 stated that,

Blog extract from Student 6 November 09, 2016 at 11:58 AM

> *Feed backing can help my partner and me to improve what are my mistakes….It can help my blog mate improve his essay by giving feed backs and comments. …I learned many things again today and i see on my partners feed back that i need to improve my essay...*

On a more specific level of peer reviewing, the students became entangled in co-authoring. Blog-assisted feedback provided them the chance of gathering substantial inputs about their writings from their peers who observably worked as coauthors. Providing additional and stronger confirmation about this, the students declared the certainty of the assistances of feedbacking done on the class blog. They benefited ideas and knowledge from one another. They could also muster their capability of performing the tasks. They discovered that initiating to share what they know geared them towards learning essential and helpful knowledge beyond their understanding. In support to peer reviewing, joint or collaborative learning between them took place through which they gained meaningful insights in order to improve their essays. They served as coauthors with each other.

Blog extract from Student 2 11:39 AM on November 09, 2016

> *I've been able to help my blogmate improve his essay by giving feedbacks and comments. Giving suggestions and feedbacks to my fellow blogmate is like a step on supporting a true writer with published stories, novels, essays, etc…. Although*

my partner's essay have lots of required improvements, but I was able to give suggestions and I noticed that he has no problem with Contents and Organization…

Student 2 expressed that he was able to assist his classmate by giving feedback. He also realized or made sense of it by stating that, *"Giving suggestions and feedbacks to my fellow blogmate is like a step on supporting a true writer with published stories, novels, essays, etc,".* Furthermore, student 2 became capable of identifying his classmate's writing areas for improvement, and areas which were unproblematic.

Blog extract from Student 1 11:24 AM on November 09, 2016

…This stage, the feed backing part really helps to get ideas in the other person… and I have gained some knowledge again from this session…..

Student 1 reported explicitly that feedbacking indeed aided him since he was able to gather insights and gained knowledge from his partner.

Blog extract from Student 10 12:12 PM on November 09, 2016

…we are able to share our feedback about our essays, We can share meaning that we have the capability. Sharing thoughts with my partner brings us more knowledge and ideas to be exchanged...In fact, when we initiate to share, we will definitely get more and more feedback which may be beyond our knowledge...

In addition, student 10 positively noted that he and his partner were both able to share meanings and their thoughts which brought in each of them ideas. He realized and stated that through initiating to share, they will get feedback may be beyond their knowledge. This note seemed to express student's 10 understanding that feedbacking is useful to them.

Blog extract from Student 6 11:58 AM on November 09, 2016

…We can share ideas what we already know and help together to compose a proper persuasive essay… My partner can give some suggestions to improve my essay and i give him too a suggestions...

Student 6 communicated his and his partner's mutual roles when giving feedback. It was like they were both were senders and receivers of the message during the online communication process. Suggestions served as their message or ideas assisting or coauthoring each other in order to recreate their persuasive essays.

Students' blogs demonstrated the application of blog-assisted feedback, confirming the worth of social construction particularly giving feedback of peer towards his peer thereby instituting knowledge co-construction which is essential in enhancing the academic essays of students. As such, Sun and Chang (2012) prove this point that the interactive and collaborative merits of blogs proved they can help students not just process but also reconstruct their knowledge of writing and convey their identity as writers. The class blog promoted a collaborative learning environment (Blackmore-Squires, 2010), and the collaborative learning that was established manifested that students contributed to each other's improvements of their writings. Blog provides sociable environment for collaboration where students can share and express their thoughts and ideas (Baku, 2011). As Fageeh (2011) strongly claims, "CMC affords viable environment to promote collaborative learning endeavors" (p. 34), and that blogs as CMC tools offer a useful setting for collaboration by which users articulate their ideas.

Regarding online correction of errors, blog-assisted feedback facilitated the plausibility and efficiency of virtual error correction given by the teacher. The researcher observed that blogging consented the rectification of writing errors. The students in the study evidently appreciated the feedback of the teacher.

Blog extracts from Student 1 11:42 AM on November 10, 2016

> *... I did my revised version of my persuasive essay. I am comfortable in doing it, because there is a guide. The guide is the comments of my teacher to correct my mistakes in grammar, organization and so on…*

In the revising stage, student 1 felt comfortable and became efficient in conforming to the teacher's corrective feedback. The student recognized his teacher's comments for correcting his own mistakes in terms of language use and organization. As Gedera (2012) strongly suggests, writing

teachers join blog-facilitated discussions, and guide students towards proper directions of feedback as this may expose a difference as far as feedback quality is concerned.

Also in the revising stage, student 4 realized that he was capable of recasting his own errors in terms of misspelling and lack of appropriate vocabulary. The student had the consciousness when he stated that *Well, I already corrected them...* The student therefore learned the proper spellings and words through correcting errors.

Blog extracts from Student 4 11:39 AM on November 10, 2016

> *In vocabulary, I have some problems in giving some words that is not clear for the readers… …Well, I improve those problems by understanding the feedback of our teacher and ask him "what is this means".*

In the editing stage, student 4 revealed having improved his vocabulary with the help of the corrective feedback of his teacher and by asking questions.

Blog extracts from Student 1 11:13 AM on November 11, 2016

> *I thought that my work was already polished, and when i checked it, there are many mistakes in terms of content and mechanics so I edit it through the guide of the corrections of my teacher. It can be done in the blog because I have seen my teacher's as a peer, and I follow it again...*

Student 1 had realized that he still had to improve his content and mechanics based on the teacher's comments. The student himself was able to correct his own mistakes during the editing stage. There seemed to have a friendly atmosphere that took place when the teacher provided corrective feedback to the students in the class blog. This may be attributed to the class blog's absence of face-to-face communication between the student and the teacher in which sometimes face-to-face communication which has complex aspects becomes a factor for students to perceive misinterpretations of the teacher's purpose for correcting and understand corrective feedback as a form of hostile criticism; thereby, producing an intimidating effect from the teacher. CMC provides a friendly environment in which students can avoid embarrassing face-to-face criticism and disagreement (Bump, 1990; as cited in Lin & Kuo, 2011).

Blog extracts from Student 2 11:11 AM on November 11, 2016

> *…Then, in my mechanics, I have avoided lots of contractions and I noticed that the indention in my essay is too short, so I doubled the indention…*

In terms of mechanics, student 2 was able to correct his mistakes in using a lot of contractions and lack of indention. Student, therefore, illustrated a sense of consciousness of correcting his own mistakes.

With regard to the record of writing development, the students' growth as writers was identified in light of the gradual improvement they expressed. Additionally, their persuasive essays got better every after blogging session more noticeable progressions from the feedbacking stage to the editing stage. Students' writing development can be attributed from the blog-assisted feedback they received from their peers and the teacher. Students declared that blog-assisted feedback developed their writings. Supporting these claims, students' reflections revealed the following.

Blog extract from Student 10 12:55 PM on November 09, 2016

> *My improvement today is my essay because i apply my learning's that you give me……and today i slowly overcome my weaknesses about essay writing…The feed backing is very effective for me because i apply that to revise my essay and make it better…It helps my skills to improve and developed it step by step. …. this blog helps me to use blogs in a educational way…*

In the revising stage, student 10 posted a number of collective reflections on his progress and stated that he improved his essay by applying the feedback provided to him. This is supported by *The feed backing is very effective for me because i apply that to revise my essay and make it better…It helps my skills to improve and developed it step by step. ….*He also told that he was overcoming his weaknesses gradually. He was able to employ blogs academically.

Blog extract from Student 11 11:31 AM on November 09, 2016

> *…My essay is more improved in terms of grammar because before i prefer to use words that best to my ear but now i realize that there are more words that are*

compatible to each sentence…I also improved in the terms of Content because i already have added to my essay…

Student 11 expressed that his essay improved in terms of grammar and content. In terms of syntax, he was able to use words and realized that there were more words appropriate for each sentence. In terms of content, though it seemed that a word was missing in the blog extract above, the meaning was quite straightforward that he was able to add more ideas into his essay. Since this was in the revising stage, it was understandable though that improving in terms of grammar and content was brought by feedbacking through the blog.

In the editing stage, student 2 posted a number of collective reflections on his progress. He improved in using the content words like nouns and verbs, and function words like pronoun. He did not only express about his growth in terms of lexico-grammatical, organizational, and mechanics levels. He also expounded on being focused on the topic, and he noticed that his supporting ideas and details for content became hooked with his topic, that is, it became unified. This simply entailed that the student achieved unity or oneness of ideas as one of the vital rudiments of discourse content in academic essays.

Blog extracts from Student 2 11:11 AM on November 10, 2016

…My essay is improved in terms of grammar and mechanics. In my grammar, I have improved the use of pronouns, nouns and verbs with tenses. I have improved other elements… organization…My essay is still on a five-paragraph form…I have improve content……my ideas and details on every topic does not go off-topic unless it is an example…I have improved …. Vocabulary… …and my vocabulary through the essay is still very understandable and a little advanced…

Blog extracts Student 3 11:43 PM on November 10, 2016

My essay is more improved because of the grammar that is my weakness for example the use of word "this and these" "their and there"...In term of content I have a lack of thesis statements and the topic sentences and some part of the conclusion….but I was able to improve it…In vocabulary I must use synonyms to make my essay good enough and I think I was able to improve it also…

On the other hand, student 3 above confessed on being able to use accurately demonstrative pronouns, possessives, and expletive. He further realized the value of utilizing synonyms in writing his essay. He was capable of improving his content by providing thesis sentence and topic sentences.

Blog extracts from Student 4 11:39 PM on November 10, 2016

> *…In the second feedback, I notice that I have plenty errors compare to the first feedback it helps me to improve my persuasive essay…My essay is more improved in terms of grammar, because of the feedback of our teacher, I notice that I have a lack in using of conjunction. My essay is also more improved in terms of organization, I have a sentence that placed after/before the other sentence that I connected in the first sentences and how we organize the sentence...My essay is also more improved in terms of content, I have problems in giving some samples to support my statement..It also improve my mind to learn in unknown words and how we organize the sentence...In grammar, I also improve it…*

Student 4 compared and contrasted the number of feedback he received from his peers and teacher. In the first feedback that student 4 experienced, his partner perhaps was not able to provide plenty of feedback or the partner maybe was not certain of the areas of the compositions which needed revisions. The teacher, in the second feedback that student 4 underwent, more probably was able to provide more sound and insightful feedback; therefore, the student confessed that his persuasive essay improved more due to the teacher's feedback. His composition was enhanced particularly in terms of conjunctions, organizational and sentential levels.

Importantly, improvement of writing skills was also revealed. To support the findings above, students' essays were graded after the six sessions, equivalent to six days of blog-assisted feedback. Students' writing skills, through blog-assisted feedback, improved positively in terms of content, organization, vocabulary, and mechanics in writing, while the rest of them still had to strive improving their grammar or language use. This espouses Nepomuceno's (2011) finding that blogging was an effective activity in developing writing proficiency, and Blackmore-Squires' (2010) argument that blogging is helpful in improving writing skills. This was proven by the

ratings of the three inter-raters. Tables 2 to 15 that follow show the scores and computed r obtained from the three raters.

Table 2: Scores and Computed r Obtained from Rater 1 and Rater 2

STUDENTS	Rater 1 (x)	x2	Rater 2 (y)	y2	xy	
S1	74	5476	70	4900	5180	
S2	77	5929	79	6241	6083	
S3	77	5929	74	5476	5698	
S4	73	5329	68	4624	4964	
S5	70	4900	73	5329	5110	
S6	74	5476	73	5329	5402	
S7	70	4900	70	4900	4900	
S8	76	5776	79	6241	6004	
S9	75	5625	73	5329	5475	**r = 0.85**
S10	79	6241	84	7056	6636	
S11	67	4489	61	3721	4087	
TOTAL	812	60070	804	59146	59539	

Note: Table 2 shows the scores and computed r obtained from Rater 1 and Rater 2.

The result revealed that the r value 0.85 yielded positive correlation between the ratings of Raters 1 and 2.

Table 3: Scores and Computed r Obtained from Rater 2 and Rater 3

STUDENTS	Rater 2 (x)	x2	Rater 3 (y)	y2	xy	
S1	70	4900	72	5184	5040	
S2	79	6241	78	6084	6162	
S3	74	5476	78	6084	5772	
S4	68	4624	73	5329	4964	
S5	73	5329	73	5329	5329	
S6	73	5329	74	5476	5402	
S7	70	4900	70	4900	4900	
S8	79	6241	76	5776	6004	**r = 0.88**
S9	73	5329	76	5776	5548	
S10	84	7056	80	6400	6720	
S11	61	3721	69	4761	4209	
TOTAL	804	59146	819	61099	60050	

Note: Table 3 shows the scores and computed r obtained from Rater 2 and Rater 3.

The result revealed that the r value 0.88 yielded positive correlation between the ratings of Raters 2 and 3.

Table 4: Scores and Computed r Obtained from Rater 1 and Rater 3

STUDENTS	Rater 1 (x)	x2	Rater 3 (y)	y2	Xy
S1	74	5476	72	5184	5328
S2	77	5929	78	6084	6006
S3	77	5929	78	6084	6006
S4	73	5329	73	5329	5329
S5	70	4900	73	5329	5110
S6	74	5476	74	5476	5476
S7	70	4900	70	4900	4900
S8	76	5776	76	5776	5776
S9	75	5625	76	5776	5700
S10	79	6241	80	6400	6320
S11	67	4489	69	4761	4623
TOTAL	812	60070	819	61099	60574

r = 0.93

Note: Table 4 shows the scores and computed r obtained from Rater 1 and Rater 3.
The result revealed that the r value 0.93 yielded positive correlation between the ratings of the two raters.

On the other hand, each score for each writing component namely content, organization, vocabulary, language use, and mechanics provided by each rater was tabulated in order to view the specific improvements of each student. Overall, all students' essays exceeded 60 percent that is the passing grade in the Malayan Colleges Laguna (MCL) grading system. Likewise, this meant that the students passed and met the standard set by the school.

Table 5: Student 1's Specific Scores in the Five Components Given by Three Raters

Skills/Components	Rater 1	Rater 2	Rater 3	Average	Interpretation
Content (30 points)	19	20	23	21	GOOD TO AVERAGE
Organization (20 points)	18	17	16	17	GOOD TO AVERAGE

Vocabulary (20 points)	15	13	13	14	GOOD TO AVERAGE
Language Use (25 points)	18	17	16	17	FAIR TO POOR
Mechanics (5 points)	4	3	4	4	GOOD TO AVERAGE
TOTAL	74	70	72	72	PASSING

Note: Table 5 shows the specific scores in the five components given by three raters for student 1.

Student 1's scores from content to mechanics were interpreted as Good to Average, whereas his score in language use was fair to poor. It could be interpreted that student 1 improved primarily in terms of content, organization, vocabulary, and mechanics. Overall, student 1 obtained 72 over 100 which meant that he met the 60 percent passing grade.

Table 6: Student 2's Specific Scores in the Five Components Given by Three Raters

Skills/Components	Rater 1	Rater 2	Rater 3	Average	Interpretation
Content (30 points)	24	23	24	24	GOOD TO AVERAGE
Organization (20 points)	18	18	15	17	GOOD TO AVERAGE
Vocabulary (20 points)	16	17	16	16	GOOD TO AVERAGE
Language Use (25 points)	15	18	19	17	FAIR TO POOR
Mechanics (5 points)	4	3	4	4	GOOD TO AVERAGE
TOTAL	77	79	78	78	PASSING

Note: Table 6 shows the specific scores in the five components given by three raters for student 2.

Student 2's scores from content to mechanics were interpreted as Good to Average, whereas his score in language use was fair to poor. Like student 1, it could be interpreted that student 2 improved primarily in terms of content, organization, vocabulary, and mechanics. In general, student 2 obtained 78 over 100 which meant that he exceeded the 60 percent passing grade.

Table 7: Student 3's Specific Scores in the Five Components Given by Three Raters

Skills/Components	Rater 1	Rater 2	Rater 3	Average	Interpretation
Content (30 points)	21	25	27	24	GOOD TO AVERAGE
Organization (20 points)	17	15	17	16	GOOD TO AVERAGE
Vocabulary (20 points)	18	15	13	15	GOOD TO AVERAGE
Language Use (25 points)	20	15	17	17	FAIR TO POOR
Mechanics (5 points)	4	4	4	4	GOOD TO AVERAGE
TOTAL	80	74	78	77	PASSING

Note: Table 7 shows the specific scores in the five components given by three raters for Student 3.

Student 3's scores from content to mechanics were interpreted as Good to Average, whereas his score in language use was fair to poor. Like student 1 and 2, it could be interpreted that student 3 improved chiefly in terms of content, organization, vocabulary, and mechanics. In sum, student 3 obtained 77 over 100 which meant that he passed beyond the 60 percent passing grade.

Table 8: Student 4's Specific Scores in the Five Components Given by Three Raters

Skills/Components	Rater 1	Rater 2	Rater 3	Average	Interpretation
Content (30 points)	21	25	24	23	GOOD TO AVERAGE
Organization (20 points)	17	17	14	16	GOOD TO AVERAGE
Vocabulary (20 points)	15	13	13	14	GOOD TO AVERAGE
Language Use (25 points)	17	11	18	15	FAIR TO POOR
Mechanics (5 points)	3	2	4	3	FAIR TO POOR
TOTAL	73	68	73	71	PASSING

Note: Table 8 shows the specific scores in the five components given by three raters for Student 4.

Student 4's scores from content to vocabulary were interpreted as Good to Average, whereas his score in language use and mechanics was fair to poor. It could be interpreted that student 4 improved mainly in terms of content, organization, and vocabulary. Student 4 obtained 71 over 100 which meant that he passed the 60 percent passing grade.

Table 9: Student 5's Specific Scores in the Five Components Given by Three Raters

Skills/Components	Rater 1	Rater 2	Rater 3	Average	Interpretation
Content (30 points)	20	23	23	22	GOOD TO AVERAGE
Organization (20 points)	17	15	17	16	GOOD TO AVERAGE
Vocabulary (20 points)	15	15	13	14	GOOD TO AVERAGE
Language Use (25 points)	14	17	17	16	FAIR TO POOR
Mechanics (5 points)	4	3	3	3	FAIR TO POOR
TOTAL	70	73	73	72	PASSING

Note: Table 9 shows the specific scores in the five components given by three raters for Student 5.

Student 5's scores from content to vocabulary were interpreted as Good to Average, whereas his scores in language use and mechanics were fair to poor. Like student 4, it could be interpreted that student 5 improved chiefly in terms of content, organization, and vocabulary. All in all, student 5 got 72 over 100 which meant that he met the 60 percent passing grade.

Table 10: Student 6's Specific Scores in the Five Components Given by Three Raters

Skills/Components	Rater 1	Rater 2	Rater 3	Average	Interpretation
Content (30 points)	21	25	24	23	GOOD TO AVERAGE
Organization (20 points)	16	15	15	15	GOOD TO AVERAGE
Vocabulary (20 points)	18	13	15	15	GOOD TO AVERAGE
Language Use (25 points)	15	17	16	16	FAIR TO POOR
Mechanics (5 points)	4	3	4	4	GOOD TO AVERAGE
TOTAL	74	73	74	74	PASSING

Note: Table 10 shows the specific scores in the five components given by three raters for Student 6.

Student 6's scores from content to mechanics were interpreted as Good to Average, whereas his score in language use was fair to poor. It could be interpreted that student 6 improved mostly in terms of content, organization, vocabulary, and mechanics. Student 6 achieved 74 over 100 which meant that he surpassed the 60 percent passing grade.

Table 11: Student 7's Specific Scores in the Five Components Given by Three Raters

Skills/Components	Rater 1	Rater 2	Rater 3	Average	Interpretation
Content (30 points)	20	20	19	20	FAIR TO POOR
Organization (20 points)	15	17	13	15	GOOD TO AVERAGE
Vocabulary (20 points)	17	13	15	15	GOOD TO AVERAGE
Language Use (25 points)	14	17	20	17	FAIR TO POOR
Mechanics (5 points)	4	3	3	3	FAIR TO POOR
TOTAL	70	70	70	70	PASSING

Note: Table 11 shows the specific scores in the five components given by three raters for Student 7.

Student 7's scores from organization to vocabulary were interpreted as Good to Average, whereas his scores in content, language use, and mechanics were fair to poor. It could be interpreted that student 7 improved in terms of organization, and vocabulary. Generally, student 7 still obtained 70 over 100 which meant that he passed the 60 percent passing grade.

Table 12: Student 8's Specific Scores in the Five Components Given by Three Raters

Skills/Components	Rater 1	Rater 2	Rater 3	Average	Interpretation
Content (30 points)	20	25	21	22	GOOD TO AVERAGE
Organization (20 points)	18	17	16	17	GOOD TO AVERAGE
Vocabulary (20 points)	16	17	16	16	GOOD TO AVERAGE
Language Use (25 points)	16	17	19	17	FAIR TO POOR
Mechanics (5 points)	4	3	4	4	GOOD TO AVERAGE
TOTAL	74	79	76	76	PASSING

Note: Table 12 shows the specific scores in the five components given by three raters for Student 8.

Student 8's scores from content to mechanics were interpreted as Good to Average, whereas his score in language use was fair to poor. Therefore, it could be interpreted that student 8 improved most in terms of content, organization, vocabulary and mechanics. Student 8 got 76 over 100 which meant that he passed the 60 percent passing grade.

Table 13: Student 9's Specific Scores in the Five Components Given by Three Raters

Skills/Components	Rater 1	Rater 2	Rater 3	Average	Interpretation
Content (30 points)	22	26	21	23	GOOD TO AVERAGE
Organization (20 points)	18	17	17	17	GOOD TO AVERAGE
Vocabulary (20 points)	16	13	15	15	GOOD TO AVERAGE
Language Use (25 points)	15	14	19	16	FAIR TO POOR
Mechanics (5 points)	4	3	4	4	GOOD TO AVERAGE
TOTAL	75	73	76	75	PASSING

Note: Table 13 shows the specific scores in the five components given by three raters for Student 9.

Student 9's scores from content to mechanics were interpreted as Good to Average except for his score in language use that was fair to poor. It could be interpreted that student 9 improved primarily

in terms of content, organization, vocabulary, and mechanics. Overall, student 1 obtained 75 over 100 which meant that he achieved a score beyond the 60 percent passing grade.

Table 14: Student 10's Specific Scores in the Five Components Given by Three Raters

Skills/Components	Rater 1	Rater 2	Rater 3	Average	Interpretation
Content (30 points)	24	27	26	26	GOOD TO AVERAGE
Organization (20 points)	13	17	16	15	GOOD TO AVERAGE
Vocabulary (20 points)	17	17	15	16	GOOD TO AVERAGE
Language Use (25 points)	21	18	19	19	GOOD TO AVERAGE
Mechanics (5 points)	4	4	4	4	GOOD TO AVERAGE
TOTAL	79	83	80	81	PASSING

Note: Table 14 shows the specific scores in the five components given by three raters for Student10.

Student 10's scores from content to mechanics were interpreted as Good to Average. Thus, it could be interpreted that student 9 improved primarily in terms of all the writing components namely content, organization, vocabulary, language use, and mechanics. Overall, student 10 got 81 over 100 which meant that he exceeded the 60 percent passing grade.

Table 15: Student 11's Specific Scores in the Five Components Given by Three Raters

Skills/Components	Rater 1	Rater 2	Rater 3	Average	Interpretation
Content (30 points)	21	22	22	22	GOOD TO AVERAGE
Organization (20 points)	15	13	14	14	GOOD TO AVERAGE
Vocabulary (20 points)	13	13	13	13	FAIR TO POOR
Language Use (25 points)	14	10	17	14	FAIR TO POOR
Mechanics (5 points)	4	3	3	3	FAIR TO POOR
TOTAL	67	61	69	66	PASSING

Note: Table 15 shows the specific scores in the five components given by three raters for Student 11.

Student 11's scores from content to organization were interpreted as Good to Average except for his scores in vocabulary, language use, and mechanics that were fair to poor. It could be interpreted that student 11 improved most in terms of content and organization. Yet, student 11 obtained 66 over 100 which meant that he still passed the 60 percent passing grade.

Overall, it can be said that most of the writing weaknesses of the students specifically content, organization, vocabulary, and mechanics significantly improved with an interpretation of Good to Average. In essence, it could be inferred that blog-assisted feedback aided the students in enhancing their content, organization, vocabulary, and mechanics in writing proving Zhou (2015) and Özdemir and Aydin's (2015) claim that the blog-assisted writing improves students' writing skills, and that blog-assisted process writing aids students overcomes some of the challenges of students' writing. On the other hand, only 1 out of 10 students obtained an interpretation of Good to Average in terms of language use. In this regard, it could be interpreted that the rest of the students still needed to strive improving their grammar in writing. Nevertheless, all of the 11 students apparently improved in terms of content, organization, vocabulary, language use and mechanics. Generally however, it is important to note that students' writing skills improved more particularly in content, organization, vocabulary, and mechanics improved. Improvement in vocabulary or lexico-grammar confirms Gedera's (2012) claim that peer feedback through blogging improves students' writing in the lexico-grammatical level.

4.4 Students' Attitudes towards Writing after the Blog-assisted Feedback

Students expressed blogs' provision of motivation to write and found blogging as novel and convenient platform for writing.

Provided with motivation to write, the students were delighted of writing because they found value in blogging. Various personal benefits as expectations to oneself arose from the students. For students, blogging was interesting, and it made them motivated to write.

Blog extract from Student 3 12:19 PM on November 09, 2016

My motivation to write is the computer...

Student 3 expressed that his motivation was the computer. The researcher realized that at least student 3 found a sense of an increase in terms motivation. This supported Gedera (2012) and Sun and Chang's (2012) findings that blogs increase students' motivation to write as blogs are operated online and that students nowadays are engaged in the internet.

Blog extract from Student 1 11:31 AM on November 09, 2016

> *Today I think writing is not a very boring task …today writing for me is interesting because i can say whatever i want through writing... This blog is challenging me to write a correct grammar and correct composition of words…*

Student 1, on the other hand, posted that writing was not boredom but a challenge for him to write with accurately. It can be deduced that the blogging task assigned of the students was reasonably manageable yet motivating.

Blog extract from Student 1 11:31 AM on November 10, 2016

> *With this kind of writing, i can enjoy writing even i am not good at it. I can enjoy writing even my grammar is not good. Last term and last last term, i did not enjoy writing… But now, i am enjoying it, it not just because of computer but because of the teaching techniques that you used to teach us.*

In addition, student 1 declared that with blogging as a kind of writing, he could enjoy writing despite of not being good at it and not being good in terms of grammar. In comparison with student 3, student 2 revealed that he was enjoying writing because of the use of blogging.

Blog extract from Student 4 12:09 PM on November 10, 2016

> *...I can challenge myself to write in effective way and also I can motivate myself to build an essay because I can write faster in this blogging site than making an essay on a paper… In making an essay, I feel free and motivated because when I'm in front of the computer I feel relax and my mind is working as well.*

As student 3 and 1, student 4 similarly revealed that he felt motivated since he was in front of the computer. Moreover, he became motivated because it was faster to write on the blog contrary to writing on the paper. Writing faster may be a product of the features of computers such as efficiency of use in terms of correcting syntax of sentences, recasting incorrect orthographies, etc. More surprisingly, student 4 felt free and relaxed and his mind was working well when in front of the computer. Contrary to Lin, Lin, and Groom (2013) who realized that their students felt less

incentivized and perceived blog-assisted language learning as unduly distracting because of the online classroom setting, student 4 in the current study became focused as his mind was working well, relaxed, and free. This might be because student 4 and other participants' were given time to navigate or explore the class blog before the treatment period. Therefore, they have established already a sense of familiarity with the online setting. In addition, the students in the current study had learned English as their L2 in a lengthier time since pre-school up to college whereas Lin, Lin, and Groom's students were Taiwanese who were learning the English as a foreign language. Since Lin, Lin, and Groom's study had the students instructed in English, they likewise seemed to get a hard time of making sense of the blog-assisted language learning experience unlike student 4 of the present study.

On the other hand, student 2 seemed to have illustrated more trustworthiness in expressing motivation to write since he voiced it out in the composing and publishing stages.

Blog extract from Student 2 11:52 AM on November 11, 2016

> *...All of these activities made me more interested in writing... Once that I'm done here, I hope I can create and compose more essays, reflection and stories. I hope there's more writing challenge for me to come...I won't forget these blog, because writing became my hobby.*

Student 2 conveyed that all of the activities made him interested in writing. In link with this, a couple of personal expectations arose supporting his interest to write that was chiefly his hope of having more writing challenges, composing more essays, not to mention writing reflections and stories. Blogging became his hobby, an interest during academic writing class.

Blogging for the students became motivating so their writing was. Hunt and Milsom (2011) claimed that motivation to write is one of the significant aspects in becoming successful writers. Relative in making a proficient writer, positively affective, behavioral, and cognitive motivations towards writing were conveyed by the respondents.

Finally, the students found that blogs are a novel and convenient platform for writing. Though blogs are not really new, the integration of blogs into the course left the students remarkable experiences different from the traditionally non-online academic writing class. Lin, Lin, and

Groom (2013) interpreted that many students perceived blogs as novel because their online posts are published in an online public setting. The novelty and convenient effect of the blog-assisted feedback emerged in the feedbacking, editing, and revising stages. Most of the students recognized performing these processes lightly that they were not really cumbersome because they perceived it as not hassling. They did not have to write on paper, write everything on it, and consume lengthy of time. Doing editing and rewriting was efficient or faster for them. Recasting their mistakes on the blogs was productive because students could easily delete and correct their mistakes. These are what Student 3 revealed.

> *Blog extract from Student 3 12:19 PM on November 10, 2016*
>
> > *In this session blogging is very useful to compose an essay, because we don't have a paper and ball pen to write. We all just need is our mind to think how to type a good enough persuasive essay.*

Student 3 stated that blogging was so advantageous since it did not require paper and pen. Thinking and typing were only necessary for writing the essay.

> *Blog extract from Student 5 12:22 PM on November 10, 2016*
>
> > *…Yes for me it is easy way to learn through blogging because we can be more relax and at the same way we are confident of it…Also i learn on how to improve my essay word simple but it is easy to understand...*

Student 5 found it convenient to learn in the blog since he felt just calm and confident as well in using it. Improving his essay was easy to be understood.

> *Blog extract from Student 1 11:13 AM on November 11, 2015*
>
> > *So feedbacking and editing can be done through blogging. This blog really helps in terms of writing my essay, because It is not hassle when you done anything wrong, you can edit it immediately…Editing and rewriting is easier here in blogging, because you can copy/paste your essay and delete your comments… It is faster that rewriting it in paper because writing in paper needs time and it is a tiring work. It is faster that rewriting it in paper because writing in paper needs time and it is a tiring work…*

Student 10 even realized that writing on blogs was much easier that expressing oneself face-to-face as shown below.

Blog extract from Student 10 11:50 AM on November 11, 2015

> *It is much easier to write daily on your blog rather than you are talking and speaking in front of the class or a group of people…I am able to communicate with my readers and classmates by posting my essays…*

Blog extract from Student 9 12:17 PM on November 11, 2016

> *It is an advantage for us because it easier to do and more comfortable and makes us concentration to our tasks…This blogging site also helps us to improve our essay than we write in the paper.*

Student 9 also found it convenient to use. He felt comfortable and got focused to the online tasks. Improving his essay was the advantage he got from it.

5. Conclusion and recommendation

Being able to fuse technology and second language pedagogy, this paper investigated the affordances of blog-assisted feedback in academic writing. First, students' weaknesses in and attitudes towards writing were identified. Second, blog-assisted feedback was implemented in the feedbacking, revising, and editing stages of students' writing. Third, the merits of blog-assisted feedback were presented. Lastly, students' attitudes towards writing after blog-assisted feedback were realized. Findings showed that most of the students had weaknesses in and almost all of them had negative attitudes towards writing. In academic writing, blogs-assisted feedback provided positive affordances such as virtual collaboration between peers, online correction of errors, record of writing development, and improvement of writing skills. These findings are actually either similar or different from the past researches; thus, they either advocate or void claims on the benefits of blogs in ESL writing classes. After the implementation of blog-assisted feedback, it was realized that it provides students the motivation to write, and functions as novel and convenient platform for writing. In lieu of the foregoing, conclusions have been formulated as follows.

1. Blog-assisted feedback helps in overcoming writing weaknesses of academic writing students in terms of content, organization, vocabulary, and mechanics. Though this is positive, it still cannot be readily assumed that it was actually the blog that made improvements in the writing of the students as there could be other variables that were absently taken into consideration. Özdemir and Aydin (2015) once clarified in their experimental study that blogs do not necessarily ensure students' improved writing performance. Supporting the foregoing, blog was just used as a mode or avenue in providing corrective feedback, and the original source was still humans, i.e. the students, and the teacher themselves. Therefore, nothing can beat the power of human effort as it is a pre-requisite in utilizing technology in L2 writing.
2. Blog-assisted feedback provides students estimable features, i.e. virtual collaboration between peers, online correction of errors, and record of writing development that influenced in the improvement of students' writing skills. However, it is also important to note that these features are actually possible through the support of the internet and school facilities. Without these, the said features may not be realized.
3. Blog-assisted feedback positively affects the students' negative attitudes towards writing; thus, it helps in reversing their apprehension to confidence in writing. It should be stated though that blogs have technicalities (Campbell, 2003), mentioned in the results and discussion, that are familiar to college ESL students, technicalities that perhaps influenced more their attitudes towards writing.

Like well-managed studies in L2 writing, the study had its limitations. The following are vital opportunities for future investigations. Careful anticipation of other variables (e.g., confounding) should be considered for future studies. The limited size of the participants may be underestimated compromising generalizability or trustworthiness. Future researchers may sample a larger number of participants. Confirmation checks may be used; therefore, other introspection instruments may be utilized like think-aloud protocols to make further validations of findings. The study's validity may be limited due to the study's duration; hence, data collection can then be made longer. While the current study concentrated on the macro-structure of academic writing, and the students' language use did not really improve, another study may be undertaken focusing on micro-structures such as verb and aspect system, subject-verb agreement, and the like. Other technologies

may be used, i.e. Facebook, Black Board Learn, to see variations, discover other angles, and contribute more affordances. Above all, however, the study has revealed positive affordances of blog-assisted feedback in improving college ESL students' academic writing skills and attitude towards writing, but certain factors have to be seriously controlled in future investigations. After all, it is worthy of recommendation that ESL academic writing teachers employ it in their academic writing classes, but utilizing it should be positively purposive.

References

Abu Bakar, N. A., & Ismail, K. (2009). Using blogs to encourage ESL students to write constructively in English. AJTLHE: ASEAN Journal of Teaching and Learning in Higher Education,1(1), 45-57. Retrieved from http://journalarticle.ukm.my/1481/

Aljumah, F. H. (2012). Saudi learners perceptions and attitudes towards the use of blogs in teaching English writing course for EFL majors at Qassim University. *English Language Teaching 5*(1), 100–116.

Atea, M., & Shawish, J. A. (2010). *An investigation of Palestinian EFL majors' writing apprehension: Causes and remedies.* Retrieved from ERIC database. (ED512894)

Baku, I.I. (2011). Blogs as cyberspace for collaboration. *Computer-Assisted Language Learning, 10,* 112–114.

Biber, D., Nekrasova, T., & Horn, B. (2011). The effectiveness of feedback for L1-English and L2-writing development: A meta-analysis (Report No. TOEFL iBt-14). Northern Arizona University: ETS TOEFL.

Black, N. P. (2009). Writing through online computers. *Computers and Composition, 8*(2), 47–52.

Blackmore-Squires, S. (2010). An investigation into the use of a blog as a tool to improve writing in the second language classroom. (Doctoral dissertation, Oxford Road, The University of Manchester, UK). Retrieved from http://asian-efl-journal.com/Thesis/Thesis-Squires.pdf

Bloch, J. (2007). Abdullah's Blogging: A generation 1.5 student enters the blogosphere. *Language Learning & Technology, 11*(2), 128–141.

Bump, J. (1990). Radical changes in class discussion using networked computers. *Computers and the Humanities, 24*(1), 59–65.

Campbell, A.P. (2003). Using live journal for authentic communication in EFL classes. *The Internet TESL Journal, 10*(9). Retrieved from http://iteslj.org/Techniques/Campbell-LiveJournal/

Educause Learning Initiative. (2005). *Seven things you should know about blogs.* Retrieved from http://www.educause.edu/eli/

Erkan, D. Y., & Saban, A. I. (2011). Writing performance relative to writing apprehension, self-efficacy in writing, and attitudes towards writing: A correlational study in Turkish tertiary-level EFL. *The Asian EFL Journal, 13*(1), 164–192.

Fageeh, A. (2011). EFL learners' use of blogging for developing writing skills and enhancing attitudes towards English learning: An exploratory study. *Journal of Language and Literature, 2*(1), 31–48. Retrieved from http://www.lit.az/ijar/pdf/jll/5/JLL2011(1-5).pdf

Farahian, M., & Rajabi, S. (2013). Trends affecting second language curriculum in the Third Millennium. *Modern Journal of Language Teaching Methods (MJLTM), 3*(3), 20-27.

Gayeta, M. S. (2002). *Improving the compositions of selected college students through process writing* (Unpublished master's thesis). Philippine Normal University, Manila, Philippines.

Gedera, D. S. P. (2012). The dynamics of blog peer feedback in ESL classroom. *Teaching English with Technology, 12*(4), 16–30. Retrieved from http://www.tewtjournal.org

Hunt, B. & Milsom, A. (2011). Academic writing: Reflections from successful counselor educators. *Journal of Humanistic Counseling, 50,* 56-59.

Hiradhar, P. (2013). Enhancing ESL learners' writing through technology. *Proceedings of the 2013 3rd International Conference on Languages, Literature, and Linguistics, Beijing, China, 68*(7), 30-36. doi: 10.7763/ipedr

Kutlu, O. (2013). Using technology for developing writing in an ESP class. *Procedia-Social and Behavioral Science, 70*, 267–271. doi: 10.1016/j.sbspro.2013.01.064

Ji, X. (2011). Topic effects on writing performance: What do students and their writings tell us? *The Journal of Asia TEFL, 8*(1), *23–38.* Retrieved from http://journal.asiatefl.org/main/main.php?main=1&sub=2&submode=2&inx_journals=27

Langan, J. (2011). *College writing skills with readings* (8th ed.). USA: McGraw Hill.

Liu, Y.W., & Chang, C.F. (2011). Blogging as mediated action in the development of two EFL teachers: An activity theory approach. *The Journal of Asia TEFL, 8*(4), 25–59. Retrieved from http://journal.asiatefl.org/main/main.php?main=1&sub=2&submode=2&inx_journals=30

Lin, J.T., & Kuo, C.H. (2011). Online peer conferencing in Academic Writing. *JALT CAL Journal, 7*(2), 121–136.

Lin, M. H., Lin, C. Y., & Groom, N. (2013). Blog-assisted learning in the ESL writing classroom: A phenomenological analysis. *Technology & Society, 16*(3), 130–139.

Ludvigsen, S. R., & Mørch, A. I. (2008). Computer-supported collaborative learning: Basic concepts, multiple perspectives, and emerging trends. *The International Encyclopedia of Education.* Retrieved from http://www.uio.no/studier/emner/matnat/ifi/TOOL5100/h09/undervisningsmateriale/papers/f5-oct1/CSCL_Research_LM_09.pdf

McDowell, D. (2004). Blogging in the K–12 classroom. In B. Hoffman (Ed.), *Encyclopedia of educational technology.* Retrieved from http://coe.sdsu.edu/eet/articles/bloggingtech/start.htm

Mallen, E. V. (2007). *Process approach: Teaching intervention towards writing competence* (Unpublished master's thesis). University of the Philippines, Diliman, Quezon City.

MCL Assessment and Evaluation Office. (2014). 2014 MCL Academic report (Report No. 006). Cabuyao City, Philippines: Author.

Nardi, B. A., Schiano, D. J., & Gumbrecht, M. (2004). Blogging as social activity, or would you let 900 million people read your diary? *Proceedings of the 2004 ACM conference on computer-supported cooperative work,* New York, 222–228.

Nepomuceno, M. M. (2011). Writing online: Using blogs as alternative writing activity in tertiary level classes. *TESOL Journal, 5*, 92–105.

Nunan, D. (1999). *Second language teaching and learning.* Boston: Heinle & Heinle.

Özdemir, E., & Aydin, S. (2015). The effects of blogging on EFL writing achievement. *Procedia-Social and Behavioral Sciences, 199,* 372–280. doi:10.1016/j.sbspro.2015.07.521

Sandolo, L. (2010). *How can the use of technology enhance writing in the classroom?* (Master's thesis). Retrieved from Fisher Digital Publications.

Scardamalia, M., & Bereiter, C. (1991). Higher levels of agency in knowledge building: A challenge for the design of new knowledge media. *Journal of the Learning Sciences, 1*(1), 37– 68.

Stahl, G. (2006). *Group cognition*. Cambridge, MA: MIT Press.

Stahl, G., Koschmann, T., & Suthers, D. (2006). Computer-supported collaborative learning: A historical perspective. In R. K. Sawyer (Ed.), Cambridge handbook of the learning sciences (pp. 409–426). Cambridge, UK.

Stanley, G. (2005). *Blogging for ELT*. Retrieved from http://www.teachingenglish.org.uk/think/resources/blogging.shtm

Stemler, S. (2001). An overview of content analysis. *Practical Assessment, Research & Evaluation, 7*(17). Retrieved from http://PAREonline.net/getvn.asp?v=7&n=17=

Sun, Y. V., & Chang, Y. J. (2012). Blogging to learn: Becoming EFL academic writers through collaborative dialogue. *Language Learning & Technology, 16*(1), 43–61.

Treadwell, D. (2010). *Introducing communication research: Paths of inquiry.* California, USA: Sage Publications, Inc.

Tribble, C. (1996). *Writing.* Oxford: Oxford University Press.

United States General Accounting Office. (1989). *Content analysis: A methodology for structuring and analyzing written material.* Retrieved from http://archive.gao.gov/d48t13/138426.pdf

Vygotsky, L.S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Vygotsky, L. (1986). *Thought and Language*. Cambridge MA: The MIT Press. Retrieved from http://dx.doi.org/10.1007/BF02928399

Yunus, M.M., Tuan, J.L.K., & Salehi, H. (2013). Using blogs to promote writing skill in ESL classroom. In A. Zaharim, & V. Vodovozov (Eds.), *Recent Advances in Educational Technologies: Vol. 3. 4th International Conference on Education and Educational Technologies (EET '13)* (pp. 109–113).

Zhang, Y., & Wildemuth, B. B. (2011). *Qualitative analysis of content.* Retrieved from http://www.ischool.utexas.edu/~yanz/Content_analysis.pdf

Zhou, H. (2015). An empirical study of blog-assisted EFL process writing: Evidence from Chinese non-English majors. *Journal of Language Teaching and Research, 6*(1), 189–195. Retrieved from http://dx.doi.org/10.17507/jltr.0601.23

THE ASIAN ESP JOURNAL

The effects of explicit academic vocabulary instruction in an English-mediated Educational Psychology on EFL learners' content knowledge

I-Chia Chou

Wenzao Ursuline University of Languages

I-Chia Chou is an associate professor at the Center for Teacher Education, Wenzao Ursuline University of Languages, Taiwan. She gained her PhD in Foreign/Second Language Teaching from Ohio State University. Her research interests are focused on second language teaching, English for academic purposes and literacy. She has published research findings related to reading behaviors and teacher education in a number of international journals.

Email: I-Chia Chou 98034@mail.wzu.edu.tw

Abstract

Extensive research has highlighted the influence of English as a medium instruction (EMI) on academic performance of EFL students. However, the lack of English language proficiency seems to be one of the crucial problems interfering with students' learning outcomes in EMI classes. The acquisition of academic vocabulary seems to be a fundamental skill, which will lead to the success of reading, listening and other skills. However, only a few studies have conducted empirical research to test the effects of academic vocabulary instruction on EFL students' learning outcome in EMI classes at the tertiary education level. This study examined the effects of academic vocabulary instruction on EFL students' academic performance in an EMI course in a university in southern Taiwan. This experimental study was carried out with 113 freshmen from two intact classes. The *t*-test results showed that students with explicit vocabulary instruction got significantly higher achievement scores than those without explicit vocabulary instruction. This suggests that explicit vocabulary instruction is an effective way to help EFL students learn in their academic disciplines.

Key words: English-Medium Instruction, explicit vocabulary instruction, EFL, higher education

Introduction

As English has become the dominant lingua franca for international conferences, global business, and academic research, English as a medium of instruction (EMI) has "sprung up like a mushroom" (Gundermann, 2014, p.3). The movement to include EMI in higher education started first among European universities. In recent years, an increasing number of Asian universities, such as those in Vietnam, Malaysia, Japan, and Korea, have adopted EMI. Observing this trend, the Taiwan Ministry of Education has instructed universities to make plans to use English as a medium of instruction in academic programs. However, such a widespread policy has raised some concerns about EMI.

Extensive research has highlighted the influence of EMI on the academic performance of English-as-a-foreign-language (EFL) students in higher education contexts. Some studies considered EMI valuable in improving students' English language proficiency (Aguilar & Muñoz, 2014; Chang, 2010; Hsieh & Kang, 2007; Wu, 2006), and in improving their learning attitude (Hsieh & Kang, 2007). However, other studies argued that EMI may not be effective because it imposes a high cognitive load (Sweller, Ayres, & Kalyuga, 2011). Studies investigating students' perceptions of EMI showed that in general they had difficulty in comprehending lectures due to their and the lecturers' limited language proficiency (Hellekjær, 2010; Ibrahim, 2001; Manh, 2012). Chang (2010), for example, surveyed Taiwanese students' attitudes toward EMI courses and found two factors influencing the effectiveness of EMI classes: (a) not all teachers are qualified to teach through English, and (b) the level of Taiwanese students' English proficiency varies greatly. Shohamy (2013) also questioned the linguistic competence of lecturers in academic disciplines to effectively deliver the content of their subject through the medium of a second language. Even if the lecturers are qualified to teach EMI courses, the courses benefit only a certain percentage of the students due to their low English proficiency. Most Taiwanese university students may have studied English in school for seven or more years; however, the limited curriculum time (3 hours per week) in most cases does not allow them to achieve a linguistic competence sufficient to pursue their subjects in English.

Poor English language proficiency seems to have become a crucial problem interfering with

students' learning outcomes in EMI classes. Knudsen and Westbrook (2013) suggested five areas that students need to develop to successfully participate in EMI classes, including vocabulary, reading skills, listening skills, oral skills, and writing skills. Among these five areas, the acquisition of academic vocabulary seems to be a fundamental skill that will lead to success in reading, listening and other skills. Students in Hsieh and Kang's (2007) study reported that their vocabulary was inadequate for EMI lecture comprehension. Consistent with the findings of Chia, Johnson, Chia and Olive (1999) and Evans and Green (2007), among the many problems causing students' reading difficulties, limited vocabulary (42%) and slow reading speed (33%) were the most frequently reported (p. 71). The findings show a link between EMI lecture comprehension and academic vocabulary acquisition. Without sufficient vocabulary, students suffer greatly in their lecture and reading comprehension. Thus, teaching academic vocabulary seems to be a promising pedagogical solution to help EFL students learn in EMI.

Previous studies investigating vocabulary teaching and learning basically follow two approaches: explicit and implicit. Explicit vocabulary learning engaged learners in activities that focus attention primarily on vocabulary whereas implicit vocabulary learning occurs when the mind of learners is concentrated elsewhere, such as on comprehending a written text or understanding spoken material (Marzban & Kamalian, 2013). Even though each approach has its own merits, explicit vocabulary instruction is conventionally considered more effective than implicit instruction on ELL students. As Sökmen (1997) pointed out, relying solely on implicit instruction to facilitate L2 vocabulary acquisition is problematic for several reasons. First, guessing words in context is likely to be a slow process. Second, students seldom guess the correct meanings. Third, even when students guess words in context, their comprehension may still be low due to insufficient vocabulary knowledge. In order for learners' vocabulary development to be optimized, they need a structured, systematic, and explicit instruction on specific and high-leverage words (Beck & McKeown, 2007; Beck, McKeown, & Kucan, 2002).

Significance of the Present Study

Even though numerous studies have been done on the importance of vocabulary learning on academic achievement, previous studies investigating academic vocabulary focus on two areas: (a) corpus study and its impact on academic writing (Flowerdew, 2015; Lee, 2003; Yang, 2015; Yoon & Hirvela, 2004) and (b) the impact of teaching vocabulary on K-12 students (August &

Shanahan, 2006; Calderon, et al., 2005; Lesaux, et al., 2010; Townsend & Collins, 2009). Few of them have conducted empirical research to test the effects of academic vocabulary instruction on EFL students' learning outcomes in EMI classes at the tertiary education level.

In addition, from a pedaggical perspective, explicit vocabulary instructions mentioned in previous studies tend to focus on lecture-centered methods (Ghannadi, 2010; Marzban & Kamakian, 2013; Sobul & Schmitt, 2009). It is usually the teachers' job to explain the target words or to provide definitions for learners to practice. Existing studies done in Taiwan also focus on this type of method (Hsu, 2010; Hsu & Hsu, 2007; Lien, 2003). The students' responsibility is to memorize the words (Ho, 2001; Lin, 2009). This approach as a result tends to emphasize more on the breadth of vocabulary knowledge (Cheng, 2005; Chou, 2011) instead of the depth knowledge. Although this method still results vocabulary knowledge gain, learners are passive knowledge receivers in this type instruction. Thus, implementing an interactive vocabulary instruction that focuses on the depth of vocabulary knowledge and its effects it may bring to EFL learners cannot be overlooked.

In the light of the need for empirical and pedagogical evidence, this study attempts to examine the effects of explicit academic vocabulary instruction on EFL students' academic performance of subject knowledge in an EMI course in a higher education context. The research questions used to guide this study are:

1. What is the effect of explicit vocabulary instruction on EFL students' performance of subject knowledge?
2. What is the effect of explicit vocabulary instruction on EFL students' attitudes toward the EMI class?
3. What is students' perception about explicit vocabulary instruction?

Literature Review

EMI Studies

Along with the growth of EMI in Asian countries, the effectiveness of courses taught in English has raised some researchers' concerns. The study of student attitudes is probably one of the most extensively researched (Dafouz, et al., 2015). Overwhelming findings have proved that most of the NNES students considered EMI an opportunity to improve their English proficiency (Aguilar

& Muñoz, 2013; Lasagabaster, 2008; Tamtam, et al., 2012; Wang, 2010). Wang (2010), for example, compared preferences of students from two Hong Kong senior secondary ESL classes for a medium of instruction and how their preferences related to English proficiency gained over time. Even though both classes were taught in English, only students in one class were penalized if any one spoke in languages other than English. The results showed that students in the English-only class had higher English skills and felt more confident in English than those in the class in which some minimal mother tongue could be used. Wong concluded that enforcement of a strict English-only policy has a positive impact on English learning.

In addition, Aguilar and Muñoz (2013) compared 205 graduate students' listening and grammar skills before and after the implementation of an EMI course for a semester. They found that gains in students' listening skills reached statistical significance. Students' self-perception of improvement in listening comprehension was also observed. The findings of this study, however, are questionable because the sample was reduced to 63 students by the end of the study. The reason for the reduction was not discussed in the study. Park (2007) compared pre- and post-test scores of 51 Korean university students who took a linguistics class taught in English. In her study, the students showed improvements in knowledge in the content area as a result of taking an EMI course. Further, more students expressed positive opinions about the English-medium lectures with regard to their improvements in reading and listening proficiency and vocabulary.

Similar findings were found in Taiwanese universities. Chang (2010) surveyed 370 students' reaction to EMI. The results reveal that although the students generally did not think that they had a high level of comprehension in their EMI lectures, most of them did not express negative attitudes towards the courses. Moreover, most of the students agreed that English instruction helped them improve their English language proficiency, especially listening skills. Yao (2004) investigated 317 undergraduate students and the results indicated that most participants believed that EMI was helpful in enhancing their English competence. Yao also collected students' English proficiency test scores. Most students enrolling in EMI made significant progress in listening comprehension and some in reading comprehension. In addition, Chen and Chen (2011) asked junior tertiary students about their attitudes toward EMI in a biological engineering course. About 42% of the students supported using English as the instructional medium. Finally, Hsieh and Kang (2007) looked at the effectiveness and influences of English-instruction for subject courses in

Taiwanese universities. They compared two groups of students: one group received instruction in Mandarin and the other group followed the same course taught in English. The results showed that there was no difference in grades between the two groups. However, students receiving EMI tended to show a more positive learning attitude. They also felt that their English proficiency in the four skills had improved.

However, some studies also reported negative attitudes of EFL students towards the implementation of EMI. A large-scale survey done by a Taiwanese university asked 1326 students from seven schools about their perceptions of EMI classes. Quantitative results showed that students overall would not recommend academic courses taught in English. Moreover, about 86% of the students would like to have summaries in Mandarin Chinese. Challenges reported from written feedback included: 1) academic knowledge is difficult even in Chinese, not to mention in English, and 2) lectures in English makes learning less effective. Even those with a higher proficiency level in general English courses reported that their language proficiency was still not advanced enough to learn academic content. In the same vein, Hengsadeekul et al. (2012) reviewed EMI-related literature done in a Thai context. The most common difficulty mentioned was the language proficiency issue. Students reported that instruction in English created too great a burden while attempting to comprehend their English lessons resulting in learning difficulties for them. Wu (2006) investigated students' attitudes towards EMI at a Taiwanese university. A survey was administered to 28 graduate students. Some advantages reported among this group of students were: helped improve English, gave more exposure to global views and international culture, provided opportunities for expression in English, and helped better understand English textbooks. Disadvantages mentioned were: made it difficult to understand the course content, prevented students from expressing themselves smoothly in class, discouraged discussion and interaction between professors and students.

Learning difficulties in EMI courses are sometimes not limited to students with low English proficiency. Students with high language proficiency can experience the same difficulties. As Bradfore (2012) pointed out, even students in countries with strong traditions of English-language instruction, such as Norway and the Netherlands, have reported concerns with unfamiliar vocabulary and trouble taking notes, while listening in English-medium classes. This is because academic English is a different genre from daily-used English. When learning academic subjects,

students need to acquire conceptual knowledge that involves specific terminology. Many researchers have compared students' learning outcomes between their learning in their local languages and in English. Yip et al. (2003), for example, investigated the impact of EMI on secondary school students' science learning in Hong Kong. Involving 25 EMI schools and 75 Chinese-Medium-Instruction (CMI) schools, they found that EMI students performed much more poorly than their Chinese-medium peers. EMI students experienced particular difficulties in mastering scientific terminology and developing higher cognitive skills and conceptual understanding of science subject matter, when compared with their CMI peers who learned science through their native language. Even students who were academically more able might not have had sufficient English proficiency to learn a content subject such as science in English. Marsh et al. (2000) compared the learning achievement of 12,000 EMI and CMI secondary school students in language subjects and content subjects for three years. The results showed negative effects on all subjects except English. Therefore, they concluded that learning content subjects in a second language was demanding for students because they had to master the basic terminology as well as develop conceptual understanding of the subject matter and comprehend the textbooks in English.

To aid successful implementation of EMI programs, institutions should direct attention to addressing these challenges. Among the difficulties mentioned, reading comprehension has always been the main concern. The reason for this is that comprehension of an English text is an important tool for obtaining information. University students, moreover, required to read English texts in EMI have to expand their vocabulary knowledge in a much more efficient way than ordinary ESL/EFL learners (Akbari, 2015). To promote L2 learners' literacy, embedding vocabulary learning into reading tasks is one of the most common teaching practices. Lorenzutti (2014) has suggested strategies like providing glossaries and highlighting key words in texts to support student comprehension in EMI classes. Morell et al. (2014) also called for more training courses for English for Specific and Academic Purposes. Unfortunately, limited attention appears to have been paid to examination of the implementation of academic vocabulary instruction in EMI courses in EFL contexts.

Academic Vocabulary

Academic vocabulary has been defined in many studies. Academic vocabulary words are typically

broken down into two categories: general and discipline-specific (Hiebert & Lubliner, 2008). In this study, academic vocabulary refers to discipline-specific words which are typically unique to individual academic disciplines. They are "the lexicon, concepts, and processes related to the content knowledge of a particular academic discipline" (Perrone, 2015, p. 61). Thus, they can be technical or abstract, and understanding them is essential to building conceptual knowledge in the disciplines in which they are used. Nagy and Townsend (2012) explained academic language as:

> [Academic language is] the specialized language, both oral and written, of academic settings that facilitates communication and thinking about disciplinary content. Academic language is specialized because it needs to be able to convey abstract, technical, and nuanced ideas and phenomena that are not typically examined in settings that are characterized by social and/or casual conversation. (p. 92)

Consequently, the acquisition of academic vocabulary is more complex than the high-frequency language one may learn through general English courses. This may present greater learning challenges to students. Some extensive research has highlighted the influence of academic vocabulary in overall scholastic development of monolingual English K-12 learners (e.g., Beck, McKeown, & Kucan, 2002, 2013; Philippot & Graves, 2009). Numerous studies have also shown that academic vocabulary plays a critical role in the overall academic success of English-language learners (ELLs) (Baumann & Graves, 2010; McKeown, Beck, & Sandora, 2012; Perrone, 2015; Yovanoff, Duesbery, Alonzo & Tindal, 2005).

Lesaux et al. (2010), for example, evaluated the implementation and effectiveness of an academic vocabulary program designed for use in mainstream middle school classrooms with high proportions of language minority learners. The finding showed that the intervention of such a program had a significant effect on learners' target knowledge of the words taught, knowledge of word meanings in context, and morphological skills. The researchers concluded that text-based academic vocabulary teaching is a promising approach for improving early adolescents' vocabulary and comprehension (p. 220). Kharaghani and Ghonsooly (2015) examined the role of vocabulary in increasing the level of reading comprehension and motivation of ELLs in an Iranian university. The results showed that there was a positive relationship between vocabulary

knowledge and the level of motivation in reading comprehension skill. Wang et al. (2015) conducted an experimental study to investigate the effect of teaching vocabulary through an iPad App in two freshman English classes in a Taiwan university. The instructor used the iPad "Learn British English WordPower App" to teach English vocabulary. Students were able to see words, word pictures, and example sentences through a classroom projector. This vocabulary teaching lasted about 15 minutes each time. After a semester, students who received the iPad vocabulary teaching performed better on the post-test. In addition, students in the experimental group also reported they felt motivated, delighted, and interested in learning English. Despite a great deal of vocabulary studies, little attention has been paid to the effects of academic vocabulary instruction on learners' performance in academic disciplines other than in the English-language classrooms. Even less research has been done in Taiwan (Lin, 2006; Wang, Teng, & Chen, 2015).

Implicit versus explicit vocabulary instruction

Empirical studies of vocabulary instruction can be divided into two main categories: implicit and explicit vocabulary instruction. According to Sökmen (1997), implicit instruction refers to the top-down approach, which emphasized incidental learning of vocabulary. L2 learners recognize clues in context and infer word meaning from context. Hulstijn (2001) defined incidental learning as "a by-product of the learner being engaged in a listening, reading, speaking or writing activity" (p. 266). Some educators have advocated the use of extensive reading to conduct implicit vocabulary learning. A majority of Taiwanese vocabulary studies also prefer to use this method to increase English learners' vocabulary size (e.g., Chang, 2010; Chuang, 2011; Dai, 2014; Hsu & Lee, 2007).

However, some researchers have argued that although indirect vocabulary exposure serves an important role to foster learners' recognition of new words, it may not be sufficient for learners to succeed in academic contexts. Wesche and Paribakht (1994), for example, compared the increase in word acquisition of intermediate level adult ESL students under the two teaching approaches. The results showed that students who were simply doing extensive reading made smaller increases than those who read and completed accompanying vocabulary exercises. A later study of Paribakht and Wesche's (1997) again showed that students under the "reading + vocabulary exercises" treatment resulted in a larger quantity and deeper quality of vocabulary knowledge than those under a "reading-only" condition. In Marzban and Kamakian's (2013) study, learners who received

explicit instruction performed better on knowledge gain of words as compared with those who received implicit instruction. As Sökmen (1997) pointed out, more and more research points to the ineffectiveness of just using implicit vocabulary instruction. On one hand, implicit or incidental vocabulary learning is most effective if learners can be exposed to high-frequency words. However, academic vocabulary is discipline-specific; learners encounter academic terminology less frequently and use them less in communication. On the other hand, implicit vocabulary instruction helps increase the breadth of vocabulary knowledge in reading. However, academic terminology is specialized because it needs to be able to convey abstract, technical, and nuanced ideas and phenomena that are not conventionally used in a daily situation. The depth of vocabulary knowledge is required in academic contexts. Explicit teaching hence can be a critical role in improving academic vocabulary for EFL learners.

Taiwanese educators prefer using word lists for explicit vocabulary instructions (Hsu, 2010; Lin, 2009; Lu, 2004). Hsu (2010), for example, provided lexical collocation lists with the Chinese equivalences to students. Students were requested to compose a sentence by using a target collocation or word. Kuo and Ho (2012) compared the effects of a word card strategy versus a word list strategy on Taiwanese EFL junior high school students' vocabulary retention. Lu (2004) reported that a bilingual word-list group of 31 EFL students significantly outperformed their counterparts learning through implicit vocabulary learning. Yet, this word-list type of method has its limitations. First, academic terminology may not have understandable L1 equivalences. Even if students are given L1 translation, the translation may not make sense to students. Second, this method emphasizes the teachers' lectures and students' memorization. Implementing a learner-centered and interactive type of instruction is therefore needed.

Some researchers have suggested different ways of conducting vocabulary instruction. Marzano (2004), for example, listed eight characteristics of vocabulary instruction which provided a guide for early literacy instruction at the middle or secondary level. Jack (2015), further, proposed some instructional principles for effective vocabulary instruction. For instance, terminology should be presented in the context and have a high probability of enhancing academic success. Similar principles were mentioned in Perrone's (2015) article. He pointed out that teachers should select words that are essential for comprehension. In addition, students should discuss the words they are learning. Students In a pilot study conducted by Zimmerman (1997), 35 ELL students preparing

for university entrance were divided into two groups. Students in both groups were instructed in reading, composition, oral language, and academic skills. The only difference in the instruction of the two groups was that the experimental group received interactive vocabulary instruction. The results showed that interactive vocabulary instruction accompanied by course-related reading led to gains in vocabulary knowledge. The present study tried to integrate those principles when designing explicit vocabulary instruction in the study. More details regarding the intervention will be explained in the next section.

Research Methods

Research Design

This quasi-experimental study was carried out with 113 freshmen at a Taiwanese university from two intact classes (59 from Class A and 54 from Class B). The students in this particular program were expected to become English teachers in the future. Thus, all courses offered in this department were taught in English. The course in which this study was conducted was a required course, Educational Psychology. The age range of the students was from 18 to 20 years. The majority of them were female students; there were only 16 males (8 from each class).

This was a required course offered in the second semester of the freshman year. Therefore, students in general had taken at least two EMI courses in their first semester. The students were randomly assigned into experimental (N=59) and control (N=54) groups. Both groups were taught by the same instructor to minimize the influence of teachers' teaching characteristics or personality on students' learning. The teaching content covered throughout the semester was the same in both classes. The only difference in the instruction of the two groups was that the experimental group received explicit vocabulary instruction while the comparison group did not.

The steps of explicit vocabulary instruction used in this course were adapted from previous studies (Jack, 2015; Marzano, 2004; Perrone, 2015). Because teaching principles and procedures mentioned in previous studies focused mainly on K-12 settings, only those suitable for undergraduate students in academic contexts were applied. Different from a lecture-based approach, the instruction design in this study focused on a learner-centered and interactive approach. The steps of explicit vocabulary instruction are described as follows:

1. Describe: The instructor listed content-specific words (8-10 words) in the up-coming lesson content and asked the students to find the meaning of each word prior to the lesson. The academic words were selected purposefully because they were essential for understanding the main concepts associated with a theory (Nisbet & Tindall, 2015). The students could find the definitions from the textbook or from Internet sources.
2. Restate: In class, the students shared the definitions they had found with their group members. After group discussion, the students were picked randomly to share their understanding of the terminology. The instructor then clarified or explained again using ELL-friendly definitions.
3. Deepen vocabulary understanding: The students were given tasks or activities designed to enhance their depth of word knowledge. For example, when learning the meanings of the two terms *assimilation* and *accommodation*, students would be asked to give real-life examples for each term. Sometimes the students would be asked to find synonyms, antonyms, or associated words to help them understand and memorize the terms. For example, when learning the two terms *insecure-avoidant* and *insecure-ambivalent*, students may associate the terms with the words they had learned, avoid and ambiguous, to reinforce their understanding of the definitions.

Procedure

Both classes were taught by the same instructor to minimize the instructor variable. The course period was three hours per week for each class. In the experimental group, the instructor usually spent 30 to 40 minutes on academic vocabulary instruction. In the control group no explicit vocabulary teaching was implemented. However, the instructor would find some real-life examples and videos to help students understand educational theories. Thus, even though students in the control group did not spend time learning vocabulary explicitly, they had more time reviewing and deepening their understanding through examples and videos. More details about teaching procedure of each class are explained in the next section.

Experimental Group (Explicit Vocabulary Instruction, EVI)

In the experimental group (N=59), the instructor uploaded a term worksheet before a new theory was taught. In the classroom, the instructor gave students 8 to 10 minutes to discuss word meanings with group members. Then the instructor randomly selected groups to present their word definitions. The presenting groups wrote their definitions on the board so that the whole class could see their answers. After that, the instructor would go through the answers, and correct or clarify if necessary. This usually took about 10 minutes. Another worksheet was then given to the students to help deepen vocabulary knowledge. Students usually spent about 10 to 15 minutes to finish the given activity or task collaboratively. The instructor would collect the second worksheet to evaluate students' understanding of the terminology.

After teaching terminology, the instructor started lecturing from the textbook content and explaining the theory. The detailed teaching procedure will be explained in the control group section. When lecturing, the instructor would also point out words in the textbook to remind the students that they had learned those words. In addition, students' term worksheets were collected at two points. One was collected after the midterm examination and one after the final examination. The students were told that the worksheets would be graded so that they might be more diligent in learning the terminology.

Control Group (No Explicit Vocabulary Instruction, NEVI)

In the control group (N=54), the instructor started a new theory by giving students some lead-in questions. Students worked in groups to find out answers related to the theory. After group discussion, the instructor would lecture from the textbook content and explain the theory. After teaching, the instructor would ask the students to go back to their lead-in questions and correct their answers if necessary. The instructor further randomly selected groups to present their answers. Up until this step, the teaching procedure was the same as that used in the experimental group. However, in the control group, the instructor would move on lecturing the content of the lesson. She would point out some key words or academic vocabulary in the textbook while going through the content. However, no explicit vocabulary instruction was given. Another difference in this group was the use of videos and real-life examples. After the lecture, the instructor would show students some videos or written cases. Students in groups needed to analyze and explain the

given cases using the theory they had learned. The answers were given after the students orally reported their discussion results. During this activity, the instructor may share her own experience with the class. When she was talking about her experience, she occasionally switched languages between Mandarin Chinese and English. She randomly inserted Chinese words in her English experience-sharing monologue. In other words, this code-switching behavior occurred only when the instructor tried to tell her own experience. She did not code switch when lecturing or explaining the theories nor did she use Mandarin to clarify content knowledge. Thus, the instructor's occasional use of Mandarin was still consistent with EMI methodology.

Data Collection and Analysis

The dependent variable, students' subject-matter knowledge, was measured based on the students' midterm and final scores. In other words, the test scores were treated in their entirety as the indicators of students' subject knowledge. The examination scores were compared using independent *t*-test. In the midterm and final exams, three types of questions were included: multiple choice (60%), matching (15%), and short-answer questions (25%). The instructor carefully designed the exam questions to avoid testing direct term definition (a short-version of the exam sample can refer to Appendix A). Since the purpose of the implementation of EVI was to facilitate the students' understanding of subject knowledge, asking students to recite term definition may not be an appropriate way. For example, the students were given an example of classical conditioning. They needed to identify the four elements (unconditioned stimulus, unconditioned response, conditioned stimulus, and conditioned response) in the example. The same type of question was used in matching. For example, children's reactions in the Strange Situation (Ainsworth et al., 1971) were given. Students needed to match the right type of attachment type with the reaction. As for short-answer questions, two types of questions were usually given. One asked students to recite basic concepts of theory, such as "What are Piaget's four developmental stages and the corresponding age range?" or "What are Erikson's eight stages of life and what is the core ego strength of each period?" The other type of questions tested students' higher level of thinking. For example, a question would ask students to compare the differences between classical conditioning and operant condition. Or a situation was given and the students needed to comment on that situation from Rousseau's viewpoint. All of the questions in the exams were written in English and students also needed to respond in English.

An attitude questionnaire was distributed after the final exam but before the students received their final grades using an online survey. This 5-point Likert scale questionnaire (with 1=strongly disagree and 5=strongly agree) contained 10 statements and one open-ended question. This questionnaire was designed by the University for evaluating students' attitudes toward EMI courses offered around the school. The validity of the questionnaire was tested by using a panel of experts to determine its face validity. The reliability of the questionnaire was computed using Cronbach's alpha and the results showed a good reliability (r=.88). The questionnaire was in the students' mother language (Mandarin Chinese) and respondents were anonymous. The response rate was 97% from the EVI group and 98% from the NEVI group, but the rate of valid questionnaires was 75% from the EVI group and 89% from the NEVI group. The results of the attitude questionnaire were computed by using descriptive statistics and independent *t*-tests. Answers from the open-ended question were analyzed by using a theme-based approach. In other words, the students' responses were selected and used to provide explanation for the quantitative results.

Students' perception of explicit vocabulary instruction was collected from an interview. 4 students volunteered to participate in this interview. The interview was conducted after the final exam but before the semester ended. In addition, the researcher interviewed the students without the presence of the instructor and allowed the interviewees came in a group so that the students would not feel nervous or intimidated. The interview was conducted more like an informal conversation about the students' opinions regarding the vocabulary instruction. Note-taking and audio recording were used with the interviewee's permissions to collect interview data. Interviews were conducted in the interviewee's first language. The recorded interview data were later transcribed verbatim. The interviews conducted in interviewees' first language was transcribed in that language first and translated into English by the researcher. The original and translated transcriptions were presented to the interviewees for member-checking purposes. The interviewees were free to comment on the expressions and translations and make suggestions.

Results and Discussion

A total of 113 freshmen (M=16, F=97) enrolled in the Educational Psychology course participated in this study. Students at this university were required to take an English proficiency test (College

Student English Proficiency Test, CSEPT) one week before the first day of school. A perfect CSEPT score is 360 (see Appendix B for the comparison table of other proficiency tests). Because this test was taken before the school started, some data would be missing if the students did not attend the test. As seen in Table 1, students in the NEVI group had a slightly lower English proficiency than those in the EVI group. However, the difference was not significant ($t(93)=.95$, $p=.34>.05$). In other words, students' English proficiency was similar in the two groups.

Table 1: Students' CSEPT Scores

Groups	N	Mean	Std. Deviation
EVI	49	223.76	45.99
NEVI	46	214.52	48.62

In addition to students' English proficiency, the students' grades from one of the required EMI courses that they had taken in the first semester were compared. This course was chosen because it was taught to the two groups by the same instructor. Therefore, the requirements and the grading standard were the same between the two groups. The students' end-of-semester grade points were compared using *t*-test and there was no statistically significant difference ($t(107)=.41$, $p=.68>.05$).

To answer research question 1, the independent *t*-test was used to compare students' midterm and final scores between the two groups. As shown in Table 2, no significant difference in midterm scores was found between the two groups suggesting that students' academic performance was not much different between the two groups in the first-half of semester. However, a statistically significant difference was detected in the final scores between the two groups. The statistic results indicated that students who received explicit vocabulary instruction had statistically significantly higher scores (57.76±8.37) on their achievement test at the end of a semester compared to those who received traditional lecture instruction (49.28±18.36), $t(73)=2.87$, $p=.005$. The effect size was also computed and the result showed a medium effect size with Cohen's $d=0.5$.

Table 2: Results of Independent *t*-test for on Students' Midterm and Final Grades.

	Class	N	Mean	SD	t	df	*p*-value
Midterm	EVI	59	53.41	15.38	.59	111	.56
	NEVI	54	51.76	14.35			
Final	EVI	59	57.08	8.37	2.87	73	.005*
	NEVI	54	49.28	18.36			

*$p<.05$

To answer research question 2, the independent *t*-test was used to compare mean differences in students' attitudes toward the EMI class between the groups. The result presented in Table 3 showed a significant difference in students' attitude toward the EMI course between the two groups. The mean scores showed that students in the EVI group had a less positive attitude (M=3.98) toward the EMI course compared to those in the NEVI group (M=4.38). This suggests that the students in the EVI group had a statistically less positive attitude toward the EMI course compared to the students in the NEVI group.

Table 3: Independent *t*-test on Students' Attitude Toward the EMI Course

	Mean	t	df	Sig.
EVI	3.98	-2.58	93	.01
NEVI	4.38			

However, students overall did not have a negative attitude toward the EMI course. When looking at the descriptive results of each statement, similar and different attitudes are evident between the two groups (Table 4). What is similar is that the three lowest attitude points in the two groups are located at questions 3, 4, and 5. In other words, more students tended to disagree that an EMI course was easy to understand or an EMI course helped them understand subject matter. As for the differences, students in the EVI group agreed or strongly agreed that the content was rich and the EMI course helped them improve English. They also thought that the assigned homework was helpful. Students in the NEVI group also agreed or strongly agreed with the previous two statements. Moreover, they felt more satisfied with the instructor's way of teaching than students in the EVI group. They also thought that the way of teaching was helpful to them.

Table 4: Descriptive Results of Students' Attitude in the Two Groups

Statement	Group	Mean	Std. Deviation
1. Course content is rich.	EVI	4.09	.88
	NEVI	4.44	.62
2. EMI helps me improve my English	EVI	4.09	.78
	NEVI	4.42	.71
3. EMI course is easy to understand.	EVI	3.89	.89
	NEVI	4.31	.75
4. EMI course increases my interest in learning the subject.	EVI	3.85	.96
	NEVI	4.29	.71
5. EMI course helps me understand the subject.	EVI	3.87	.95
	NEVI	4.25	.79
6. I participated actively in class.	EVI	4.00	.81
	NEVI	4.40	.64
7. The assigned homework motivates me to study.	EVI	4.02	.77
	NEVI	4.33	.72
8. The ways of teaching help me study this course.	EVI	4.00	.83
	NEVI	4.44	.62
9. I'm satisfied with the teacher's teaching approach.	EVI	4.00	.81
	NEVI	4.48	.62
10. I recommend others to take an EMI course.	EVI	4.00	.93
	NEVI	4.42	.65
Overall	EVI	3.98	.84
	NEVI	4.38	.66

Questionnaire number: EVI = 47; NEVI = 48

One open-ended question asking students' opinions regarding the course was included in the questionnaire. Eleven students from the EVI group and nine students from the NEVI group responded to this question. All of the students agreed that the instructor did her best to make this subject comprehensive and understandable. One student from the EVI group wrote:

> The worksheets the instructor provided were very useful. The academic vocabulary helped me review when preparing for the exams.

Another student from the NEVI group also commented on the instructor's hard work, saying that

"the instructor used some videos and examples to help me understand the theories." However, students overall still thought that the content was too difficult to learn in a foreign language. One student from the EVI group mentioned that she or he hoped the instructor could provide a Chinese translation for the terminology. In the same vein, another student commented that English explanation of terminology sometimes was difficult to understand and that a Chinese explanation would be better. Students from the NEVI group also suggested that the instructor should use Chinese more often.

Interview data were used to interpret the students' perception about EVI. All four students valued this teaching method. One student mentioned that understanding academic terminology helped her understand the lecture and comprehend textbook content. One student compared her experience in this class with her other EMI courses describing that her previous EMI learning as an overwhelming experience:

> In other EMI courses, I was always very busy trying to write down everything the teacher had said or showed on the PowerPoint. I put a lot of effort to study those courses but my grades were not good. In this course, even though the content was much more difficult than previous ones, I felt that I could understand the content much better. My studying also became more effective. I guessed this may be because I previewed the content when looking for the word definitions. When I was in class, I had much better understanding of the content.

One student also agreed with her saying that:

> Since I knew word meanings, I could focus on the teacher's lecture. I did not have to listen to the lecture and at the same time tried to find the word in the textbook.

When being asked which step they enjoyed most, all four students liked the second step. One student explained:

> In the first step, we needed to find the definitions by ourselves. Very often, we did not really know whether our definitions were correct. It was very frustrating. So I liked to discuss with my group members. Of course my group members sometimes argued with one another about the correct definition. However, I could check my

> understanding again through discussing with my group members. After that, the instructor would also explain. I could then confirm or modify my own understanding of the word.

Another student also mentioned that she had never experienced this type of vocabulary learning before. Finding the definitions and discussing with other classmates helped her think critically.

> When being asked what suggestions they would propose to this instruction, three out of four students slightly complained that this instruction required them to do more work than just sitting and listening to the instructor. They also felt that discussing with group members sometimes was time consuming because no one knew whose definition was the correct one. In addition, at the third stage, the instructor tended to verbally explain or clarify. All four students wanted the instructor to give them correct definitions and examples in black and white so that they knew the "teacher-approval" answers.

Discussion

This study investigated the effects of EVI intervention on the academic learning outcome of EFL university students in an EMI course in a university in southern Taiwan. Although the size of the data is relatively small, the results seem to be promising. Results of the three research questions are discussed as follows:

Research question 1: What is the effect of explicit vocabulary instruction on EFL students' performance of subject knowledge?

The results show that the participants who learned through EVI demonstrated better understanding of subject knowledge in an EMI course than their counterparts who did not. This indicates that explicit vocabulary instruction not only benefits ELL learners as previous studies have shown (Bauman & Graves, 2010; Lesaux et al., 2010; McKeown et al., 2012; Perrone, 2015; Yovanoff et al., 2005), but also helps increase EFL students' subject-matter knowledge in an EAP context. On the other hand, the students in the NEVI group performed relatively poorly in comparison with their EVI peers. This finding indicates that indirect vocabulary exposure may not be sufficient for EFL learners to succeed in EAP contexts (Huang, 2004; Lee & Muncie, 2006). The result

highlights the importance of teaching academic terminology in an EAP context. Academic words are discipline-specific and related to the content knowledge of a particular academic discipline. Therefore, when the participants were engaged in explicit vocabulary learning, they learned not only the meaning of terminology but also the concept embedded in it. Their subject-matter knowledge hence increased.

The other possibility of the improvement of the participants' subject-matter knowledge may be because of the instruction method. The participants in the EVI group needed to take an active role in learning the academic vocabulary through finding the conventional meanings, discussing, and paraphrasing. The students in the NEVI group, on the other hand, passively received information from the teacher. As Jack (2015) has proposed, an effective vocabulary instruction should give students the opportunity to interact with other classmates in discussion about a word. In doing so, the likelihood that they will retain the knowledge of a new term will increase (p. 41). As a result, although the exam questions avoided directly testing the meanings of the terminology, the participants' understanding of academic terminology was able to reflect on the improvement of subject-matter knowledge.

Research question 2: What is the effect of explicit vocabulary instruction on EFL students' attitudes toward the EMI class?

When looking at the effect of explicit vocabulary instruction on the participants' attitudes toward EMI, the result was negative. The statistical results revealed that students in the EVI group had a less positive attitude toward an EMI class than students in the NEVI group, and this difference was statistically significant. This result at the first glance, seems to contradict the findings of previous studies (Kharaghani & Ghonsooly, 2015; Wang et al, 2015). Those studies did not investigate the direct relation between vocabulary knowledge and learners' attitude toward EMI classes in an EAP context. They emphasized the correlation between vocabulary knowledge and reading attitude or motivation. When looking at the qualitative results from the interviews, the participants in this study also revealed a positive attitude toward reading textbook contents and listening to lectures. However, the increased reading motivation does not automatically lead to a positive attitude toward EMI classes. The open-ended question results showed the participants' frustrations when learning an academic subject matter in English. This sense of difficulty echoes previous studies

arguing that EMI imposes a high cognitive load (Lee, 2013; Sweller et al., 2011). Even though the students' academic performance improved and their attitudes toward reading the English textbook became more positive after learning academic terminology, their attitudes toward EMI did not seem to be affected by this intervention.

On the other hand, the NEVI students showed a more positive attitude toward an EMI course as opposed to their EVI peers. This may be because the instructor used videos and real-life examples in the classroom. Students generally enjoyed watching short video segments and discussing cases. In addition, the instructor, when showing her own experience, tended to code switch. Even though the code-switching did not violate the EMI methodology, it seemed that the interaction between the instructor and the students was more active in the control group than in the EVI group. Moreover, the video segments and examples were sometimes funny. This somewhat released stress and tension in an academic class. As a result, although students in the NEVI group also consider that an EMI class is difficult, their attitude toward this type of instruction is more positive because presumably of the enjoyable atmosphere in the classroom.

Research question 3: What is students' perception about explicit vocabulary instruction?

The participants' responses suggested that they valued the implementation of vocabulary instruction. In addition, the interviewees enjoyed it the most when taking an active role in the learning process. The EVI designed in this study is different from previous studies concerning vocabulary instruction done in Taiwan. Vocabulary instruction studies in Taiwan have focused on definitions and collocation of vocabulary (i.e., Hsu, 2010; Lin, 2009). Those types of instruction concentrated on the recall and memorization of the words. The approach done in this study, however, represents instruction that "does not rely on the memorization of definitions, but the ability to utilize and understand academic terminology" (Jack, 2015, p. 40). The interaction process deepened the participants' knowledge of academic words and this understanding further reflected on the improvement of subject knowledge. This finding corresponds to the results of research question 1. The participants believed this EVI design helped them acquire academic terminology and facilitate their learning in an EMI course.

However, the interviewees also revealed a love-hate feeling for taking an active role in learning. On one hand, they enjoyed this process because it enhanced and deepened their understanding.

On the other hand, they felt that they needed to put more effort in this type of activity. They still wanted the instructor to give them correct answers eventually. This perception may explain why a majority of vocabulary instructions done in Taiwan tends to use a lectured-memorization method (Hsu, 2010; Lin, 2009; Lu, 2004) because the cultural norms favor teacher-centered classes. However, as one student mentioned, she learned to think critically through this method. It seems that students may still benefit from active participation.

Conclusion, Implications, and Limitations

Taiwanese students need supports to succeed when learning in EMI classes. Using English as an instructional medium may impede Taiwanese students' subject knowledge learning due to their limited EAP proficiency. A learner-centered explicit vocabulary instruction targeting academic terminology acquisition can be an effective way to help Taiwanese undergraduate students learn subject-matter knowledge in EMI classes. On the basis of this investigation, pedagogical implications for EMI teachers are suggested as follows:

First, teachers and educators who teach EMI classes in an EAP context are strongly suggested to support their pupils' learning by providing terminological knowledge. Many teachers may think that an EMI lecture is simply a matter of changing languages. However, without language support, EFL students may encounter great difficulties. Academic terminology instruction can be viewed as a scaffold to help EFL students learn in EMI classes. Second, students need to actively participate in the vocabulary learning process. During this process, they have opportunities to clarify and confirm their own understanding. Moreover, students should be able to apply the terminology. When providing the opportunity to create examples to explain terms, students go beyond a surface level of understanding. This will allow them to be successful on subject knowledge learning. Third, in an explicit vocabulary instruction, the teacher's role should be an initiator and a supervisor. Being an initiator, the teacher should select key words for students to learn. This helps EFL students focus on discipline-specific vocabulary so that they may understand academic subjects better. Being a supervisor, the teacher evaluates students' performance, correct their misunderstanding or provide additional explanations whenever students need.

Finally, EFL teachers and educators who want to offer EMI classes need teaching training. Many college and university teachers in Taiwan do not learn how to teach. They may have limited

knowledge of pedagogical methods. Therefore, it is difficult for those teachers to teach EMI classes effectively. Teachers who have experience in teaching ELL students may help higher education teachers improve their teaching skills. As seen in this study, students generally agreed that EMI classes help them improve their English. However, we also want students to learn with great interest. With the improvement of EMI quality, universities have the potential to create a win-win situation.

The explicit vocabulary instruction procedures implemented in this study offer an alternative instruction method for Taiwanese EFL teachers. As mentioned earlier, Taiwanese EFL teachers prefer using word lists in their explicit vocabulary instructions. Simply let EFL students learn vocabulary from work lists does not seem to get them any deeper than meaning memorization knowledge. In any vocabulary instruction, where the purpose is achieving deeper levels of vocabulary knowledge, learners' active involvement should be considered.

Although this study may enrich educators' understanding of how to implement explicit vocabulary instruction in EMI classes in an EFL context, it is still subject to several limitations. First, questionnaires about students' attitude toward EMI were collected at the end of the class. Whether students' attitudes change because of the EVI is unfortunately unknown in this study. The change of attitude can be investigated in future research. Second, data about students' attitudes were collected using an online survey with only one open-ended question. Future research may conduct some follow-up interviews regarding students' attitudes toward EMI classes as well as the EVI approach. Thirdly, multiple choices and matching accounted for 75% of the total score of the midterm and final exams. Even though those types of questions can still evaluate students' higher-order knowledge, such as applying and analyzing, it is worth finding out if an increasing proportion of short-answer questions will have an effect on student subject knowledge. Finally, the percentage of mother tongue use can be a factor affecting students' attitude toward EMI. It may be worth investigating the relation between a teacher's use of first language and students' attitude toward EMI. The result may also become a tool to empower NNES teachers in EFL contexts.

References

Aguilar, M, & Muñoz, C. (2014). The effect of proficiency on CLIL benefits in engineering students in Spain. *International Journal of Applied Linguistics, 24*(1), 1-18.

Ainsworth, M. D. S., Bell, S. M., & Stanton, D. S. (1971). Individual differences in strange-situation behaviors of one-year-olds. In H.R.Schaffer (Eds.), *The origins of human social relations* (pp. 49-67). New York: Academic press.

Akbari, Z. (2015). Key vocabulary learning strategies in EAP and EGP course books. *International Journal of Applied Linguistics & English Literature, 4*(1), 1-7.

August, D., & Shanahan, T. (2006). *Developing literacy in second-language learners: Report of the National Literacy Panel on language-minority children and youth.* Mahwah, NJ: Erlbaum.

Baumann, J. F., & Graves, M. F. (2010). What is academic vocabulary? *Journal of Adolescent & Adult Literacy, 54*(1), 4-12.

Beck, I. L., & McKeown, M. D. (2007). Increasing young low-income children's oral vocabulary repertoires through rich and focused instruction. *The Elementary School Journal*, *107*, 251-271.

Beck, I. L., McKeown, M. G., & Kucan, L. (2002). *Bringing words to life*. New York: The Guilford Press.

Beck, I. L., McKeown, M. G., & Kucan, L. (2013). *Bringing words to life: Robust vocabulary instruction*. New York: The Guilford Press.

Bradfore, A. (2012). Challenges in adopting English-taught degree programs. *International Higher Education, 69*, 1-6.

Calderon, M., August, D., Slavin, R., Duran, D., Madden, N., & Cheung, A. (2005). Bringing words to life in classrooms with English-language learners. In E.H. Hiebert & M.L. Kamil (Eds.), *Teaching and learning vocabulary: Bringing research to practice* (pp. 115-136). Mahwah, NJ: Lawrence Erlbaum Associates.

Chang, Y. -Y. (2010). English-medium instruction for subject courses in tertiary education: Reactions from Taiwanese undergraduate students. *Taiwan International ESP Journal, 2*(1), 55-84.

Chia, H.-U., Johnson, R., Chia, H.-L., & Olive, F. (1999). English for college students in Taiwan: A study of perceptions of English needs in a medical context. *English for Specific Purposes, 18*(2), 107-119.

Chen, L. J., & Chen, T. S. (2011). Difficulties to implement of teaching university molecular biology in English. *Chia-Nan Annual Bulletin, 37*, 431-440.

Cheng, Y.-H. (2005). *Effectiveness of using vocabulary glosses to enhance technological university business and engineering majors' EFL reading comprehension and vocabulary learning* (Unpublished master thesis), National Kaohsiung First University of Science and Technology, Kaohsiung, Taiwan.

Chuang, H.-C. (2011). *The effects of explicit reading program on vocabulary acquisition of EFL junior high school students in Taiwan* (Unpublished master thesis). Kaohsiung Normal University, Kaohsiung, Taiwan.

Chou, P. (2011). The effects of vocabulary knowledge and background knowledge on reading comprehension of Taiwanese EFL students. Electronic Journal of Foreign *Language Teaching*, *8*(1), 108-115.

Dafouz, E., Camacho, M., & Urquia, E. (2014). 'Surely they can't do as well': comparison of business students' academic performance in English-medium and Spanish-as-first-language-medium programmes. *Language and Education*, *28*(3), 223-235.

Dai, J. R. (2014). *The Effects of Extensive Reading on Taiwanese College Students' Reading Comprehension and Learning Motivation* (Unpublished master thesis). Chung Yuan Christian University, Taoyuan, Taiwan.

Evans, S., & Green, C. (2007). Why EAP is necessary: A survey of Hong Kong tertiary students *Journal of English for Academic Purposes, 6*(1), 3-17.

Flowerdew, L. (2015). Corpus-based research and pedagogy in EAP: From lexis to genre. *Language Teaching, 48*(1), 99-116.

Ghannadi, M. (2010). *Interventionist (explicit and implicit) versus non-interventionist (incidental) learning of phrasal verbs by Iranian EFL learners* (Unpublished master thesis). Allameh Tabataba'i University, Tehran, Iran.

Gundermann, S. (2014). *English-medium instruction: Modeling the role of the native speaker in a lingua franca context*. Doctoral dissertation retrieved on July 3rd, 2015 from file:///C:/Users/user/Downloads/EMI_DISS.pdf

Hellekjær, G. O. (2010). Lecture comprehension in English-medium higher education. *Hermes-Journal of Language and Communication Studies, 45*, 11-34.

Hengsadeekul, C., Hengsadeekul, T., Koul, R., & Kaewkuekool, S. (2012). English as a medium of instruction in Thai universities: A review of literature. Retrieved on May 11th, 2015 from http://www.wseas.us/e-library/conferences/2010/Japan/EDU/EDU-12.pdf

Hiebert, E. H., & Lubliner, S. (2008). The nature, learning, and instruction of general academic vocabulary. In A.E. Farstrup & S.J. Samuels (Eds.), *What research has to say about vocabulary instruction* (pp. 106-129). Newark, DE: International Reading Association.

Ho, W. C. (2001). *A Study on teacher vocabulary explanation in vocational high school EFL classrooms* (Unpublished master thesis). National Changhua University of Education, Changhua, Taiwan.

Hsieh, S. –H., & Kang, S. –C. (2007). Effectiveness of English-medium instruction of an engineering course and strategies used by the teacher. Retrieved on March 6th, 2015 from http://ctld.ntu.edu.tw/rp/95_01.pdf

Hsu, J.-Y., Hsu, L.-C. (2007) Teaching lexical collocations to enhance listening comprehension of English majors in a technological university of Taiwan. *Soochow Journal of Foreign Languages & Cultures*, *24*, 1-32.

Hsu, Y.-Y., & Lee, S.-Y. (2007). Extensive reading and EFL junior college students in Taiwan. Retrieved March 10th, 2017 from http://www.o.ntust.edu.tw/~syying.lee/publications/Hsu_Lee_SELL2007.pdf

Hsu, J.-Y. (2010). The effects of collocation instruction on the reading comprehension and vocabulary learning of Taiwanese college English majors. *The Asian EFL Journal Quarterly*, *12*(1), 47-87.

Huang, D. F. (2004). Aspects of English medium instruction research: Retrospect and prospect. Retrieved on July 3rd, 2015 from http://www.researchgate.net/profile/Da-Fu_Huang/publication/262451486_Aspects_of_English_Medium_Instruction_Research_Retrospect_and_prospect/links/0a85e537c1cd7b1b78000000.pdf

Hulstijn, J. H. (2001). Intentional and incidental second-language vocabulary learning: A reappraisal of elaboration, rehearsal and automaticity. In P. Robinson (Eds.), *Cognition and Second Language Instruction* (pp. 258-286). Cambridge: Cambridge University Press.

Ibrahim, J. (2001). The implementation of EMI (English medium instruction) in Indonesian universities: Its opportunities, its threats, its problems, and its possible solutions. *Jurusan Sastra Inggris, Fakulta Sastra, Universitas Kristen Petra, 3*(2), 121-138.

Jack, A. (2015). Effective direct vocabulary instruction to meet the focus of the common core standards. *The Open Communication Journal, 9,* 39-43.

Kuo, Y., & Ho, H.-Y. (2012). Effects of word card strategy versus word list strategy on Taiwanese EFL junior high school students' vocabulary. *Electronic Journal of Foreign Language Teaching*, *9*(1), 26-45.

Kharaghani, N., & Ghonsooly, B. (2015). The impact of vocabulary knowledge on reading comprehension ability of Iranian English learners receiving reciprocal teaching and cooperative grouping intervention program. *International Journal of Research Studies in Education, 4*(3), 47-46.

Knudsen, S. S., & Westbrook, P. (2013). Preparing students and lectures for English medium instruction at the university of Copenhagen. Retrieved on March 19th, 2015 from http://conference.pixel-online.net/ICT4LL2013/common/download/Paper_pdf/011-CLI01-FP-Knudsen-ICT2013.pdf

Lasagabaster, D. (2008). Foreign language competence in content and language integrated courses. *The Open Applied Linguistic Journal, 1*(11), 30-41.

Lee, S. H. (2003). ESL learners' vocabulary use in writing and the effects of explicit vocabulary instruction. System, 31(4), 537-561.

Lee, S. H., & Muncie, J. (2006). From receptive to productive: Improving ESL learners' use of vocabulary in a postreading composition task. *TESOL Quarterly, 40*(2), 295-320.

Lesaux, N. K., Kieffer, M. J., Faller, S. E., & Kelley, J. G. (2010). The effectiveness and ease of implementation of an academic vocabulary intervention for linguistically diverse students. *Reading Research Quarterly, 45*(2), 196-228.

Lien, H.-Y. (2003). *The effects of collocation instruction on the reading comprehension of Taiwanese college students* (Unpublished doctoral dissertation). Indiana University of Pennsylvania, Pennsylvania.

Lin, A. M. Y. (2006). Beyond linguistic purism in language-in-education policy and practice: Exploring bilingual pedagogies in Hong Kong Science classroom. *Language and Education, 20*, 287-305.

Lin, Y.-P. (2009). Enhancing EFL learners' English reading proficiency through collocation instruction. *English Teaching & Learning*, *33*(1), 37-71. http://dx.doi.org/10.6330/ETL.2009.33.1.02

Lorenzutti, N. (2014). Implementing English medium instruction in the Asian higher education context: Practical strategies for tertiary educators. Retrieved on May 11th, 2015 from http://www.lic.vnseameo.org/InternationalConference2014/Materials/NicoLorenzutti.pdf

Lu, C. (2004). *The effects of reading articles and memorizing word lists on EFL high school students' reading and vocabulary abilities* (Master thesis). National Taiwan Normal University, Taiwan.

Manh, L. D. (2012). English as a medium instruction in Asian universities: The case of Vietnam. *Language Education in Asia, 3*(2), 263-267.

Marsh, H. W., Hau, K. T, & Kong, C. K. (2000). Late immersion and language of instruction in Hong Kong high schools: Achievement growth in language and non-language subjects. *Harvard Educational Review, 70*, 302-346.

Marzano, R. J. (2004). *Building background knowledge for academic achievement*. Alexandria, VA: Association for Supervision and Curriculum Development.

Marzban, A., & Kamalian, K. (2013). Effects of implicit versus explicit vocabulary instruction on intermediate EFL learners' vocabulary knowledge. *ELT Voices-India*, *3*(6), 84-95.

McKeown, M. G., Beck, I. L., & Sandora, C. (2012). Direct and rich vocabulary instruction needs to start early. In E. J. Kame'enui & J. F. Baumann (Eds.), *Vocabulary instruction: Research to practice* (pp. 17–33). New York, NY: Guilford Publications, Inc.

Morell, T., Alesón, M., Escabias, P., Palazón, M., & Martinez, R. (2014). English as the medium of instruction: A response to internationalization. Retrieved on March 6th, 2015 from http://web.ua.es/es/ice/jornadas-redes-2014/documentos/comunicaciones-posters/tema-5/392287.pdf

Nagy, W., & Townsend, D. (2012). Words as tools: Learning academic vocabulary as language acquisition. *Reading Research Quarterly*, *47*(1), 91-108.

Nisbet, D. L., & Tindall, E. R. (2015). A framework for explicit vocabulary instruction with English language learners, *Kappa Delta Pi Record, 51*(2), 75-80.

Paribakht, T. S., & Wesche, M. (1997). Vocabulary enhancement activities and reading for meaning in second language vocabulary acquisition. In J. Coady & T. Huckin (Eds.), *Second Language Vocabulary Acquisition: A Rational for Pedagogy* (pp. 174-200). Cambridge: Cambridge University Press.

Park, H. (2007). English medium instruction and content learning. *English Language and Linguistics, 23*(2), 257-274.

Perrone, M. (2015). The development of academic vocabulary in K-12 ELLs through explicit, systematic pedagogy: A multifaceted approach. *NYS TESOL Journal, 2*(1), 60-69.

Philippot, R., & Graves, M. F. (2009). *Fostering comprehension in English classes: Beyond the basics.* New York: The Guilford Press.

Shohamy, E. (2013). A critical perspective on the use of English as a medium of instruction at universities. In A. Doiz, D. Lasagabaster, & J.M. Sierra (Eds.), *English-medium instruction at universities: Global challenges* (pp. 196-210). Bristol, England: Multilingual Matters.

Sobul, S., & Schmitt, N. (2010). Direct teaching of vocabulary after reading: is it worth the effect? *ELT Journal*, *64*(3), 253-260. doi:10.1093/elt/ccp059

Sweller, J., Ayres, P., & Kalyuga, S. (2011). *Cognitive load theory*. New York: NY: Springer.

Tamtam, A. G., Gallagher, F., Olabi, A. G., & Naher, S. (2012). A comparative study of the implementation of EMI in Europe, Asia and Africa. *Procedia-Social and Behavioral Sciences, 47*, 1417-1425.

Townsend, D., & Collins, P. (2009). Academic vocabulary and middle school English learners: An intervention study. *Reading Writ*, 22, 993-1019.

Wang, R. M. H. (2010). The effectiveness of using English as the sole medium of instruction in English classes: Student responses and improved English proficiency. *Porta Linguarum, 13*, 119-130.

Wang, B.T., Teng, C.W., & Chen, H.T. (2015). Using iPad to facilitate English vocabulary learning. *International Journal of Information and Education Technology*, *5*(2), 100-104.

Wesche, M., & Paribakht, T. S. (1994, March). *Enhancing vocabulary acquisition through reading: A hierarchy of text-related exercise types*. Paper presented at the AAAL '94 conference, Baltimore, MD. Retrieved from http://files.eric.ed.gov/fulltext/ED369291.pdf

Wu, W. S. (2006). Students' attitude toward EMI: Using Chung Hua University as an example. *Journal of Education and Foreign Language and Literature*, *4*, 67-84.
Yang, M.-N. (2015). A nursing academic word list. *English for Specific Purposes, 37*, 27-38.

Yao, C. K. (2004). A case study on content-based instruction in an EFL university context. Retrieved on March 14th, 2015 from http://ir.lib.pccu.edu.tw/bitstream/987654321/921/1/RRPE900800.pdf

Yip, D. Y., Tsang, W. K., & Cheung, S. P. (2003). Evaluation of the effects on medium of instruction on the science learning of Hong Kong secondary students: Performance on the science achievement. *Bilingual Research Journal*, *27*(2), 296-331.

Yoon, H., & Hirvela, A. (2004). ESL student attitudes toward corpus use in L2 writing. *Journal of Second Language Writing, 13*, 257-283.

Yovanoff, P., Duesbery, L., Alonzo, J., & Tindal, G. (2005). Grade-level invariance of a theoretical causal structure predicting reading comprehension with vocabulary and oral reading fluency. *Educational Measurement: Issues and Practice, 24*(3), 4-12.

Zimmerman, C. B. (1997). Do reading and interactive vocabulary instruction make a difference? An empirical study. *TESOL Quarterly, 31*(1), 121-140.

Appendix A. Short-version of the exam

I. Multiple Choice. Choose the best answer.

1. Which of the following is NOT Locke's view of development?
   A. A child's mind is a blank slate.
   B. Some ideas exist prior to experience.
   C. Environment shapes a child's mind.
   D. Individuals have some innate differences.
2. According to Piaget, when do people experience egocentrism?
   A. at preoperational and formal operational stages
   B. at peroperational and concrete operational stages
   C. at sensorimotor and concrete operational stages
   D. at concrete operational and formal operational stages
3. Here is a logical problem, "In the Far North, where there is snow, all bears are white. Novaya is in the Far North. What color are the bears there?" Most of the students in the class can solve the problem easily. They acquired this ability in the course of this school year. The students in this class appear to be at what stage of development?
   A. preoperational stage
   B. concrete operational stage
   C. formal operational stage
   D. accommodating stage
4. In Ainsworth's Strange Situation study, _____ appeared independent throughout the Strange Situation and didn't use their mother as a secure base.
   A. insecure-ambivalent infants
   B. securely attached infants
   C. disorganized infants
   D. insecure-avoidant infants
5. According to Locke, what is the main purpose of using rewards and punishments?
   A. for training children's character
   B. for children to learn more effectively
   C. for eliminating children's fears
   D. for expending children's cognitive capacities
6. According to Bowlby, the effects of separation typically run the following course:
   A. 1. children become despaired, 2. they protest, 3, they show detachment behaviour
   B. 1. children protest, 2. they become despaired, 3, they show detachment behaviour
   C. 1. children show detachment behaviour, 2. they protest, 3, they become despaired
   D. 1. children show detachment behaviour, 2. they become despaired, 3, they protest
7. The goal of education in Montessori Schools is that the teachers _____.
   A. try to direct, instruct, drill and take charge of the children
   B. try to give the children opportunities for independent mastery
   C. try to promote the children's learning through punishments and rewards
   D. try to act as models of the children and provide them model answers
8. Which of the following is NOT true about the educational principles overlapping between Skinner and Montessori?
   A. They both wanted to make learning an individualized activity.

B. The materials designed for their programs involved reading.
C. They both wanted learners to build skills gradually.
D. They both disagreed punishment.

9. Which of the following is NOT Locke's view of education?
   A. Children should learn self-control when they are young.
   B. The best punishment is for children to experience pain.
   C. The most effectively way for children to learn is through games.
   D. Adults should eliminate children's fear by gentle degrees.
10. Which of the following is NOT Rousseau's view of education?
   A. Children can judge their own success.
   B. Adults should provide only minimal guidance.
   C. Children learn when they have the desire to learn.
   D. Adults should correct children's learning.
11. At this stage, children organize two previously separate body movements. For example, a baby girl repeatedly brings her thumb to her mouth and tries to suck it.
   A. the use of reflexes
   B. primary circular reactions
   C. secondary circular reactions
   D. tertiary circular reactions
12. The administration of which of the schedules of reinforcement will probably produce the highest rate of responses?
   A. variable-interval schedules
   B. fixed-ratio schedules
   C. variable-ratio schedules
   D. fixed-interval schedules
13. Which of the following is NOT one of the principles of Skinner's Programmed Instruction?
   A. progression in small steps
   B. active involvement of the learner
   C. feedback provided within seconds of the response
   D. teacher and peer support
14. "A child sees that beakers A1 and A2 contain the same amount of liquid. He then pours A2 into P and claims that now A1 has more because it is taller." The child does not have the conception of _____.
   A. conservation of substance
   B. conservation of number
   C. conservation of volume
   D. conservation of continuous quantities
15. According to Piaget, what is the order of the development of object permanence?

a、Children can follow a series of displacements as long as they can see others making them.

b、Children can follow invisible displacements and make detour behavior,

c、Children can find partly hidden objects, but cannot find objects that are completely hidden by others.

d、Children can find completely hidden objects, but cannot follow a series of displacement.

   A. a b c d
   B. b a c d

C. d a b c
D. c d a b

II. Matching. Match the types of parents with the descriptions and the children's classifications.

1. preoccupied parents	A. talk openly about their early experiences	(a) Securely attached children
2. secure parents	B. Early experiences are unimportant	(b)Insecure avoidant children
3. dismissing of attachment parents	C. still struggle to win their parents' approval.	(c)Insecure ambivalent children

III. Short-Answer Questions.

1. How does Skinner's programmed instruction differ from and overlap with Montessori's learning materials?
2. Locke, Montessori and Skinner mentioned punishments and rewards in their educational philosophy. How are their views similar and different from one another?
3. How is Rousseau's educational point of view similar to Montessori's?
4. Below is a conversation between an adult and two children. Identify which child may study in a Montessori school and which one is from regular school. Explain why.
   Adult: Do you get to work on anything you want?
   Child A: No. But we can go to the bathroom anything we want. But we're not allowed to go to the bathroom more than four times.
   Child B: I can work on anything that I'm interested in.
5. Use an example to demonstrate/explain Rousseau's perspective, "children process a kind of reason, but it is an intuitive reason that is directly tied to body movement and the senses."

Appendix B

CSEPT	TOFEL ITP	TOFEL PBT	TOFEL iBT	TOEIC	IELTS
360	267	630	109	950	7.5
345	250	600	100	900	7.0
330	220	560	83	880	6.5
280	197	527	71	800	6.0
260	190	520	68	750	5.5
250	180	507	64	700	5.0
240	173	500	61	650	
230	163	487	57	600	4.5
220	150	470	52	550	
210	147	467	51	500	4.0
200	143	463	49	450	
180	133	450	45	400	3.5

Note: This table was announced officially by the Ministry of Education in Taiwan on Sep. 10th, 2008.

THE ASIAN ESP JOURNAL

A Contrastive Study of Move Structure in the Introduction Section of Physical versus Social Sciences Research Articles in English

Biook Behnam

Department of English, College of Literature and Foreign Languages**,** Tabriz Branch, Islamic Azad University, Tabriz, Iran.

Amir Nikoukhesal

Department of English, College of Literature and Foreign Languages, Tabriz Branch, Islamic Azad University, Tabriz, Iran.

Biodata

Biook Behnam is an Associate Professor in Applied Linguistics in Islamic Azad University, Tabriz Branch, Iran. His current research interests cover Discourse Analysis, ELT, and Translation Studies. He has been involved in a wide range of projects in the area of Applied Linguistics and Discourse Analysis as a project director, consultant and researcher. He has widely presented papers to national and international conferences in North America, Australia, Europe, China, India and South East Asia.

Some of his relevant publications include Discourse of Advertising: A comparative study, with H. Piadeh; A Critical Study of Selected Political Elites in English, with L. Moghatadi; and a Sociolinguistic Study of SMS Exchanges of Iranian Festive/Mourning Occasions, with M. R. Khodadost.

Email address: Behnam_Biook@yahoo.com

Amir Nikoukhesal received his MA in teaching English from Islamic Azad University, Tabriz Branch, Iran. His research interests include Applied Linguistics, Discourse Analysis and ELT. He works as an English teacher in the Ministry of Education in Iran.

Abstract

Genre analysis has gained ground in recent years in the context of English for Specific Purposes (ESP). As an important genre in the research article (RA), the introduction has received significant attention from the academic community. But there has been little research on the variations in research article introductions across disciplines. This study, following Swales' (1990) widely accepted Create-A Research- Space (CARS) model, examined the move structure of 40 physical and social sciences (20 each of the disciplines) research article introductions. Move analysis was performed to find the frequency of moves and steps in the introduction sections of physical and social sciences research articles. The results showed that there is no significant difference between move frequency of introduction sections of physical and social sciences research articles, but there is a significant difference between their step frequencies. This means that both physical and social writers utilized the three moves with similar frequencies, but the execution of these three moves was different in these two disciplines. Physical and social writers utilized the eleven steps with different frequencies. The results might present the language teachers, students, and syllabus designers with useful information about the move structure of the introduction section of physical and social sciences research articles.

Keywords: Genre analysis, Move analysis, Research article introduction, CARS model, Physical and social sciences

1. Introduction

In recent years, genre analysis has received considerable attention in English for Specific Purposes (ESP) context. Genre analysis, which has proven to be pedagogically efficient in making language learners aware of frameworks according to which various genres are shaped, strives to determine the rhetorical organization and identify linguistic features of the genre under study. The fact that an awareness of the genre conventions for language learners is helpful in their mastery of the genre is clearly apparent in the literature and its merits are explained by many scholars of the field

(Holmes, 1997; Hyon, 1996; Swales, 1990). In addition, genre awareness has always been expressed as a need by many language students. Native and non-native researchers need to both comprehend and write English academic prose of various related disciplines. As the most important genre in the academic community, the research article (RA) has received significant attention in genre analysis. The research article is chosen for the present research because of its importance for the circulation of academic knowledge. Research articles are usually written according to some conventional patterns, which are generically determined. Subsequent studies, however, have indicated that the generic structure of RA may vary in significant ways across disciplines. Such differences, if there are any, should first be identified precisely so that they may be taught to students to gain a better understanding of the way the generic structures are organized across disciplines (Samraj, 2002). Novice writers and non- native researchers who have to report their research findings in English in order to gain an international relationship and those non-native students that intend to communicate with the target community through academic writing need to know the conventions of research writing, and in particular, the communicative moves that writers need to make to develop their main points and arguments.

The research article introduction within this text type constitutes a genre in itself (Bhatia, 1993; Swales, 1990) as distinct from abstract, discussion, result, and conclusion sections belonging to the same text type. Research article introductions have been most widely studied because, as Swales (1990) states, they are one of the most difficult parts for writers, since they are faced with numerous options and decisions in this part: the amount of background knowledge, the authoritative versus sincere tone, the winsomeness of the appeal to readers, and directness of approach they should incorporate into their writing. Understanding linguistic and generic structure of research article introductions and ability to predict non-native researchers' most probable problems in both writing and comprehending them are essential for obtaining instruction to teach non-native researchers who need to know how to write English scientific articles.

A number of studies have investigated the overall structure of various parts of the research article, such as the introduction (Samraj, 2002; Swales, 1990; Swales & Najjar, 1987), the result section (Brett, 1994; Thompson, 1993; Williams, 1999), discussion (Holmes, 1997; Hopkins & Dudley-Evans, 1988; Yang & Allison, 2003) and the abstracts (Salager-Meyer, 1990; Samraj, 2005).

Swales' (1990) Create-A Research- Space (CARS) model has been frequently employed in the analysis of research article introductions from different languages (such as Malay) and cultures and revealed that linguistic and cultural differences influence RA introductions (Ahmad, 1997). Various studies have revealed the difference in the use of rhetorical features within a single discipline (Kuhi & Behnam, 2011; Lee, 2011) but few studies have examined the variations in RAs across disciplines despite the increasing interest in disciplinary differences in academic writing (Samraj, 2002). Some recent studies of disciplinary variation have explored the whole structure of RAs. Posteguillo's (1999) study of RAs in computer science and Nwogu's (1997) study of medical science indicate variations in the whole genre across disciplines and highlight the need for further research on disciplinary variation.

Some scholars have extended the scope of disciplinary variations in RAs to various parts of RA. Samraj (2005) compared RA abstracts from two closely related disciplines: conservation biology and wildlife behavior. Analyzing 24 randomly selected abstracts from each of the two disciplines, she found that the overall layout of the RA abstracts was similar: Purpose-Method-Results-Conclusion. She concluded that texts from closely related disciplines can vary in overall organization and linguistic choices. Holmes (1997) analyzed the discussion section of thirty social science research articles in terms of sequence and structure of their rhetorical moves, from the disciplines of History, political science, and sociology. "It was found that, although there were fundamental similarities to the natural sciences, social science discussion sections also displayed some distinctive features. History texts were particularly distinctive, and, of the three disciplines, bore the least resemblance to those of the natural sciences" (p. 321).

Peacock (2002) analyzed the communicative moves in discussion sections across seven disciplines: Physics, Biology, Environmental Science, Business, Language and Linguistics, Public and Social Administration, and Law. The corpus was 252 research articles (36 from each discipline, 1.4 million words). In this study, "a number of marked interdisciplinary and NS/NNS differences were found in the type and number of moves and move cycles" (p. 479). Brett (1994) analyzed a corpus of 20 research articles from the discipline of sociology to present a provisional, pedagogically usable description of the communicative categories or moves found in the "results" sections. In this study, these categories or moves were described in terms of function, lexis, and grammatical form. Moreover, a model of the typical, cyclical patterns formed by combinations of

the categories was given. The analysis revealed that the moves found had certain similarities with the "discussion" sections of hard science research articles, and provided evidence of disciplinary variation.

There has been less research, however, on the variations in RA introductions across disciplines. Swales and Najjar (1987) examined RAs from educational psychology and physics focusing on the presence of principal findings in Move 3 of introductions. In a study on RA introductions in software engineering, Anthony (1999), whose purpose was to test the CARS model, revealed that the Create-A Research- Space (CARS) model did not adequately account for the structure and some important features of the introduction, such as the definition of terms, exemplifications of difficult concepts, and evaluation of the research presented. However, he pointed out that "the model can be considered one of the strongest descriptions of text structure to date" (p. 39). Samraj (2002) analyzed RA introductions from two related fields, Wildlife Behavior and Conservation Biology, to explore the applicability of the CARS model across different disciplines. The results revealed disciplinary variation in the structure of this genre. The results also indicated that a deeper exploration of Swales' (1990) CARS model was needed to consider the structures found in the introductions analyzed.

Ozturk (2007) explored the degree of variability in the structure of article introductions within a single discipline. The study analyzed a corpus of 20 research articles to reveal the differences between two subdisciplines of applied linguistics, namely second language acquisition and second language writing research, within the framework of Swales' CARS model. "The two disciplines seemed to employ different and almost unrelated move structures. In the second language acquisition corpus one type of move structure was predominant while in the second language writing corpus two different types of move structure were almost equally frequent" (p. 1). Atai and Sahraneshin Samani (2012) explored the generic structure of research article introductions within a single subdiscipline: EOP versus EAP. The corpus was comprised of 40 research article introductions (RAIs) by native speakers of English. The RAIs were analyzed based on the Create a Research Space (CARS) model. The results indicated that "there is no significant difference within this subdiscipline, and thus subdisciplinary variation is probably not a distinctive variable in RAIs in ESP" (p.5). Habibi (2008) analyzed the generic structure of research article introductions across three related fields, ESP, Psycholinguistics, and Sociolinguistics, using

Swales' CARS model. The corpus consisted of 90 RAs drawn from a wide range of refereed journals in the corresponding disciplines. The results of the analysis, "although revealing marked differences across the disciplines regarding Move 2/step 1B, indicated no marked differences in research article introductions across the disciplines in terms of Move 1 and 3 along with their constituent steps". (p. 87).

Although there have been some studies of academic writing on disciplinary variation for example by Samraj (2002), Ozturk (1997) and Nwogu (1997), the bulk of the research to date on the introduction section of the RA or on its overall structure has dealt with either within a single discipline or between two related fields and subdisciplines. However, there have been no studies which compare the structural organization of the introduction section of physical and social sciences research articles in English. This study aims to find out whether there is any difference in the introduction sections of physical and social sciences articles in English as far as the frequency of moves and steps are concerned. Physical sciences like chemistry and physics are concerned with the study of nature – the physical and natural behaviors and phenomena without the social, cultural, or the human context or aspect. Social sciences like sociology and economics, however, deal with the cultural and behavioral aspects of human beings, their relationship with others especially with society. The basis of physical science is experimental data and relies on repeated experiments, laboratory testing, and constant reproductions of results while social sciences rely on experiential data and try to establish social phenomena and are not easily reproduced in a laboratory or in any experiment. Therefore, Physical and social sciences are considered as two different disciplines and it is believed that every discipline can have its own generic structure, writers of these disciplines need to be aware of the standard style of writing in these disciplines. Sociology and Economics were chosen for social science and Physics and Chemistry were chosen for physical science since they are, by common consent, central social and physical science disciplines. A large and increasing number of non-native speaker students are studying physical and social sciences subjects through the medium of English. There is therefore a pedagogical rationale for extending the genre analysis of the RA into the physical and social sciences. A further justification for studying physical and social sciences RAs is that this will enable us to determine how far the patterns observed in the physical and social sciences are similar and where the differences lie. Findings of the study might present the current members of these communities and non-native researchers that intend to communicate with the target community through academic writing with

useful information about the genre structure and specific moves and constituent parts of the introduction section of physical and social sciences articles.

The results of this analysis reveal that both physical and social writers utilized the three moves with similar frequencies, but the execution of these three moves was different across disciplines. In order to execute the three moves, physical and social writers utilized the eleven steps with different frequencies.

2. Method

2.1 Model and Data Analysis

Swales' (1990) CARS model was utilized for the analysis and it proved to be quite an acceptable means of analysis of the corpus. The model could effectively explain the generic organization of research article introductions in physical and social sciences in terms of their move structure. Swales (1990) postulated a 3-move structure for RA introductions (given in Fig. 1). First, the writers established the general topic being discussed (Establishing a territory), then they create a niche for themselves within this territory (Establishing a niche), and finally the authors indicate the particular concerns of the study reported (Occupying the niche).

Move 1: Establishing a territory	Step1 Claiming centrality and/or
	Step 2 Making topic generalization(s) and/or
	Step 3 Reviewing items of previous research
Move 2: Establishing a niche	Step 1A Counter-claiming or
	Step 1B Indicating a gap or
	Step 1C Questioning—raising or
	Step 1D Continuing a tradition
Move 3: Occupying the niche	Step 1A Outlining purposes or
	Step 1B Announcing present research
	Step 2 Announcing principal findings
	Step 3 Indicating RA structure

Figure 1: Swales' (1990) Create-A-Research-Space (CARS) model. RA = research article

For the analysis of our texts, we considered the *move* as a stretch of text, which may vary in size, shape and containing a proposition that has a major communicative function. Each stretch of text is differentiated from its following contiguous text segment in that the latter contains another proposition having a different major function. In other words, we consider a move in a text as a functional unit, used for some identifiable discoursal objective (Connor, 2000; Holmes, 1997). Thus, primarily a functional approach was adopted in the analysis of the corpus, with an eye on the formal clues. For the purpose of our analysis, the frequency of occurrence of each move and its constituent steps were tailed and summed; and to probe differences, chi-square tests were conducted to find out whether the observed variations in the move structure of physical and social sciences article introductions are statistically significant.

To enhance reliability of move identification procedure, two copies of the corpus were provided which were independently analyzed by the conductor of this research and an expert reader/ rater holding an MA in English language teaching who explored the move structure of the introduction section of English and Persian social sciences research articles in his MA thesis. Before undertaking the main job, a couple of research article introductions, excluded from the corpus, were analyzed jointly during which some discussion settled some disagreements between the two raters. There were some instances of disagreements after the analysis, too. Yet, they were all settled by ensuing discussions, and as the last resort they were brought up to a third informant for final identification.

2.2 The Corpus

Forty physical and social sciences recent research article introductions (20 from each of discipline), all published in 2008-2013, were randomly selected from four physical (represented by physics and chemistry) and four social sciences (represented by economics and sociology) scientific sources in English. Physical RAs come from *The open Chemical Engineering Journal / Condensed Matter Physics Journal / Elsevier Science Direct database* and social RAs are from *Cambridge Journal of Regions, Economy and Society / Economics: The Open-Access, Open-Assessment E-Journal / Oxford Economics Papers / Elsevier Science Direct database*.

To choose the articles, the following criteria were observed. First, the corpus was restricted to a period of 6 years (2008-2013) to control for potential rapid changes within any of the disciplines.

Second, experts of the field (in most cases graduate university students) were consulted with in order to find articles with the most importance and readership. Their suggestions were taken into account in deciding on the selection of articles from different sources to be included into the study. Third, the length of the article introductions intentionally was not controlled because that would have affected the naturalness of sampling. Forth, the Introduction sections were from articles which had the traditional Introduction, Method, Results, and Discussion (IMRD) sections.

3. Results

We have adopted a genre analytic method, namely move analysis, in order to investigate whether there are statistically significant differences in research article introductions, between physical and social disciplines as far as move structure is concerned. In this study move structure is confined to move and step frequency. The frequency of moves and their constituent steps were analyzed in the corpus. Tables 1 and 2 show the move and step frequencies in the corpus.

Table 1: Move frequency of introduction section of physical and social sciences research articles

	Moves			Total
	Move 1	Move 2	Move 3	
Physical	30	21	24	75
Social	32	22	26	80
Total	62	43	50	155

Table 2: Step frequency of moves in the introduction section of physical and social sciences research articles

	Steps											
	step 1.1	step 1.2	step 1.3	step 2.1A	step 2.1B	step 2.1C	step 2.1D	step 3.1A	step 3.1B	step 3.2	step 3.3	Total
Physical	15	32	10	1	15	1	8	12	13	4	7	118
Social	5	14	21	1	11	9	3	9	19	13	14	119
Total	20	46	31	2	26	10	11	21	32	17	21	237

It should be noted that the sum of step frequencies of any move for each article group does not equal the corresponding move frequency. This is because in the corpus, more often than not, a move consisted of more than one step. Naturally, in such cases one move is represented in Table 1, but more than one step are counted and lodged in Table 2.

As for the order of research article introduction moves, the data in Table 3 indicate that the most observed pattern in physical introductions is 1-3 and in social introductions is 1-2-3, which is in accordance with the CARS model. Patterns 1-2-3 and 1-2-1-2-3 are more frequent in physical research articles while social research article writers use pattern 1-2-1-3 and 1-3 more frequently. The other patterns of move ordering are either very rare in both disciplines or idiosyncratic to one of them.

Table 3: Move order of physical and social sciences introductions

Move Order	Physical		Social	
	number	percent	number	percent
1-2-3	4	20%	6	30%
1-3	7	35%	3	15%
1-2-1-3	2	10%	5	25%
1-2-1-2-3	4	20%	2	10%
1-3-2-3-1-3	1	5%	1	5%
1-2-1-2-3-2-3-2-3	1	5%	0	0%
1-2-1-2-1-3	1	5%	0	0%
1-3-2-3-2	0	0%	1	5%
1-3-1-3	0	0%	1	5%
1-2-3-2-1-3-1-2-1-2-3	0	0%	1	5%
Total	20	100%	20	100%

In order to verify the existence of any variations across these disciplines, the frequencies of occurrence of each move and its constituent steps were tailed and summed; and to probe differences, chi-square tests were conducted to find out whether the observed variations in the move structure of physical and social sciences article introductions are statistically significant. The results of the study reject the existence of any significant differences in RA introductions across these disciplines in terms of move frequency, but the findings reveal that there is a significant difference between their step frequencies. Tables 4 and 5 show the results.

Table 4: Chi-square test for the frequency of moves

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.006[a]	2	.997
Likelihood Ratio	.006	2	.997
Linear-by-Linear Association	.001	1	.971
N of Valid Cases	155		

Table 5: Chi-square test for the frequency of steps

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	33.883[a]	10	.000
Likelihood Ratio	35.748	10	.000
Linear-by-Linear Association	10.836	1	.001
N of Valid Cases	237		

As it is shown in Table 4, there is no significant difference between move frequency of introduction sections of physical and social sciences research articles ($\chi^2 = .006$, $p = .997$, $p > 0.05$), but according to Table 5, there is a significant difference between their step frequencies ($\chi^2 = 33.883$, $p = .000$, $p < 0.05$). This means that both physical and social writers utilized the three moves with similar frequencies, but the execution of these three moves was different in these two disciplines. In order to execute the three moves, both physical and social writers utilized the eleven steps, but with different frequencies. The distribution of the steps within the three moves was found to be unevenly presented in physical and social sciences. Move 1 is represented by 57 steps (48.30%) and is therefore the most common move type in the physical corpus. It is followed by Move 3, which is represented by 36 steps (30.50%) of the total number of steps. In contrast to the substantial representation of the instances of Move 1 and 3, Move 2 is represented by only 25 steps (21.18%) in the analyzed introductions. The communicative goals the physical authors thus considered the most important are the establishment the general territory in which it operates and the detailed description of their own research.

The distribution of the steps in the social corpus is dissimilar. Move 3 is represented by 55 steps (46.21%) and is followed by Move 1, representing 40 (33.61%) of the steps. Similarly to the physical corpus, the least frequent move type in the social introductions was Move 2 with 24 steps (20.16%). In the social corpus the authors of the analyzed introductions laid emphasis on two objectives: to occupy the niche by providing a large amount of details about the research and to establish the territory with a substantial review of the literature. Table 6 shows the count of steps within moves in physical and social introductions.

Table 6: The count of steps within moves in physical and social introductions

Moves	No of steps in the PI	% of steps in the PI	No of steps in the SI	% of steps in the SI
Move 1	57	48.30	40	33.61
Move 2	25	21.18	24	20.16
Move 3	36	30.50	55	46.21

PI = Physical introduction, SI = Social introduction

The distribution of the steps within moves in physical and social sciences introductions are presented in the following tables.

Table 7: The distribution of the steps within moves in physical science introductions

Introduction	No of step/M1	No of step/M2	No of step/M3	Total
Article 1	3	4	4	11
Article 2	3	0	2	5
Article 3	3	3	3	9
Article 4	3	0	1	4
Article 5	4	3	2	9
Article 6	3	1	1	5
Article 7	1	0	2	3
Article 8	2	2	1	5
Article 9	3	0	2	5
Article 10	5	2	1	8
Article 11	1	0	2	3
Article 12	3	1	1	5
Article 13	4	2	1	7
Article 14	4	2	1	7
Article 15	3	1	3	7
Article 16	2	0	2	4
Article 17	3	0	2	5

Article 18	2	1	1	4
Article 19	1	1	1	3
Article 20	4	2	3	9
Total	57	25	36	118

M 1= Move 1; M 2= Move 2; M 3= Move 3

Table 8: The distribution of the steps within moves in social science introductions

Introduction	No of step/M1	No of step/M2	No of step/M3	Total
Article 1	2	1	3	6
Article 2	2	1	3	6
Article 3	2	2	1	5
Article 4	2	1	3	6
Article 5	2	1	1	4
Article 6	1	1	2	4
Article 7	1	1	1	3
Article 8	2	0	2	4
Article 9	1	2	2	5
Article 10	1	0	2	3
Article 11	2	1	5	8
Article 12	2	0	2	4
Article 13	1	1	3	5
Article 14	2	1	3	6
Article 15	2	1	3	6
Article 16	2	1	3	6
Article 17	2	0	3	5
Article 18	4	1	4	9
Article 19	4	5	5	14
Article 20	3	3	4	10
Total	40	24	55	119

M 1= Move 1; M 2= Move 2; M 3= Move 3

On the basis of the above, it can be stated that in the case of Move 1, the percentages display a difference between the physical and the social corpus (48% vs. 33%). Move 2 proved to be the least frequent move in both corpora (21% vs. 20%) and Move 3 plays a slightly more important role in the social than in the physical corpus (46% vs. 30%). In order to gain a better understanding of the issue a detailed analysis of each individual move and its constituent steps along with examples from each discipline are presented below.

Move 1: Establishing a Territory

Every research needs to establish the general territory in which it operates. The readers working within an academic discourse community should be informed and consequently assured that the research to be reported is relevant to the existing public and agreed issues of that discourse community. The analysis revealed that 100 percent of physical and 100 percent of social RAs include Move 1 in order to establish a territory. To establish a territory of the research to be reported, both physical and social authors tried to assure the readers of the importance, relevance, and recency of their research project. To achieve this, they made centrality claims, topic generalizations, and reviewed items of previous research. The ultimate goal was to re-establish the significance of the research field for the discourse community.

The results showed that Move 1 is the most frequent move in both disciplines and 100 percent of physical and 100 percent of social writers included this move in the RAs. Percentage of occurrence of Move 1 and its steps are summarized in the following table.

Table 9: Percentage of occurrence of Move1 and its steps

Move	Step	physical	social
Move 1 :	Establishing a territory	100%	100%
	Step 1. Claiming centrality	70%	25%
and/or	Step 2. Making topic generalization	95%	65%
and/or	Step 3. Reviewing items of previous research	40%	75%

As show in Table 9, 100 percent of physical and 100 percent of social authors establish a territory for their study. A possible interpretation can be that both physical and social authors felt the need to establish a territory in order to persuade the discourse community that the field the research he/she is working in is of significance, and that the research he is going to describe is useful, relevant, or important in some way. To attain this objective, they resorted to one or combination of steps include in Move 1 with different frequency.

Considering physical RAs, Step 1 (Claiming centrality) proved to be the second most frequent step of the three steps in Move 1. Step 2 (Making topic generalization) is present in 19 introductions and is the most frequent step, representing 27.11% of all the steps in the physical corpus. Step 3 (Reviewing items of previous research) occurs in eight physical introductions and is the least frequent step in Move 1.

The frequency of Step 1 (Claiming centrality) in Move 1 is the lowest in the social corpus, averaging a mere 4.20%. Step 2 (Making topic generalization) is the second most frequent of the three steps in Move 1. Step 3 (Reviewing items of previous research) proved to be the most frequent step, representing 17.64% of all the steps in the social corpus. Table 10 shows the count of steps within Move 1 in physical and social introductions.

Table 10: Move 1: $N_{step\ P}$ = 57 (48.30%), $N_{step\ S}$ = 40 (33.61%)

Corpora	No of steps		Step/Move 1 (%)		Step/Corpus (%)	
	P	S	P	S	P	S
S 1	15	5	26.31	12.5	12.71	4.20
S 2	32	14	56.14	35	27.11	11.76
S 3	10	21	17.54	52.5	8.47	17.64

S1 = Claiming centrality; S2 = Making topic generalization; S3 = Reviewing items of previous research; P = Physical corpus; S = Social corpus

Regarding the position of Move 1, RA writers did prefer to resort to this move introduction initially in 20 RAs (100%) in two disciplines of physical and social respectively. In 3 physical RAs (15%) and 5 social RAs (25%), Move 1 was fulfilled through individual application of its constituent steps, while in 17 physical RAs (85%) and 15 social RAs (75%) this move was realized through a combination of its constituent steps.

The first step in establishing a territory assures the reader that the present research is part of a lively, significant or well – established tradition. This is achieved through resorting to centrality claims. Analysis of the RAs revealed that the authors made a centrality claim in a number of ways: A) Highlighting an increasing attention B) Expressing a well - established territory C) Expressed importance and recognition D) Reference to central issues of the discipline E) Recency of the research territory.

While claiming centrality is the second most frequent step of the three steps in physical introductions, it is present in surprisingly few social introductions. Centrality claims are typically communicated in a single sentence, but in some cases can extend over two sentences. In physical RAs except (RAs 15,18) and in social RAs, except (RA 14) which utilized two sentences, in other RAs there was a single sentence for this purpose.

Centrality claims typically occur sentence initially. From among 20 physical RAs, 14 RAs (70%) include Step1 (claiming centrality), from which 7 RAs used this step sentence initially and in the other seven this step didn't occur sentence initially. From among 20 social RAs, 5 RAs (25%) include Step 1, which all of these RAs had this step sentence initially. Some examples of the strategies used for realizing Step 1 are presented below.

A) **Physical RA. No. 14:** *Fuel cells have attracted significant attention as……..*
B) **Social RA. No. 18:** *There is an increasing literature studying the effects of health on economic growth.*
C) **Social RA. No. 19:** *Vertical separation between research and development,……., is an increasing important route……..*
D) **Physical RA. No. 19 :** *The proper formulation of entropy changes……..has been subject of numerous investigations ever since…….*
E) **Physical RA. No. 18:** *In recent years, FO has been increasingly attractive for……..*

The second step in establishing a territory represents a neutral kind of general statement. In other words, the degree of emphasis is weaker compared to Step 1. Topic generalization in the analyzed RAs fell into two major categories: A) Statement about knowledge or practice B) Statement about phenomena. Step 2 proved to be the most frequent step, representing 27.11% of all the steps in physical corpus. The analysis revealed that from among 20 physical RAs, 19 RAs utilized Step 2 which equals to 95 percent and from among 20 social RAs, 13 RAs utilized Step 2 which equals to 65 percent. See the examples in this regard below.

A) **Physical RA. No. 1:** *Radiative modes of…….are not suitable for such energy transfer, because a vast majority of energy is wasted into free space……..*
B) **Social RA. No. 9:** *Globalization raises new challenge of the understanding of contemporary capitalism. ……*

The third step in establishing a territory is the review of one or more items deemed by the authors to be relevant to that territory. This step is one of the main occasions where the RA author needs to relate what has found (or claimed) with who has found (or claimed) it.

In fact by utilizing this step the author tries to provide a specification of previous findings, an attribution to the researchers who published these results and a stance towards the findings themselves and finally to show that he is aware of such research. Our analysis revealed two major techniques of reference to previous research: A) Integral citation B) Non integral citation.
Step 3 is the most frequent step, representing 17.64% of all the steps in social corpus and plays an important role. From among 20 physical RAs, 8 RAs had Step 3 which is equal to 40 percent of the RAs, and from among 20 social RAs, 15 RAs used Step 3 which is equal to 75 percent of the RAs.

Analysis of the physical and social introductions has indicated that discussion of previous research often undertakes a particular purpose, such as to provide support for the topic generalization or centrality claim being made or to justify the gap created. The results of the study seem to suggest that reference to previous literature is an element that does not just establish the territory (Move 1) but can play a prominent role in Move 2, when it is used to support gaps in previous research.

The following are the examples of these techniques found in the corpus.
A) **Social RA. No. 11:** *Ravn and Simonelli (2006) estimate a twelve-variable……..*
B) **Social RA. No. 2:** *Research done on the United States typically points to religion……about homosexuality (Olsen et al., 2006; Schulte and Battle, 2004).*

Move 2: Establishing a Niche

After describing important features of their research territory (Move 1), academic writers typically try to establish a 'niche' for their research. They can do this by describing the inadequacies in previous researches that motivates new investigations.

To achieve this, Move 2 may perform several functions: It may challenge the previous research (Step 1A. Counter-claiming), it may reveal a gap, a shortcoming (Step 1B. Indicating a gap), it may raise a new problem, or question that hasn't been dealt with yet (Step 1C. Question- raising), it may stick with a trend or tradition (Step 1D. Continuing a tradition) (Swales, 1990).

Analysis of the RAs revealed that Move 2 is the least frequent move in both disciplines. Seven physical and 4 social introductions do not contain Move 2, in other words, 65 percent of physical and 80 percent of social authors established a niche for their study. Percentage of occurrence of Move 2 and its steps are presented in Table 11.

Table 11: Percentage of occurrence of Move 2 and its steps

Move	Step	physical	social
Move 2 :	Establishing a niche	65%	80%
or	Step 1A. Counter – claiming	5%	5%
or	Step 1B. Indicating a gap	60%	45%
or	Step 1C. Question raising	5%	40%
	Step 1D. Continuing a tradition	40%	15%

As show in Table 11, 65 percent of physical and 80 percent of social authors established a niche for their study. To attain this objective they resorted to one or combination of steps included in Move 2. In the physical corpus, Step 1B (Indicating a gap) is the most frequent step in Move 2. The second most frequent step is Step 1D (Continuing a tradition).Step 1A (Counter – claiming) and 1C (Question raising) were identified only in one introduction.

The ratio of the different steps within Move 2 indicates a lack of preference for Step 1A (Counter – claiming) and 1D (Continuing a tradition) in the social corpus. Similarly to physical corpus, Step 1B (Indicating a gap) is the most frequent step in Move 2. The second most frequent step is Step 1C (Question raising). The constituent steps of Move 2 can be ranked (from the most frequent to the least frequent) as follows in terms of the tendency of the researcher to include them in the RA introductions in each of the two disciplines: physical (1B,1D,1A,1C), social (1B, 1C,1D, 1A). Move 2 was embodied in 25% of physical RAs and 60% of social RAs through resorting to single constituent steps, and no combination of these constituent steps was observed in the corpus analyzed, while in 8 physical RAs (40%) and 4 social RAs (20%) this move was realized through a combination of its constituent steps, which resonates with Swales' CARS model completely. Out of the four possible step options, Steps 1B and 1A ranked as the most frequent step and the least

frequent step respectively in the corpus analyzed, leaving Steps 1D, and 1C as the second and the third favorite choice. This preference for Step 1B in most of the RAs analyzed highlights the tendency on the part of the researcher for less direct and challenging approaches toward the established territory and the previous research, and they try to state the necessity of current research indirectly. Table 12 shows the count of steps within Move 2 in physical and social introductions.

Table 12: Move 2: $N_{step\ P}$ = 25 (21.18%), $N_{step\ S}$ = 24 (20.16%)

Corpora	No of steps		Step/Move 2 (%)		Step/Corpus (%)	
	P	S	P	S	P	S
S 1A	1	1	4	4.16	0.84	0.84
S 1B	15	11	60	45.83	12.71	9.24
S 1C	1	9	4	37.5	0.84	7.56
S 1D	8	3	32	12.5	6.77	2.52

S1A = Counter-claiming; S1B = Indicating a gap; S1C = Question-raising; S1D = Continuing a tradition; P = Physical corpus; S = Social corpus

Regarding the position of Move 2 in the corpus analyzed, out of 13 physical RAs which included this move, all of them (100%) utilized this move in the second position, and 7 RAs (35%) did not employ this move at all. Out of 16 social RAs which included this move, 15 RAs (93.7%) deployed this move in the second position, one RA (No.9) (6.2%) utilized this move in the third position and 4 RAs did not utilize this move at all. In other words, the authors of these RAs have not stated any negative attitude or challenge to the previous research because they did not feel any need.

The first step in establishing a niche is an attempt to counter – claim that the previous work is hopelessly misguided. Utilizing Step 1A by the authors shows a radically opposite attitude to the previous research that even leads to the rejection of its finding. In the current study, Step 1A was realized through this linguistic exponent: A) Contrastive comments. Our analysis revealed that from among 20 physical RAs, only RA 1 (5%) and from among 20 social RAs, only RA 15 (5 %) radically challenged the previous research. This shows that there is a low tendency among physical and social authors to counter claim and they prefer weaker strategies of challenging the previous research to establish a niche. The following is the example of this technique found in the corpus.

A) **Social RA. No. 15:** *However, this theoretical result is not supported empirically for various economics.*

While Step 1A is a strong challenge of previous research and it tries to criticize radically, Step 1B tries to imply that there are aspects of the research field still deserving of further enquiry, that the previous research suffers from some limitations, that there is a problem that hasn't been dealt with, there is a question that remains unanswered. However, by highlighting this need and gap, the previous research is never totally rejected. Analysis of the RAs which utilized Step 1B revealed different linguistic exponents: A) Negative or quasi – negative quantifiers (little, few, no, not, less, seldom) B) Adjectives C) Lexical negation. Analysis of the RAs revealed that Step 1B is used in 12 physical RAs out of 20 physical RAs. Therefore, the frequency of occurrence of Step 1B is 60 percent in physical RAs, and 9 social RAs out of 20 social RAs, used Step 1B which is equal to 45 percent. This step is the most favorite step of Move 2 in both disciplines. The main objective is to offer a negative evaluation of some feature of previous research, though total and radical rejection is always avoided. See the examples in this regard below.

A) **Physical RA. No. 10:** *Only a few works focusing on SBN domain……..*
B) **Social RA. No. 1***: One environmental factor that has received relatively limited attention is*
C) **Social RA. No. 9:** *Despite these divergent ……., research on earning inequality has not systematically examined the factors that contribute to each.*

Step 1C is an obvious attempt to raise questions about the previous research. By using this step, the authors tried to raise one or a set of questions that hadn't been answered in previous studies. Compared to Step 1A and 1B the challenge of previous research is weaker. Analysis of the RAs revealed that this step was performed through expressed questions in the text. Analysis of the RAs revealed that from among 20 physical RAs, one RA used step 1C (Question-raising) which equals to 5 percent, and from among 20 social RAs, 8 RAs included this step which is equal to 40 percent. The following are the examples of step 1C.

Physical RA. No. 1: *In this favorable operating…..we quantitatively address the following questions: up to which ……..perturbations?*
Social RA. No. 20: *Thus whether strengthening IP rights leads to ……..is an empirical question.*

The weakest challenge to the previous research territory is expressed through Step 1D. The authors leave no linguistic signal implying a challenge. They continue a tradition, they talk about practice or phenomena in general terms in order to convince the reader that previous researchers

haven't explored the potential orientations and issues. Analysis of the RAs revealed that from among 20 physical RAs, 8 RAs used Step 1D (Continuing a tradition) which equals to 40 percent, and from among 20 social RAs, 3 RAs included this step which is equal to 15 percent. The following are the examples of step 1D.

Physical RA. No. 8: *From this point of view, it is of interest to analyze the…….*
Social RA. No. 9: *Our research follows previous studies that have examined various aspects of earning inequality……..*

Move 3: Occupying the Niche

After establishing a territory and niche which are achieved through Move 1 and Move 2, authors find themselves in a better position to occupy the niche. In fact, by using previous moves, authors pave the way for putting forward their own research. Now that the reader is convinced about the importance and necessity of the current research, he may wish to be informed briefly about the exact goals of the research, procedure and methodology of the research, principle outcomes, and the structure of the present research. This move is fulfilled through the following constituent steps: (1A) Outlining purposes, (1B) Announcing present research, 2 Announcing principle findings, 3 Indicating RA structure (Swales, 1990).

The results showed that 100 percent of physical and 100 percent of social writers included this move in the RAs. Table 13 shows the percentage of occurrence of Move 3 and its steps.

Table 13: Percentage of occurrence of Move 3 and its steps

Move	Step	physical	social
Move 3 :	Occupying the niche	100%	100%
or	Step 1A. Outlining purposes	60%	45%
	Step 1B. Announcing present research	65%	75%
	Step 2. Announcing principle findings	15%	65%
	Step 3. Indicating RA structure	35%	70%

As show in Table 13, 100 percent of physical and 100 percent of social authors occupied the niche for their study. Move 3 seems to be an obligatory one and authors are obliged to resort to one or a combination of the steps of Move 3 in order to outline the objectives of the study, to talk about the methodology of research, to make minimal reference to the results of the study or indicate the way they have structured the RA. Out of 20 physical RAs, and 20 social RAs which utilized Move 3, 12 physical RAs (60%), and 9 social RAs (45%) included Step 1A, and 13 physical RAs (65%), and 15 social RAs (75%) included Step 1B in their introductions respectively. It is worth mentioning that from among 12 physical RAs that utilized Step 1A, 7 RAs (7, 9,11,13,14,16,18) used this step individually (i.e. without combination with Step 1B) and 5 RAs (1,3,15,17,20) deployed this step in combination with Step 1B. Out of 9 social RAs that had Step 1A, 4 RAs (10,12,13,17) utilized this step individually, but 5 RAs (4,6,11,18,20) employed this step in combination with Step 1B.

Like Step 1, Steps 2 and 3 of Move 3 were utilized in the introductions of RAs of the two disciplines in different numbers. Out of 20 physical RAs, and 20 social RAs which used Move 3, 3 physical RAs (15%), and 13 social RAs (65%) included Step 2. Step 3 was used in 7 physical RAs (35%) and 14 social RAs (70%).

The distribution of the steps within Move 3 in physical and social introductions was different. Considering physical RAs, Step 1A proved to be the second most frequent step in Move 3 and Step 1B is the most frequent step. The ratio of the different steps within Move 3 indicates a lack of preference for Step 3.2 and 3.3 in the physical corpus.

Step 1A is the least frequent step in Move 3 in the social corpus. Step 1B is the most frequent step. Step 3.3 proved to be the second most frequent step and Step 3.2 occurs in 13 social introductions. Table 14 shows the count of steps within Move 3 in physical and social introductions.

Table 14: Move 3: $N_{step\ P} = 36\ (30.50\%)$, $N_{step\ S} = 55\ (46.21\%)$

Corpora	No of steps		Step/Move 1 (%)		Step/Corpus (%)	
	P S		P	S	P	S
S1A	12	9	33.33	16.36	10.16	7.56
S1B	13	19	36.11	34.54	11.01	15.96
S2	4	13	11.11	23.63	3.38	10.92
S3	7	14	19.44	25.45	5.93	11.76

S1A = Outlining purposes; S1B = Announcing present research; S2 = Announcing principle findings; S3 = Indicating research article structure; P = Physical corpus; S = Social corpus

In total, Move 3 appeared in 40 out of 40 RAs included in the corpus. This indicates the importance of it among the members of the academic circle and their well-awareness of the significance and concluding role it serves. This move was fulfilled through either individual application of its constituent steps or a combination of them. Step 1, as the obligatory element in Move 3 according to Swales (1990, p.159), occurred in 20 physical RAs (100%), and 19 social RAs (95%). This step failed to appear in only one social RA (No.7). Step 2 did not appear alone in physical RAs while it appeared individually in only one social RA (No.7). Step 3 did not occur alone in the RAs analyzed in the corpus.

Regarding the position of Move 3 in the RAs analyzed, this move occupied the final position in 20 physical RAs. In social RAs, this step did appear in the final position in 19 RAs, and occupied the second position in one RA (No.9).

Step 1A is an attempt to highlight the objectives of the research to be reported, the aim of this step is to inform the reader about the purposes of the current research. By using this step, the author tries to reveal what he wants to explore, examine, solve, answer, etc. In the current study, Step 1A was realized through the following linguistic exponents: A) Expressed concern, purpose, aim, objective, intention B) Expressed examination, investigation, explorations C) Expressed attempts D) Expression of focus and concentration. Our analysis revealed that from among 20 physical RAs, 12 RAs included Step 1A (outlining purposes) in the RAs which is equal to 60 percent, and from among 20 social RAs, 9 RAs included step 1A in the RAs which is equal to 45 percent. The following are examples of step 1A.

A) **Physical RA. No. 7:** *The purpose of the paper present paper is to extend …*
B) **Social RA. No. 18:** *In this paper, I investigate ……..*
C) **Social RA. No. 6:** *This study partially attempts to fill this gap,……..*
D) **Physical RA. No. 15:** *…….which is the main focus of the present review.*

Step 1B is an attempt from the author's part to reveal the methodological issues of the research to be reported. The reader is informed through Step 1B about different issues such as data, method of analysis and research, period of time in which the research was carried out, etc. Thirteen

physical authors (65%) and 15 social authors (75%) used step 1B in their RAs. The function of this step is giving a summary of methodological issue of the current research. See the examples in this regard below.

Physical RA. No. 10: *In this paper, we have used the NLC method to study the domain…*
Social RA. No. 3: *Our research analyzes data from the 1988 to 2004-2008 General…….*

The second step for occupying the niche is an attempt to report the major outcomes of the current research. Before entering the subsequent sections of the RA, the reader receives an essence of the important results of the research. Fifteen percent of the physical authors in the analyzed RAs utilized this step, while 65 percent of social writers include this step in their RAs. The objective is to indicate that the present research has found the solutions and answers, that the current research has been successful, that it has achieved the outlined goals. The following are examples of step 3.2.

Physical RA. No. 5: *The results show that the output image …*
Social RA. No. 15:*…, our empirical results indicate that the……..*

The third step for occupying the niche is an attempt to indicate the structure of the RA. The author provides a general picture of the RA. To achieve this he/she may mention the number of sections explicitly or show their order of occurrence in the RA. Analysis of the RAs revealed that indicating the structure of RA may take different form. Analysis of the RAs showed that 35 percent of physical authors used Step 3 of Move 3, and 70 percent of social authors used Step 3 in their RAs. The major goal is to indicate in varying degrees of detail the structure and occasionally the content of the remainder of the RA. Step 3, typically, was the final step of the introduction. See the examples in this regard below.

Physical RA. No. 2: *The review is organized as follows. In section 2 we…section4-6 focus ….*
Social RA. No. 14: *The paper is organized as follows. Section 2 discusses……..Section 3 presents the……The last section concludes.*

4. Discussion

As previously mentioned, in this paper we report on an analysis of research article introductions from two different disciplines, physical and social sciences. We have adopted a genre analytic

method, namely move analysis, in order to investigate whether there are statistically significant differences in research article introductions, between physical and social disciplines as far as move structure is concerned. In this study move structure is confined to move and step frequency. Swales' (1990) CARS model was utilized for the analysis and it proved to be quite an acceptable means of analysis of the corpus. The model could effectively explain the rhetorical organization of research articles introductions in physical and social sciences in terms of their move structure. The results of this study showed that there is no significant difference between them as far as the move frequency is concerned. But, the results indicated that the frequency of steps in the introduction section of physical and social sciences research articles is radically different. In order to execute the three moves, both physical and social writers utilized the eleven steps, but with different frequencies. The distribution of the steps within the three moves was found to be unevenly presented in physical and social sciences.

Move 1 is represented by 57 steps (48.30%) and is therefore the most common move type in the physical corpus. It is followed by Move 3, which is represented by 36 steps (30.50%) of the total number of steps. In contrast to the substantial representation of the instances of Move 1 and 3, Move 2 is represented by only 25 steps (21.18%) in the analyzed introductions. The communicative goals the physical authors thus considered the most important are the establishment the general territory in which it operates and the detailed description of their own research.

The distribution of the steps in the social corpus is dissimilar. Move 3 is represented by 55 steps (46.21%) and is followed by Move 1, representing 40 (33.61%) of the steps. Similarly to the physical corpus, the least frequent move type in the social introductions was Move 2 with 24 steps (20.16%). In the social corpus the authors of the analyzed introductions laid emphasis on two objectives: to occupy the niche by providing a large amount of details about the research and to establish the territory with a substantial review of the literature.

On the basis of the above, it can be stated that in the case of Move 1, the percentages display a difference between the physical and the social corpus (48% vs. 33%). Move 2 proved to be the least frequent move in both corpora (21% vs. 20%) and Move 3 plays a slightly more important role in the social than in the physical corpus (46% vs. 30%).

This statement is supported by two well-made points. First, centrality claims and topic generalization can be present to different degrees across disciplines. While centrality claims and topic generalization are not frequent in social introductions, they are usually well-developed and occupy an important position in physical introductions. Second, not all the steps that belong to the third Move are commonly found in physical science introductions. Report of principal findings is only found in four of the 20 introductions. Similarly, the percentage of physical introductions closing with step 3 is low. In contrast to the physical science introductions, the step announcing principal findings and indicating RA structure are usually well-developed and occupy an important position in social science introductions.

The findings of this study can be regarded as a follow-up of previous studies. Previous studies have not only found interdisciplinary variation (Holmes, 1997) but also variation across related fields and subdisciplines (Ozturk, 2007; Samraj, 2002). Holmes (1997) has found variation across the hard science and the social sciences in discussion sections, and Ozturk (2007) compared the move structure of research article introductions between two sub-disciplines of applied linguistics, namely second language acquisition and second language writing research. Twenty RAs were analyzed in terms of Swales' (1990) model. The findings revealed that most of the RAs followed the sequence of Move 1 - Move 2 - Move 3 in the field of second language acquisition. Moreover, in the field of second language writing, two different move structures were almost equally predominant in the organization of RA Introductions (M1-M2-M1-M3, 40%; M1-M3, 30%). The present study differs from previous studies in two important aspects: it points to the existence of variability in the *introduction sections of two different disciplines, as different as physical and social sciences* and provides detailed data and tables to support the authors' statements regarding disciplinary variation.

Moreover, analysis of the physical and social science introductions has indicated that discussion of previous research often undertakes a particular purpose, such as to provide support for the topic generalization or centrality claims being made or to justify the gap created. The study has revealed that reference to previous literature is not an element that is just found in Move 1. It can play a prominent role in Move 2, when it is used to justify the gap created. It seems then that the literature review or discussion of previous research can function as the realization of a number of steps, such as topic generalization and gap indication. The findings of this study are in line with Samraj study

(2002) which compared RA introductions from two related fields, Wildlife Behavior and Conservation Biology, using Swales' (1990) model. Three moves were identified in her work. The results revealed disciplinary variation in the structure of this genre and some similarities in the patterns proposed. The study revealed that reference to previous literature is not an element that is just found in Move 1. But it served different rhetorical functions in each move: presenting background information in Move 1, Step 2, elaborating on the gap in research in Move 2, Step 1 and specification of the goal of the study in Move 3, Step 1.

The findings also focus on the linguistic features the writers utilize to serve their communicative purposes. The first move, establishing a territory, occurs in all introductions. It is a typical opening move for the majority of physical and social introductions. The communicative function of this first move type is to introduce the topic of the study. Move 2 usually includes some negative forms (negative or quasi – negative quantifiers, lexical negation, negation in the verb phrase) because the writers try to imply that the previous researches suffer some limitations, that there is a problem that has not been dealt, and that a question remains unanswered. Move 3 signifies the specific purpose of the study, states the main findings. Such findings may have some implications for EAP writing pedagogy; student should be aware of the construction and organization of research article introductions not only in a particular subdiscipline (Ozturk, 2007; Samraj, 2002) but also across different disciplines. This line of study may be extended to other disciplines to make more valid generalizations on disciplinary variations.

5. Conclusion

This study was an attempt to identify move structures of the introduction sections of physical and social sciences research articles in English and determine the variations across disciplines. Swales' (1990) CARS model was utilized for the analysis and it proved to be quite an acceptable means of analysis of the corpus. The model could effectively explain the rhetorical organization of research articles introductions in physical and social sciences in terms of their move structure.

The contrastive analysis of physical and social research article introductions showed that there is no significant difference between move frequency of introduction sections of physical and social sciences research articles, but there is a significant difference between their step frequencies. This means that both physical and social writers utilized the three moves with similar frequencies, but

the execution of these three moves was different in these two disciplines. In order to execute the three moves, both physical and social writers utilized the eleven steps, but with different frequencies.

We review here some of the dimensions along which introductions may vary, which instructors could include in their discussions. In the first move, centrality claims and topic generalization can be present to different degrees across disciplines. While centrality claims and topic generalization are not frequent in social introductions, they are usually well-developed and occupy an important position in physical introductions. Analysis of the physical and social science introductions has indicated that discussion of previous research often undertakes a particular purpose, such as to provide support for the topic generalization or centrality claims being made or to justify the gap created. The results of this study seem to suggest that reference to previous literature is not an element that is just found in Move 1. It can play a prominent role in Move 2, when it is used to support gaps in previous research. It seems then that the literature review or discussion of previous research need not just appear in the first move but can also be embedded within other steps, such as indicating a gap. In the second move, out of the four steps in the Swales' (1990) model for creating a niche, "indicating a gap" is used most often in both disciplines.

In the final Move, step 1, outlining purposes or announcing present research, is present in almost all 40 RAs analyzed. This step failed to appear in only one social RA (No.7). Not all the steps that belong to this third Move are commonly found in physical science introductions. Report of principal findings is only found in four of the 20 introductions. Similarly, the percentage of physical introductions closing with step 3 is low. In contrast to the physical science introductions, the step announcing principal findings and indicating RA structure are usually well-developed and occupy an important position in social science introductions. Differences in the execution of the three moves in these RA introductions are significant enough that students need to be made aware of them. Hyland (2002) stated that the mastery of genre knowledge would help students in becoming members of their disciplinary community. The results of this comparative study provide support for the view that instructors need to point to possible variations in generic structure across disciplinary boundaries.

The findings of the present study may have some implications for EAP writing pedagogy. First, in academic writing, non-native researchers may need to be made aware of the generic structure of the research article introduction. The results of the study can be incorporated into teaching so that it may help students and non-native researchers better understand the generic organization of RA introduction and specific features of each move and how moves are used in writing. The fact that an awareness of the genre conventions for language learners is helpful in their mastery of the genre is clearly apparent in the literature and its merits are explained by many scholars of the field (Holmes, 1997; Hyon, 1996; Swales, 1990). Furthermore, as instruction in article writing for non-native researchers is proven to be necessary (Dudley-Evans, 1994; Swales, 1990), results obtained from this study can be beneficial for instructors who embark upon teaching non-native researchers who need to know how to write English research articles introduction. Second, novice writers and non- native researchers may need to be made aware of the possible differences in generic structure of RA introductions across disciplines. Such differences, if there are any, should first be identified precisely so that may be taught to students to gain a better understanding of the way the generic structures are organized across disciplines. An awareness of the presence or absence of such differences will certainly help us in EAP as well as in teaching non-native writers to write acceptable research article introductions in physical and social sciences. It is hoped that the findings of the current study may provide teachers with relevant information that can help to improve their teaching approach and materials for the teaching of research writing to native speaker and non-native speaker and the ESP courses.

Findings of this study might present the current members of these communities and non-native researchers seeking to become members of these disciplinary communities with useful information about the genre structure and specific moves and constituent steps of the introduction section of physical and social sciences articles. By understanding the linguistic and disciplinary variation in terms of generic structure, students and non-native writers will increase their chances to communicate their research findings via medium of English in journals and effectively participate in the international academic discourse communities. In this study only two disciplines were inspected. Further information needs to be gathered from other disciplines to confirm the findings of this study and to enable us to claim that we know the genre research article introduction.

References

Ahmad, U. K. (1997). *Scientific research articles in Malay: A situated discourse analysis*. Unpublished doctoral dissertation, The University of Michigan, Ann Arbor.

Anthony, L. (1999). Writing research article introductions in software engineering: How accurate is the standard model? *IEEE Transaction of Professional Communication, 42,* 38-46.

Atai, M. R., & Sahraneshin Samani, A. (2012). Exploring genre variations in research article introductions within a single subdiscipline: EOP versus EAP. *The Asian ESP Journal, 8*(1), 5-23.

Bhatia, V. K. (1993). *Analyzing genre: Language use in professional setting.* London: Longman.

Brett, P. (1994). A genre analysis of the results section of sociology articles. *English for Specific Purposes*, *13*(1), 47-59.

Connor, U. (2000). Variation in rhetorical moves in grant proposals of US humanists and scientists*, Text, 20*, 1-28.

Dudley-Evans, T. (1994). Genre analysis: An approach to text analysis for ESP. In M. Coulthard (Ed.), *Advances in written text analysis* (pp. 219- 28). London: Routledge.

Habibi, P. (2008*).* Genre analysis of research article introductions across ESP, psycholinguistics and sociolinguistics. *IJAL, 11*(2), 87-111.

Holmes, R. (1997). Genre analysis and the social science: an investigation of the structure of research article discussion sections in three disciplines. *English for Specific Purposes, 16*, 321-337.

Hopkins, A., & Dudley-Evans, T. (1988). A genre-based investigation of the discussion sections in articles and dissertations. *English for Specific Purposes, 7*, 113-121.

Hyland, K. (2002). Options of identity in academic writing. *ELT Journal*, *56*(4), 351-358.

Hyon, S. (1996). Genre in three traditions: Implications for SEL. *TESOL Quarterly*, *30,* 693-722.

Kuhi, D., & Behnam, B. (2011). Generic variations and metadiscourse use in the writing of applied linguistics: A comparative study and preliminary framework. *Written Communication, 28,* 97-141.

Lee, N. I. (2011). Academic and journalistic writing in English and Japanese: A contrastive study on stance and engagement expressions. *Journal of Modern Languages, 21*, 59-71.

Nwogu, N. K. (1997). The medical research paper: structure and functions. *English for Specific Purposes, 16* (2), 119-138.

Ozturk, I. (2007). The textual organisation of research article introduction in applied linguistics: Variability within a single discipline. *English for Specific Purposes, 26*(1), 25-38.

Peacock, M. (2002). Communicative moves in the discussion section of research articles. *System, 30*(4), 479-497.

Posteguillo, S. (1999). The schematic structure of computer science research articles. *English for Specific Purposes, 18,* 139-160.

Salager-Meyer, F. (1990). Discoursal flaws in medical English abstracts: a genre analysis per research and text type. *Text, 10*, 365-384.

Samraj, B. (2002). Disciplinary variation in abstracts: The case of wildlife behavior and conservation biology. In J. Flowerdew (Ed.), *Academic discourse* (pp. 105-120). New York, NY: Longman.

Samraj, B. (2005). An exploration of a genre set: Research article abstracts and introduction in two disciplines. *English for Specific Purposes, 24*(2), 141-156.

Swales, J. (1990). *Genre analysis*: *English in academic and research settings*. Cambridge: Cambridge University Press.

Swales, J., & Najjar, H. (1987). The writing of research article introductions. *Written Communication, 4,* 175- 192.

Thompson, D. (1993). Arguing for experimental "Facts" in science. *Written Communication, 10,* 106- 128.

Williams, I. A. (1999). Result sections of medical research articles: analysis of rhetorical categories for pedagogical purposes. *English for Specific Purposes, 18*(4), 347-366.

Yang, R.Y., & Allison, D. (2003). Research articles in applied linguistics: Moving from results to conclusions. *English for Specific Purposes, 22*(4), 365-385.