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Local to Global Discourse Communities

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Foreword

International journal reviewing faces a huge challenge in avoiding the imposition within local contexts of so-called internationally accepted knowledge (based on papers published internationally in the field). AESP does not have any easy solutions to this issue but does always attempt to raise the issue for discussion.

John Baker provides an interesting example, adding a locally designed qualitative approach to a common quantitative approach frequently applied internationally. In *A Checklist for Use with the Lexile Readability Formula When Choosing Materials for Writing Center Self-Access Libraries*, he suggests a two-step approach to checking the readability of materials in self-access centers. He contributes an original checklist to the quantitative evaluation of texts and students' reading levels via lexile measures. His study provides a much-needed qualitative evaluation of those features that the Lexile formula cannot not explore.

In *A Genre Analysis of Malaysian TESL Undergraduates' Projects and TESL-related Research Articles: A Comparative Study*, Ali Sorayyaei Azar, Yap Pei Yi and Nur Adzdzin Azhar also adopt a commonly applied approach, in this case in the realm of genre analysis. The analysed rhetorical move patterns and meta-discourse stance features in conclusion sections of students' final year reports. Their findings indicate an 'inappropriate' usage of both rhetorical move patterns and stance features in Malaysian TESL undergraduates' final year projects. Asian ESP has always taken the position, that while genre studies can be useful in all contexts, it is also important to adapt so-called genre knowledge to local contexts rather than to promote some kind of bland international uniformity of discourse patterns.

In a similar examination of rhetorical moves, Eri Kurniawan and Arif Husein Lubis built a corpus of 62 research article findings and discussion sections for their paper, *A Comparative Move Analysis on the Qualitative Findings and Discussion Sections Written by EFL Undergraduate Students*. Sourcing articles from a public university in English language education, in Indonesia, Kurniawan and Lubis use both top-down and bottom-up approaches to explore the rhetorical features and delineate the linguistic realizations of the moves, respectively. Notably, they found an absence of robust argumentation and non-standard configurations, which all point to the pressing need to develop students' rhetorical repertoires.

In *Making Logical-Semantic Relations in Science Writing: Korean Graduate Students' Use of Relative Clauses in Science and Engineering Journal Papers*, Jungyoung Park and Dong Wan Cho examine the way English relative clauses are used in original, pre-published manuscripts written by Korean science and engineering graduate students and junior researchers. In this pedagogical grammatical study, they identify differences in the way relative clauses are used by Korean science and engineering graduate students and junior researchers compared to those used in leading science and engineering journal papers in terms of their frequency, structure, and distinctive attributes. Differently from the genre studies frequently reported in AESP, this study has a stronger case for some form of conformity to what they term "more suitable and acceptable ways within their respective discourse communities".

Further on the theme of gaining access to a community of practice, in *Lexical Bundles in the Discussion Sections of Applied Linguistics Research Articles: A Cross-Paradigm Analysis*, Milad Mirzai, Buhruz Lotfi Gaskaree, Kenneth Geoffrey Richter, and Mohammad Doosty herald the significance of possessing lexical knowledge and formulaic language (Simpson–Valch & Ellis, 2010) for accelerated L2 acquisition. Picking up on Biber and Barbieri's "building blocks of discourse" (2007, p. 263), the authors' exploratory, comparative study focuses on the discussion sections of 150 applied linguistics research articles and identifies the most frequent lexical bundles and their structural patterns. The paper also reports on the variations in frequency and structural patterns of lexical bundles across quantititave, qualititative, and mixed-methods research articles, offering preliminary evidence that methodological paradigms call for particular sets of lexical bundles.

In *Genre Analysis of the Method Sections in Applied Linguistics Research Articles: A Cross-Linguistic Study*, Maryam Farnia and Saghar Baratizade analyzed 300 method sections of applied linguistics research articles from international English, Iranian local English, and Iranian local Persian journals. Focusing on the rhetorical structures of the method sections, they focused on generic patterns and found that Persian writers were considerably more prolific than their international and local English counterparts in their use of moves to develop the research method section. Variations aside, Farnia and Baratizade also found commonalities between local English and international articles. To gain further insights into the authorial process, they interestingly recommend interviewing authors to understand their linguistic choices.

By contrast, (Luna) Jing Cai brings us back to the preparation-for-publication stage, in *How Do Chinese Novice Academic Writers Approach Tasks in a Genre-based Classroom? A Case Study of Genre Knowledge Uptake*. The focus here is on learner uptake of genre knowledge and looks at the engagement by two individuals in classroom genre tasks throughout an entire semester. Jing Cai identifies that learning style and general English proficiency are influences that determine learning journeys, with top-down learners proving more adaptable. She also notes that Chinese EFL learner characteristics have a significant impact on learning outcomes and the uptake of genre knowledge, due to the fixation on grammar and vocabulary, hence the need for a shift in their paradigm.

In *The Relationship among EFL Learners' Collaborative Writing, Critical Thinking, and Writing Anxiety*, Maryam Soleimani, Shiva Najafi, and Mortezta Sa'adatpourvahid advocate collaborative writing to increase interactive learning. Although their study identifies a positive correlation between collaborative writing and critical thinking, it also picks up on a negative relationship between both are considered in conjunction with writing anxiety. The authors argue the importance of improving learners' critical thinking abilities in order to lessen writing anxiety and recommend building students' self-confidence by providing the right learning environment, in which positive attitudes, responsibility, and reflection are promoted. Their local Iranian study of 80 intermediate female students has implications for policymakers and curriculum developers of learner-centered programs, as each will have its own particular requirements when it comes to reducing apprehension.

Neslihan Onder-Ozdemir and Jack Pun's paper, *The Development of a Needs-Based Curriculum to Teach Medical English*, also concerns a needs-based approach. Theirs is based on a four-year needs analysis study of students' learning medical English. The authors found that the acquisition of sub-technical vocabulary and students' unfamiliarity with the genre of medical research articles were daunting. A lack of instructional support also impeded the development of their medical English competency. In order to overcome these obstacles, and having evaluated learners' perceptions and achievement of learning outcomes, Onder-Ozdemir and Pun advocate medical students' involvement in the learning process. Their data indicates the likelihood of student satisfaction is much higher if needs analysis and curricular changes are implemented.

Onder-Ozdemir and Pun's argument is that a needs-based curriculum is conducive to developing students' linguistic abilities in their respective specialties in non-English-speaking countries worldwide. Their claims of increased motivation, satisfaction, and success echo those regulary postulated by AESP and champion the significance of locally-divined data for an international audience.

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A Checklist for Use with the Lexile Readability Formula When Choosing Materials for Writing Center Self-Access Libraries

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Abstract[1]

Writing center self-access libraries have a firm place in North American and non-North American contexts, as do the composition-related materials therein, i.e., rhetorics (e.g., anthologies of paragraphs and essays); however, as the literature has historically shown, when choosing texts for library shelves, readability needs to be considered.

Traditionally, the readability of rhetorics has been explored through single-step quantitative approaches that employ readability formulae (e.g., the Lexile readability formula). These formulae have been praised for their ability to effectively measure two variables (i.e., semantic and syntactic difficulty) but have been criticized because they do not explore the many other features that influence text difficulty. To embrace the strengths and address the weaknesses of

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these formulae, this paper suggests a two-step hybrid method: (a) a quantitative evaluation of texts and students' reading levels via Lexile measures and (b) a qualitative exploration of the features that the Lexile formula does not explore (i.e., via a checklist). To provide a checklist for this procedure, this sequential mixed methods study explored what features not considered by the Lexile readability formula affect the reading experiences of students when reading exemplars from rhetorics. The study found that 14 features beyond the two measured by the Lexile readability formula influence users' difficulty with the material. This paper also discusses the relevance of the study to the field and poses suggestions for future study.

Keywords: Writing Center Administration, Lexile, Readability, Rhetorics, Self-access

Introduction

In his 1984 article The Idea of the Writing Center, North firmly established the notion that self-access libraries have a place in writing centers. Since then, this idea has become a historical constant (Baker, 2018, Childers, 2006; Harris, 1992; Simpson, 1985), as have the composition-related texts that directors choose to stock their shelves with (Baker, 2019; Kincead & Harris, 1993). A review of the literature also shows that writing centers outside the North American context (e.g., in Asia), which are fewer in number (Paiz, 2017; Tan, 2011) but growing (Chang, 2013; Murphey, Falout, Elwood & Hood, 2009), also provide self-access libraries that offer students an array of English composition-related texts, including rhetorics, which are rhetorically organized anthologies of paragraphs and essays "which explicate major rhetorical forms, present sample texts exemplifying major rhetorical patterns, and offer procedures to show students how to reproduce these patterns and genres in their own writing" (Ferris & Hedgcock, 2005, p. 130)[2].

Accepting that self-access resource libraries have an important place in writing centers is one thing; stocking them with materials is another matter (Baker, 2019). And this is where the challenge lies because, as Baker noted, the process of selecting texts (e.g., rhetorics) for writing center resource libraries, in both North American and non-North American settings (e.g., in Asia) is not simply a matter of purchasing texts and placing them on shelves. Instead, it requires

[2] Rhetorics are not to be confused with thematic readers, anthologies which are primarily thematically organized.

writing center staff to determine which texts are appropriate for the students who may visit the center.

Appropriacy (i.e., having materials at the appropriate reading levels) is essential, for (a) rhetorics provide genre-specific models of academic writing and (b) apprenticing writers who engage genre-specific materials as part of the reading-writing relationship tend to exhibit competency in the use of conventional features when composing their own texts, with as much as a .50 to .70 correlation (Grabe, 2003, 2016). However, such gains cannot be realized unless students can comprehend the reading materials that they encounter. Specifically, students "can't learn much from books they can't read" (Allington, 2002, p. 16). To address this problem, writing center staff must undertake a procedure "familiar to all those who choose books for their own use" (Gilliand, 1972, p. 12). They need to select texts that will be a good fit for the readers who might use them (Baker, 2019), the study of which has come to be called readability (Gilliand, 1972).

Literature Review

Historically, readability has been defined in many congruent ways, with each definition emphasizing the importance of considering the text, the reader, and the interaction between the two. A review of the many definitions of readability that have been formulated illustrates this point (see Chall, Bissex, Conrad, & Harris-Sharples, 1996; Dale & Chall, 1949; Gilliand, 1972; Harrison, 1980; Kintsch & Miller, 1981; Kintsch & Vipond, 1979; Klare, 1963; Schirmer & Lockman, 2001). One metaphor-based definition that is especially informative is from Chall, Bissex, Conrad, and Harris-Sharples' (1996). These authors likened readability to an iceberg. Beneath the water level, there are "various sources of difficulty. The more difficult the passage, the greater the ice beneath" (p. 6). This definition elucidates the concept of readability because it indicates that readability, similar to an iceberg, is not one solid, homogeneously transparent entity. Instead, it is a heterogeneous mix of features that constitute what Goodman (1967) called the *psycholinguistic guessing game of reading*—a game that requires a consideration of the many features that contribute to the complex phenomenon known as reading.

A historical meta-analysis (1781 to present) confirms our field's concern with this multifaceted phenomena. As presented in Table 1, the literature shows that researchers have historically cited one or more features that contribute to readability, but no study has considered all of these features in one work, something that needs to be considered when holistically exploring how readable texts are for the students who may read them.

Table 1. Features Commonly Cited in Readability Literature

1. Vocabulary: The number of unfamiliar, abstract, figurative, or technical words in a text. (1912-2019)

   Albright, 1927; Allen & Garton, 1968; Al-Nujaidi, 2003; Anderson & Freebody, 1979; Buck, Tatsuoka, & Kostin, 1997; Chalmers, Humphreys, & Dennis, 1997; Davis, 1944, 1972; Dixon, LeFevre, & Twilley, 1988; Freedle & Kostin, 1991, 1992; Gates, 1926; Guo, 2008; Harris, 1948; Hilliard, 1924; Holmes, 1954; Huang, 1999; Irion, 1925; Lankamp, 1989; Ma & Lin, 2015; Ismail, & Soomro, 2019; Pressey & Pressey, 1921; Qian, 1998, 1999, 2002; Reed & Pepper, 1957; Salyer, 1990; Sholty, 1912; Statman, 1987; Thorndike, 1917; Ulijn & Salager-Meyer, 1998; Wendell, Weaver, Kingston, Bickley, & White, 1969; Yorio, 1971

2. Sentence Length: The number of words in each sentence. (1893-2019)

   Blau, 1982; Coleman & Miller, 1968; Coleman, 1962; Dwaik, 1997; Freedle & Kostin, 1992; Glazer, 1974; Guarino & Perkins, 1986; Guo, 2008; McElree, 2000; McElree, Foraker, & Dyer, 2003; McLaughlin, 1969; Mahmoud, 2015; Mikk, 2008; Mikk & Kukemelk, 2010; Pearson, 1974; Rusek, & Vojíř, 2019; Sherman, 1893; Yoo & Lee, 2017

3. Vocabulary in Context: How well the words or sentences surrounding unfamiliar words help the students to understand them. (1993-2018)

   Ahmad, Muhammad, Kasim, 2018; Ames, 1966; Bengeleil & Paribakht, 2004; Chern, 1993; Cooper, 1999; Davoudi, & Nafchi, 2016; de Bot, Paribakht, & Wesche, 1997; Dubin & Olshtain, 1993; Fraser, 1999; Haynes & Baker, 1993; Haynes, 1993; Laufer, 1997; Nassaji, 2003; Paribakht & Wesche, 1999; Rokni & Niknaqsh, 2013; Shen & Wu, 2009; Shen, 2005; Shokouhi & Askari, 2010

4. Background Knowledge Required: How familiar the students are with the topic of a text. (1781-2019)

   Al-Jahwari & Al-Humaidi, 2015; Alderson & Urquhart, 1988; Anderson, Reynolds, Schallert & Goetz, 1977; Carrell, 1987; Chiesi, Spilich, & Voss, 1979; Chihara, Sakurai, & Oller, 1989; Dochy, Segers, & Buehl, 1999; Florencio, 2004; He, 2002; Johnson, 1981; Johnston, 1984; Kant 1781; Khataee & Davoudi, 2018; Krekeler, 2006; Lin & Chern, 2014; Malik, 1990; Nelson, 1987; Nguyen, 2016; Recht & Leslie, 1988; Rumelhart, 1980; Sheridan, Tanaka, & Hogg, 2016, 2019; Steffensen & Colker, 1982; Steffensen, Joag-Dev, & Anderson, 1979; Tobias, 1995; Wiley, George, Rayner, 2016

5. Interest: How interested the students are in the topic presented in a text. (1895-2019)

   Ainley, Hidi, & Berndorff, 2002; Asher, 1980; Atamturk, 2018; Baldwin, Peleg-Bruckner, & McClintock, 1985; Bargh & Schul, 1980; Belloni & Jongsma, 1978; Benware & Deci, 1984; Bernstein, 1955; Boscolo & Mason, 2003; Brantmeier, 2006; Bugel & Buunk, 1996; Carrell & Wise, 1998; Chodkiewicz, 2016; Choi, 2006; Entin, 1981; Erçetin, 2010; Felkin & Felkin, 1895; Kelsen; 2016; Leloup, 1993; Lin, Zabrucky, & Moore, 1997; Mikk & Kukemelk, 2010; Schiefele &

Krapp, 1996; Schiefele, 1990, 1992; Schieffle & Krapp, 1996; Schraw and Lehman, 2001; Shnayer, 1968; Soemer & Schiefele, 2019; Stevens, 1979, 1980; Wade, 1992

6. Titles: How well the title of a text describes a text. (1932-2015)

   Ahmadi, 2011; Alba, Alexander, Hasher, & Caniglia, 1981; Allwood, Wikstrom, & Reder, 1982; Bartlett's, 1932; Black & Bern, 1981; Black & Bower, 1979; Bock, 1978 citd. in Bock, 1980; Bransford & Johnson, 1972, 1973; Carrell, 1983; Commander & Stanwyck, 1997; Crosson & Lesaux, 2013; Daniel & Raney, 2007; Dooling & Lachman, 1971; Fan & Liu, 2008, 2009; Freedle & Kostin, 1991, 1992; Gardner & Schumacher, 1977; Keenan, Langer, & Medosch-Schonbeck, 1985; Lemarié; Lorch Jr, & Péry-Woodley, 2012; Mohammed, 2015

7. Length: (a) The number of words in a text and (b) the number of words in a paragraph. (1894-2018)

   Bae & Lee, 2018; Li, 2018; Lewis, 1894; Lorch, 1989; Mandler & Johnson, 1977; Meyer, 1975; Miller, Cohen, & Wingfield, 2006; Noor, 2006; Reder & Anderson, 1980, 1982; Reder et al., 1986; Reder, Charney, & Morgan, 1986; Rothkopf & Billington, 1983; Rumelhart, 1975, 1977; Schallert, 1976; Schwartz & Flammer; 1981; Scott & Denny, 1895; Sjogren & Timpson, 1979; Smith & Swinney, 1992; Stein & Glenn, 1979; Tian, 1990; Thorndyke, 1977; Wiley & Rayner, 2000; Zhang & Hoosin, 2001

8. Logical Rhetorical Organization: How the ideas are arranged in a text to help them flow logically from one to another. (1975-2017)

   Abdollahzadeh, 2009; Alkhaleefah, 2017; Amiri, Zaidah, Adlina, 2012; Bereiter, 1978 ctd. in Calfee & Curley, 1984; Calfee & Curley, 1984; Carrell, 1984a; Carrell, 1987; Flick & Anderson, 1980; Fooh, 1989; Goh, 1990; Grimes, 1975; Lei, 2010; Meyer & Freedle, 1984; Meyer, 1975; Putra, 2012; Rouhi, Jafarigohar, & Hosseini, 2016; Selinker, Trimble, & Trimble, 1976; Saadatnia, Ketabi, & Tavakoli, 2016, 2017; Salmani, 2010; Sharp, 2002; Spiro & Taylor, 1980; Talbot, Ng & Allan, 1991; Yali & Jiliang, 2007; Zhang, 2008

9. Structure: How well a text is organized (e.g., an introductory paragraph which contains a clear thesis statement, body paragraphs that contain a topic sentence, supporting details, and a concluding paragraph). (1975-2011)

   Bridge, Belmore, Moskow, Cohen, & Matthews, 1984; Carrell, 1984b, 1987; Freedle & Kostin, 1991, 1992; Geiger & Millis, 2004; Kendeou, Muis, & Fulton, 2011; Kieras, 1978; Kintsch & Yarbrough, 1982; Lorch & Lorch, 1985; Mandler & Johnson, 1977; Murray & McGlone, 1997; Rickards, 1975; Thorndyke, 1975, 1977; Walters & Wolf, 1986

10. Signal Words: Whether a text contains words that indicate the flow of information (e.g., first, next, finally, etc.). (1917-2018)

    Aidinlou & Pandian, 2011; Cooper, 1984; Dechant, 1973; Geva, 1992; Meyer, 1975; Miccinati, 1975; Pauk, 1974; Quan, 2008; Rezaee & Norouzi, 2011; Roen, 1984; Short, 1994; Al-Surmi, 2011; Thorndike, 1917; Vacca, 1973; Xu, Pan, Dai, Zhang, & Lu, 2018

11. Punctuation: The use of periods (.), question marks (?), exclamation marks (!), commas (,), colons (:), semicolons (;), dashes/hyphens (-), ellipsis (. . .), etc. (1919-2007)

    Abbott, 2006; Backscheider, 1972; Carr, 1978; Carver, 1970; Durkee, 1952; Graesser, McNamara, & Louwerse, 2003; Hasbrouck, Ihnot, & Rogers, 1999; Nagy, 2007; Neff, 1932; Shih, 1992; Summey, 1919; Taillefer & Pugh, 1998; Van Diem, 1969; Weaver, Holmes, & Reynolds, 1970

12. Format: The physical appearance of a text (i.e., font, type size, spacing, line length). (1881-2018)

    Burt, 1959; Campbell, Marchetti, & Mewhort, 1981; Cohn, 1886; Crosland & Johnson, 1928; Griffing & Franz, 1896; Hartely and Mills, 1973; Hartley & Rooum, 1983; Haque, et. al., 2018; Hojjati & Muniandy, 2014; Hvistendahl & Kahl, 1975; Josephson, 2008; Kahl, 1974; Kravutske, 1994; Lonsdale, Dyson, & Reynolds, 2006; Lund, 1999; Moriarty & Scheiner, 1984; Muncer, Gorman, & Bibel, 1986; Paterson & Tinker, 1932 a, b; Pinelli, Glassman, & Cordle, 1982; Pyke, 1926; Robinson, Abbamonte, & Evans, 1971; Roethlein's, 1912; Schriver, 1997; Snow, 1925; 1999; Stone, Fisher, & Eliot, 1999; Tinker & Paterson, 1929; Tinker, 1963a, b; Van Rossum, 1997; Venezky, 1984; Weber, 1881 (see Pyke, 1926); Wieldon, 1995

13. Advance Organizers: Text based introductions prior to a text. (1960-2012) [a]

    Ausubel, 1960, 1977, 1978; Ausubel & Fitzgerald, 1961, 1962; Buckley & Clawson, 1975; Corkill, 1992; Diptoadi, 1991; Gurlitt, Dummel, Schuster, & Nückles, 2012; Luiten, Ames, & Ackerson, 1980; Mahar, 1992; Mayer, 1979; Meurer, 1985; Park, 2005; Preiss & Gayle, 2006; Ridwan, 1993; Stone, 1983; West, Farmer's, & Wolff, 1991

14. Adjunct Questions: Pre- and post-questions (i.e., the questions before and/or after a text). (1917-2018)

    Anderson & Biddle, 1975; Andre, 1987; Brunn, Weidlich, & Bastiaens, 2018; Caverly, 1926; Distad, 1927; Germane, 1920; Hamaker, 1986; Hausman & Rhodes, 2018; Holmes, 1931; Lin & Chen, 2006; Maxwell, 1921; McElroy, 1934; Rothkopf, 1965, 1966, 1970; Shokouhi & Parvaresh, 2010; Thorndike, 1917; Washburne, 1929

Note: Some researchers have only cited one feature (see Lewis, 1894) and thus are only in one category. Others have cited more than one feature and are therefore in two or more categories (see Freedle & Kostin, 1991).

[a] A brief (usually one paragraph), abstract prose passage presented in written form prior to the text.

Readability Research with Rhetorics

Although many features have been found to contribute to readability, as illustrated in Table 1, most of the studies that have investigated the appropriacy of rhetorics, albeit they are few in number and dated (Auvenshine, 1978; Cline, 1971; Dunn, 1983; Fox, 1978; Morrison, 1978), did so in native speaker (NS) contexts and explored only two features, namely, semantic (vocabulary) and syntactic (sentence length) difficulty. These studies, and most studies of the era, investigated these features by using hand-calculated readability formulae that focused on only these two features. Such formulae were typically employed because, although other formulae had been produced that included a limited number of features beyond these two, researchers generally concluded that further additions beyond these two variables added relatively little predictive validity compared to the added application time involved (Klare, 1975). As a result, studies have traditionally used a single step, three-stage quantitative process: (a) an assessment of the readability level(s) of the texts via a readability formula; (b) an examination of the students' reading levels with a standardized reading level test that could be correlated with the formula's results; and (c) a comparison of the two. And each of these studies have reported a gap between students' reading ability and the difficulty of the required texts.

Research with Rhetorics and English Language Learners (ELLs)

Work with rhetorics in NS settings is noticeably limited and dated, whereas work with ELLs is more recent but, again, relatively scarce. One recent work was completed by Baker (2019) with ELLs in an Asian Context (i.e., Taiwan). Noting that readability formulae have been validated for use with ELLs (see Greenfield, 2004), Baker employed a more recently developed computer-aided formula, specifically, the widely used commercial Lexile readability formula. Baker also found a mismatch between text readability levels and students' reading levels. That is, the majority of the exemplars (i.e., the paragraphs and essays) therein were too difficult for the target population, namely, ELL undergraduates who visited the campus writing center. Baker also noted that although his results were helpful, further research needs to be performed. Further research is needed because although readability formulae, such as the Lexile formula used in his study, provide good quantitative estimates of text difficulty via a consideration of two features (i.e., semantic and syntactic features), readability formulae have not been met with universal acceptance (Chall & Dale, 1995; Hiebert, 2011). That is, "they have been praised in that they provide an objective quantitative estimate of two factors which have been found to be good predictors of readability" (Baker, 2019, p. 6). However, "they have drawn criticism for the same reason. That is, they usually focus only on these two factors and thus do not explore other qualitatively assessable areas of readability which are highly relevant to text adoption decisions."

Of course, as with early formulae, critics have attempted to address the shortcomings of two-factor formulae by developing other formulae that explore additional features (e.g., Coh-Metrix). However, as with earlier alternative formulae, these formulae have not been widely used for a variety of reasons. Coh-Metrix, for instance, is a helpful formula that offers a wide variety of research opportunities (McNamara, Graesser, McCarthy, & Cai, 2014). However, although it addresses a limited number of additional features (albeit not all of the features listed in Table 1), it (a) has complicated algorithms, (b) does not offer sufficiently large text samples to allow for a complete analysis of typical texts, and (c) it has not been employed by the popular commercial standardized tests that evaluate students' reading levels as part of the three-stage process. Thus, as the Lexile formula successfully addresses each of these three areas, despite addressing only two features, it remains a widely used, commercial formula for text adoption purposes. As such, a hybrid approach needs to be employed to consider the other features that the Lexile formula does not measure.

Why Use a Hybrid Approach?

Such a hybrid approach, although still in its infancy, is promising, as Armbruster (2016) argued. For a hybrid approach, one uses a quantitative readability formula and then a qualitative checklist to explore the features not measured by readability formulae. Zakaluk (in 1985) and later with Samuels (Zakaluk & Samuels, 1988) provided an early example. They suggested two categories: (a) outside-the-head factors (i.e., readability as measured by readability formulae, e.g., the Fry formula and adjunct comprehension aids) and (b) inside-the-head factors (i.e., word recognition skills and knowledge of topic). Drawing on these two categories, Zakaluk suggested the use of a nomograph, a graph that visually sets the two factors alongside one another in a way that they can be plotted to determine the predicted level of comprehension as indicated on a center line.

Chall and Dale (1995) also offered a hybrid approach. Reviewing work on cognitive and organizational factors (Kemper, 1983; Kintsch & Miller, 1981; Meyer, 1982) and describing this work as focusing on *The New Readability,* they presented their 1995 readability formula (i.e., the Dale-Chall new readability formula) and offered two checklists to be used with it. The first checklist is used to judge reader characteristics, including whether readers are likely to be interested in the topic and the way that it is presented. The second checklist is used to determine the cognitive-structural aspects of a text: (a) the prior knowledge expected of the reader; (b) vocabulary and concepts; (c) overall organization; and (d) the use of headings, questions, illustrations, and physical features of the text.

Other researchers have also supported hybrid approaches (Fry, 2002; Gunning, 2003; Metametrics, 2010; Meyer, 2003; Weaver, 2000). Weaver (2000) explained that a hybrid approach is beneficial because "[u]sing readability formulae and subjective criteria [together] reduces the risk of presenting students with a seemingly appropriate book but one they cannot read due to format, language, structure, or content" (p. 33). Some researchers have been even more optimistic. Chall (1996), for example, predicted that hybrid approaches will be the future of readability.

Why Use a Hybrid Approach with the Lexile Readability Formula?

The readability formula chosen for this study (i.e., the Lexile readability formula) has received similar attention. Gunning (2003), for example, suggested that using a hybrid approach is prudent, as "although teachers might use Lexiles…, they need to go beyond the numbers… [and] complement the objective data yielded by the formula with subjective judgment" (pp. 182-186). Metametrics, the company behind the Lexile readability formula, also concurred that such an approach has merit:

> A Lexile measure is based on two strong predictors of how difficult a text is to comprehend: word frequency and sentence length. Many other factors affect the relationship between a reader and a book…. The Lexile measure is a good starting point in the book-selection process, but these other factors should be considered when making a decision about which book to choose. (Lexile, 2010)

In response, a variety of teacher preparation texts have offered very general checklists that could theoretically be paired with readability formulae (generally for the selection of textbooks in the content areas) (see Armbruster, 2016), and some of these texts have even suggested that their checklists be used with the Lexile formula (see Lapp, Moss, Grant, & Johnson, 2015). These checklists are indeed valuable, as they list a limited number of features in the form of general guides that could be used to consider content area textbooks. However, these checklists (a) explore only a limited number of features, (b) are based on good practice, not empirical examination, and (c) are not specific to the genre of rhetorics (and the exemplars found therein, i.e., paragraphs and essays).

The Research Gap That Needs to Be Addressed

Although (a) quantitative studies that use readability formulae give a preliminary quantitative picture of the difficulties that postsecondary ELLs have with rhetorics, (b) the virtue of a hybrid approach that uses the Lexile formula with checklists has been recognized, (c) and a small number of checklists (based on good practice, not empirical study) to select content area textbooks have been suggested that focus on a limited number of features, a gap remains. That is, a comprehensive empirical exploration of what features beyond those considered by the Lexile readability formula influence students' perceptions of reading difficulty when reading exemplars taken from rhetorics has yet to be conducted and included in a genre-specific checklist when exploring rhetorics with a hybrid approach. This study intends to fill this gap.

To address this gap, this article explores a question posed by Baker (2019): Which factors beyond those measured by the Lexile readability formula influence students' perceptions of reading difficulty when reading exemplars taken from rhetorics?

Methods

To collect and analyze the data needed to answer the research question, Creswell's (2018) sequential mixed methods research design was adapted and used in this study. This research design is illustrated in Figure 1.

Step 1		Step 2
<u>Quantitative</u> An exploration of which features beyond those measured by the Lexile readability formula students perceive as contributing to text difficulty when reading exemplars taken from the rhetorics (i.e., paragraphs and essays) via a cline-questionnaire procedure.	⇨	**<u>Qualitative</u>** A further exploration of the results of the cline-questionnaire procedure via semi-structured retrospective interviews to add scope and breadth to the findings.

Figure 1. Sequential Research Design.

According to the sequential design illustrated in Figure 1, a bilingual research assistant and I (hereafter referred to as "we") administered an untimed two-stage process that included (a) a quantitative cline (difficulty ranking) and questionnaire procedure and (b) qualitative semi-structured retrospective interviews.

Description of the Setting

We conducted the two-stage study at Jinwen University of Science and Technology in New Taipei City, Taiwan. The university maintains a writing center that serves the entire student community (9,000 undergraduate and graduate students enrolled in one of 16 majors) and is staffed by paid student-tutors and a small number of dedicated teacher volunteers.

Description of the Participants

Consistent with the nature of qualitative theory, we purposively selected the informants to best help us understand the problem (Creswell & Creswell, 2018). In accordance with Kvale's (1996) suggestion that the number of informants tends to be 15 ± 10 in interview studies, we identified a smaller cluster sample (n = 14) (Table 2) from a larger sample (N = 91), which included individuals who had completed the Scholastic Reading Inventory (SRI) exam (a standardized reading assessment that provides Lexile measures), as reported during the quantitative phase of Baker's (2019) study.

The informants selected for the cluster sample had received Lexile scores in the top 15% of their class, as provided by the SRI (range 864-928L). Having such high scores indicated that the participants would be able to examine a wide range of exemplars, which would assist us in holistically exploring the research question.

After the 14 informants were identified, we asked them by email if they would be willing to participate in a paid (i.e., 1,000 New Taiwan Dollars, approximately 32 U.S. Dollars, per participant), follow-up, post-course interview. We chose to conduct paid interviews to help ensure that the informants would perform to the best of their abilities. Twelve informants consented and were provided with pseudonyms (alphabetized from A to O) to protect their anonymity.

Table 2. Characteristics of the Respondents

	Gender	Age	Lexile Measures
Kala	Female	20 21	864L

Jacob	Male		869L
Eve	Female	20	861L
Marsha	Female	20	877L
Harold	Male	21	837L
Linda	Female	20	892L
Ben	Male	21	858L
Cara	Female	20	828L
Dan	Male	20	870L
Nelson	Male	21	869L
Olivia	Female	21	926L
Annie	Female	20	928L

Note: The participants are ordered by Lexile measures.

The informants were undergraduate Taiwanese ELLs seeking degrees in Applied English, seven women (with a mean age of 20.14 years) and five men (with a mean age of 20.8 years). The purposive sampling of students was based on their Lexile measures (range 864-928) rather than their demographic characteristics (e.g., ethnicity, gender, and age).

Procedure for the Cline (difficulty ranking) and questionnaire.

Cline (difficulty ranking) phase

This stage of the study, the cline (hereafter referred to as "difficulty ranking") and questionnaire procedure, included two untimed phases: (a) a difficulty ranking and (b) a questionnaire. The purpose of the difficulty ranking phase was to have the participants read five exemplars taken from the rhetorics and place them in order of difficulty so that the participants would be able to reflect on this activity while completing a closed-response questionnaire. For the difficulty ranking phase, the exemplars were presented to the informants in random order, and the ranking criteria were withheld to ensure that the informants engaged in the type of decision-making process that is "normally used when making such judgments" (Chall, Bissex, Conrad, & Sharples 1966, p. 77).

Description of the exemplars

We chose five exemplars for the difficulty ranking phase of the study. We took these exemplars from the rhetorics identified as being available on the local market by Baker (2019). The exemplars are listed in Table 3.

Table 3. Exemplars Chosen for the Study

Exemplars	Lexile Measures
Traig, J. A Guide to proper hand-washing technique. In M. L. Conlin (Ed.), *Patterns plus: A short prose reader with argumentation* (pp. 176-178). New York, NY: Cengage.	610L
Hughes, L. Salvation. In S. V. Buscemi, & C. Smith (Eds.), *75 readings plus* (pp. 10-14). New York, NY: McGraw-Hill.	740L
McDonald, C. P. A view from the bridge. In T. Cooley (Ed.), *The Norton sampler: Short essays for composition* (pp. 37-41). New York, NY: Norton & Company.	810L
Harris, S. Freedom and security. In G. Levin (Ed.), *Prose models* (pp. 389-392). Belmont, CA: Wadsworth.	910L
Dalfonos, D. Grammy rewards. In T. Cooley (Ed.), *The Norton sampler*: *Short essays for composition* (pp. 206-208). New York, NY: Norton & Company.	1010L

We also selected the exemplars (N = 12) from those that Baker (2019) identified (N = 867). We purposively chose them to be below, within, and slightly above the informants' Lexile range. Because of the informants' low Lexile range (i.e., 828L-928L) and to provide enough essays to encourage the informants to thoughtfully consider their difficulty rankings, we purposively chose the exemplars to be approximately 100L apart to allow the students to reflect on the features that influenced their perceptions of difficulty instead of choosing a higher level (e.g., 200L apart), which would have made the Lexile ranking more obvious but would have reduced the number of exemplars available for ranking.

We acknowledge that the exemplars contained the features listed in Table 1 (each in a different mix), which facilitated the study, but they were not purposively selected for this reason. We avoided purposively selecting exemplars based on their features in order not to load the dice with regard to aiming to achieve expected results.

The Questionnaire Phase

The next phase was the closed-response Likert questionnaire. This phase was conducted to help the informants reflect upon why they ranked the difficulty of the exemplars in the way that they did and describe their ranking processes in such a way that would provide insight into what other factors beyond those measured by the Lexile readability formula that they believed influenced their perceptions of difficulty when reading the exemplars taken from the rhetorics. Once the informants completed the procedure, we ranked the results in frequency and percentage tables.

Description of the Questionnaire

We adapted the questionnaire (Appendix) from the features outlined in Table 1 that have been found to contribute to reading comprehension. It is important to note that we separated one feature described in Table 1—text length (i.e., overall length and paragraph length)—into two questions: (a) overall text length and (b) paragraph length. We also ordered and grouped the questions in a way that we felt would help the informants understand the questionnaire and best reflect on the essays. The question about vocabulary, for example, preceded the question about vocabulary in context.

To ensure the reliability of the questionnaire, we translated the original form into the students' L1 (i.e., Mandarin) using a back-translation procedure. The translation was then checked by a second translator for accuracy. To further ensure reliability regarding the translation of the questionnaire, we conducted a pretest with a small number of respondents who were not part of the sample used in the study (n = 2). We conducted the pretest to reveal potential ambiguities that may have resulted from the translation of the original questionnaire.

Interview

After ranking the difficulty of the exemplars and completing the questionnaire, the informants engaged in semi-structured retrospective interviews in accordance with Creswell and Creswell (2018). Each interview began with structured questions from the questionnaire that were followed up with semi-structured prompts which later became open-ended (Cohen, Manion & Morrison, 2018). The research assistant (who acted as a translator when necessary) was present to assist with any language difficulties. This procedure was repeated with each of the questions to triangulate the data from the questionnaire.

We also used an observational protocol that included both video and audio recordings of the interviews. The interviews lasted for an average of 32.5 minutes (range 19.3-57.4). Variations in the interview length depended on how much information each informant had to offer and how much translation was required.

Analysis

After the interviews were completed, we transcribed the audio recordings, and the informants (with the assistance of the translator when necessary) checked their transcripts. Once these steps were completed, we explored the informants' responses by using Erlandson, Harris, Skipper, and Allen's (1993) emergent category analysis procedure. This procedure was used to allow the "categories to follow data rather than precede them" (p. 112). After all of the responses had been coded, "to add strength and fertility to the entire analysis," we conducted a "second-level group debate" (pp. 128-129). To complete the analysis, we followed previous suggestions that qualitative data can be quantitatively presented in table form (Creswell & Creswell, 2018; Miles & Huberman, 1994), and organized the categories that we had created and presented the results in tables.

Results

By using an adaptation of Creswell and Creswell's (2018) sequential research design, this study explored the features related to readability beyond the two features measured by the Lexile readability formula (i.e., vocabulary and sentence length) that the participants believed to affect the readability of exemplars in rhetorics. This was explored via two data collection techniques: (a) a difficulty ranking and questionnaire procedure and (b) a qualitative semi-structured retrospective interview. We invited fourteen participants, 12 of whom agreed to participate and were given pseudonyms alphabetized from A to O. One participant (O), however, later reported that she was unable to participate, and another (C) did not successfully complete the study; therefore, only 10 participants' data were considered.

The first stage (i.e., the difficulty ranking and questionnaire procedure) had two untimed phases: (a) a difficulty ranking and (b) a questionnaire. In the difficulty ranking phase, the informants read five exemplars from the rhetorics and ranked them in order of difficulty (easiest to most difficult) so that they could reflect on this activity during the questionnaire phase.

As the purpose of the ranking procedure was to prepare the informants for the next phase (i.e., the questionnaire), the data regarding the informants' rankings are shown in Table 4. We provide these data to help the reader follow the study, not to draw conclusions about the confidence of the informants' rankings in relation to one another. We also do not provide these data as a source of validation (or invalidation) of the Lexile measures with this population or rhetorics, as (a) this is not the focus of this study, and (b) the tight grouping of the essays' Lexile levels (i.e., 100L and less) would not lend itself to such interpretations.

Table 4. The Results of the Informants' Difficulty Ranking

	Annie	Ben	Dan	Eve	Harold	Jacob	Kala	Linda	Marsha	Nelson
Easiest	a	a	a	a	a	a	a	a	a	a
	d	d	b	c	d	e	e	e	e	D
	b	b	e	e	e	d	d	d	d	c
	c	c	c	b	b	b	b	c	c	e
Difficult	e	e	d	d	c	c	c	b	b	B

Note.

a. Traig, J. (2008). A Guide to proper hand-washing technique. In M. L. Conlin (Ed.). *Patterns plus: A short prose reader with argumentation* (pp. 176-178). New York, NY: Houghton Mifflin.

b. Hughes, L. Salvation. (2007). In S. V. Buscemi, & C. Smith (Eds.) *75 readings plus* (pp. 10-14). New York, NY: McGraw-Hill.

c. McDonald, C. P. (2003). A View from the bridge. In T. Cooley (Ed.). *The Norton sampler: Short essays for composition* (pp. 37-41). New York, NY: Norton & Company.

d. Harris, S. (2001). Freedom and security. In G. Levin (Ed.). *Prose models* (pp. 389-392). Belmont, CA: Wadsworth.

e. Dalfonos, D. (2003). Grammy rewards. In T. Cooley (Ed.). *The Norton sampler: Short essays for composition* (pp. 206-208). New York, NY: Norton & Company.

In the questionnaire phase, the informants completed a Likert questionnaire designed to help them reflect on why they ranked the essays in the way that they did and describe their ranking processes in a way that provides insight into the features that they felt influenced their perceptions of difficulty when reading the exemplars from the rhetorics. When examining the informants' responses, we found that the informants believed that the two features measured by the Lexile readability formula (i.e., vocabulary and sentence length) and 12 other features influenced their perceptions of difficulty when reading the exemplars taken from the rhetorics (Table 5).

Table 5. Informants' Responses to the Questionnaire

Features	Annie	Ben	Dan	Eve	Harold	Jacob	Kala	Linda	Marsha	Nelson	*F*	%
1. Vocabulary	X	X	X	X	X	X	X	X	X	X	10	100%
2. Vocabulary in Context	X		X	X	X	X	X	X	X	X	9	90%
3. Logical Organization	X	X		X		X	X	X	X	X	8	80%
4. Structure	X			X	X	X	X	X	X	X	8	80%
5. Background	X	X	X		X	X		X		X	7	70%
6. Interest	X	X				X	X	X	X	X	7	70%
7. Signal Words		X	X	X	X	X		X	X		7	70%
8. Sentence Length	X	X						X	X	X	5	50%
9. Overall Length		X		X	X			X	X		5	50%
10. Paragraph Length	X	X			X				X		4	40%
11. Supp Materials 1 [a]				X				X		X	3	30%
12. Format								X		X	2	20%
13. Supp Materials 2 [b]				X				X			2	20%
14. Titles								X			1	10%

Note.
[a] Supp Materials 1. Supplementary Materials (Advance organizers: Introductions prior to the writing text.)
[b] Supp Materials 2. Supplementary Materials (Pre- and post-questions: The questions before and/or after the text.)

In the second stage, the informants participated in semi-structured retrospective interviews to elaborate on the quantitative findings of the difficulty ranking and questionnaire procedure. By examining the informants' responses, a deeper understanding emerged regarding how the informants perceived the features both measured and not measured by the Lexile readability formula. In total, they reported that they believed that 16 features influenced their perceptions of difficulty, namely, the two Lexile readability formula measures (i.e., vocabulary and sentence length) and 14 other measures (Table 6). The data are listed alphabetically.

Table 6. Features the Respondents Perceived as Influencing Text Difficulty

Features Considered by the Lexile Readability Formula	Features Not Considered by the Lexile Readability Formula
1. Sentence Length 2. Vocabulary	1. Background Knowledge 2. Formatting 3. Grammar 4. Interest 5. Logical Organization 6. Overall Length 7. Paragraph Length 8. Punctuation 9. Signal Words 10. Structure 11. Supp Materials 1[a] 12. Supp Materials 2[b] 13. Titles 14. Vocabulary in Context

Note.
[a] Supp Materials 1. Supplementary Materials (Advance organizers: Introductions prior to the writing text.)
[b] Supp Materials 2. Supplementary Materials (Pre- and post-questions: The questions before and/or after the text.)

The results of the interviews further showed that when considering the difficulty of the reading exemplars taken from the rhetorics, as a group, the informants perceived each of these 16 features to be (a) sometimes a primary feature (i.e., an isolated feature), (b) sometimes a conjoined feature (i.e., consisting of two or more associated entities in which the second entity impacts the first entity), and (c) sometimes neither a primary nor a conjoined feature but simply influential.

Specifically, the results showed that the informants considered 15 of these features to be primary features (Table 7). The data are listed first by frequency and then alphabetically.

Table 7. Features the Informants Reported to Be Primary

Primary Features			
Feature	%	Feature	%
1. Vocabulary	90%	9. Formatting	30%
2. Vocabulary in Context	90%	10. Overall Length	30%
3. Logical Organization	80%	11. Supp Materials 1	30%
4. Signal Words	80%	12. Grammar	20%
5. Interest	70%	13. Supp Materials 2	20%
6. Background Knowledge	60%	14. Paragraph Length	10%
7. Structure	50%	15. Sentence Length	10%
8. Titles	40%		

Note.
[a] Supp Materials 1. Supplementary Materials (Advance organizers: Introductions prior to the writing text.)
[b] Grammar was not included on the original questionnaire.
[c] Supp Materials 2. Supplementary Materials (Pre- and post-questions: The questions before and/or after the text.)

The results of the interviews additionally showed that one or more of the informants in the group believed that 12 features affect the readability of the exemplars in the rhetorics as conjoined features. Vocabulary, for example, was viewed as influenced by background knowledge and interest (Table 8). The data are listed first by frequency and then alphabetically.

Table 8. Features the Informants Reported to Be Conjoined (Influenced by Other Features)

Conjoined Features	%	Influential Features	%
1. Vocabulary	70%	Background Knowledge	60%
		Interest	20%
2. Sentence Length	50%	Vocabulary	30%
		Grammar	10%
		Punctuation	10%
3. Overall Length	40%	Interest	20%
		Vocabulary	20%
4. Logical Organization	30%	Vocabulary	20%
		Background Knowledge	10%
		Titles	10%
5. Paragraph Length	30%	Vocabulary	30%
6. Interest	20%	Logical Organization	10%
		Overall Length	10%
		Sentence Length	10%
		Vocabulary	10%
7. Titles	20%	Vocabulary	20%
8. Vocabulary in Context	20%	Logical Organization	10%
		Paragraph Length	10%
9. Background Knowledge	10%	Vocabulary	10%
10. Grammar	10%	Sentence Length	10%

The results of the interviews further demonstrated that one of the informants considered one feature (i.e., punctuation) simply to be a feature that influenced another feature (i.e., punctuation influences the difficulty caused by long sentences).

Discussion and Conclusions

Because rhetorics provide apprentice writers with genre-specific models, reading genre-specific materials is an important part of the reading-writing relationship (Grabe, 2003, 2016), and it is important to select materials that are readable for the intended users (Allington, 2002). This study provides data that can practically and theoretically inform writing center staff (when choosing texts for writing center self-access libraries), teachers of writing (when choosing texts for classroom use), members of the publishing industry (when choosing texts to market), and the research community as a whole. These data are as follows.

The data from the informants' reports support and advance existing research. Vocabulary, for example, was reported to be a primary feature by 90% of the informants and a conjoined feature by 70%. Vocabulary was further reported to influence seven of the 16 features found to be influential in this study. Sentence length was also reported to be a primary feature, a conjoined feature, and a feature that was seen to influence three other features. Based on these data, it can be concluded that these two features (i.e., the features considered by the Lexile readability formulae) are, as other scholars have argued, strong predictors of the difficulty that students have with texts (see Dubay, 2007). However, it can also be seen that these two features are only two of the 16 features that the informants believed to contribute to the difficulty that they have when reading exemplars from rhetorics.

Overall, the results of this study support other scholars' work that argues that although vocabulary and sentence length are strong predictors of students' difficulty with texts, other features need to be considered when selecting texts (Baker, 2019; Chall & Dale, 1995; Fry, 2002; Gunning, 2003; Lexile, 2010; Meyer, 2003; Weaver, 2000; Zakaluk & Samuels, 1988). Therefore, this study reiterates, as other authors have argued, that readability formulae, or specifically for the purposes of this study, the Lexile readability formulae, is a good starting point in the text selection process, but other factors should be considered when deciding which books to choose (Lexile, 2010).

16. Accepting that other features beyond the features explored by the Lexile readability formulae need to be considered, this study has furthered our knowledge about what contributes to readability (regarding the features measured and not measured by the Lexile readability formula) when examining the exemplars found in rhetorics, the results of which inform a checklist that

those who wish to select rhetorics (or exemplars of paragraphs and essays therein) can use during the selection process (Table 9).

Table 9. A Checklist Which Can Be Used as Part of the Sequential Process of Selecting Rhetorics or the Exemplars Therein

Features Considered by the Lexile Readability Formula	Features Not Considered by the Lexile Readability Formula
1. Sentence Length 2. Vocabulary	1. Background Knowledge 2. Formatting 3. Grammar 4. Interest 5. Logical Organization 6. Overall Length 7. Paragraph Length 8. Punctuation 9. Signal Words 10. Structure 11. Supp Materials 1[a] 12. Supp Materials 2[b] 13. Titles 14. Vocabulary in Context

[a] Supp Materials 1. Supplementary Materials (Advance organizers: Introductions prior to the writing text.)
[c] Supp Materials 2. Supplementary Materials (Pre- and post-questions: The questions before and/or after the text.)

To use this checklist, the following procedure is suggested.

Step 1: (a) Assess the readability level(s) of the texts by using the Lexile readability formula (by examining each exemplar separately, as each exemplar within a rhetoric is an individually authored, separate piece of writing), (b) examine students' reading levels with a standardized reading assessment paired with Lexiles (e.g., the SRI) and (c) compare the two. The first two steps of Step 1 can be reversed.

Step 2: Select texts that are appropriate for students' Lexile levels and then complete a subjective analysis of the exemplars in the potential rhetorics using the checklist. Please note that, again, each exemplar must be considered separately, as each exemplar within a rhetoric is an individual piece of writing. As you complete the checklist, consider each feature in the checklist and how each is conjoined with or influences other features.

Limitations

Consistent with the nature of qualitative theory, we purposively selected the informants to best help us understand the problem (Creswell & Creswell, 2018), and we adhered to the sample size suggested by Kvale (1996) that is commonly used in interview studies, namely, 15 ± 10. Given our sample size, however, investigations with larger samples may find different weightings regarding the features identified in this study. As such, it is hoped that this paper will lay a foundation for future investigations and provide preliminary data for further study.

Suggestions for Future Study

The information provided in this study furthers the literature in ways that can be useful to writing center staff, teachers of writing, members of the publishing industry, and the research community, but the reported data raise additional questions that merit investigation.

In the difficulty ranking procedure, we asked the informants to rank the essays from easiest to most difficult. This procedure prepared the informants for the next phase: the questionnaire. We provided the data from the difficulty ranking phase to help the reader follow the study, not as an attempt to validate or invalidate the use of the Lexile readability formula with this population or rhetorics. For such interpretations to be made, additional explorations are needed.

During the difficulty ranking and questionnaire phases and the following interview stage, we found that the informants (as a group) perceive a total of 16 features as contributing to text difficulty when reading exemplars from rhetorics, but each informant reported a different mix of features. Examining these data, one question arises: What prompted the variance in the features reported by the informants?

A broader potential focus also presents itself, and this is in the area of the generalizability of the study’s findings and the aforementioned questions. Publisher catalogues in other non-North American regions show similar available titles (i.e., rhetorics) and writing centers and the self-access libraries therein are becoming commonplace in Asia. Thus, the hypothesis can be posed that individuals who select rhetorics (or the material therein) for ELL contexts and populations could make productive use of the data provided in this study and the resulting checklist when they employ hybrid approaches to select rhetorics for use in writing center self-access libraries.

Replication studies are also encouraged in order to explore the experiences of other populations at other institutions in non-North American settings with rhetorics (as well as with other genre). This article was written in such a way to encourage such explorations, i.e., with a detailed literature review, methodology, and results. That is because, as Baker (2019) noted, although readability investigations regarding rhetorics may have run their course in the North American context, they are only just beginning to be undertaken in the East and many other parts of the world; thus, new exploration is welcome for the texts and populations in these contexts.

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Appendix

Questionnaire (in English)

Please read the instructions carefully before you begin. If you have any questions, please ask the proctor.

Instructions: Now that you have ordered the texts from 1 (easiest) to 5 (most difficult), please explain your reasons for arranging the texts in the way you did by completing the questionnaire below.

1. Vocabulary: The number of unfamiliar, abstract, figurative, or technical words in the text influenced my decision about how to arrange the texts in the way that I did.
    a. Strongly Agree
    b. Agree
    c. Neither Agree nor Disagree
    d. Disagree
    e. Strongly Disagree

2. Vocabulary in Context: How well the words or sentences surrounding the words I did not know helped me to understand them influenced my decision about how to arrange the texts in the way that I did.
    a. Strongly Agree
    b. Agree
    c. Neither Agree nor Disagree
    d. Disagree
    e. Strongly Disagree

3. Sentence Length: How many words were in each sentence of each text influenced my decision about how to arrange the texts in the way that I did.
    a. Strongly Agree
    b. Agree
    c. Neither Agree nor Disagree
    d. Disagree
    e. Strongly Disagree

4. Background Knowledge Required: How familiar I was with the topic of each text influenced my decision about how to arrange the texts in the way that I did.
    a. Strongly Agree
    b. Agree
    c. Neither Agree nor Disagree
    d. Disagree
    e. Strongly Disagree

5. Interest: How interested I was in the topic of each text influenced my decision about how to arrange the texts in the way that I did.
    a. Strongly Agree
    b. Agree
    c. Neither Agree nor Disagree
    d. Disagree
    e. Strongly Disagree

6. Titles: How well the title of each text described each text influenced my decision about how to arrange the texts in the way that I did.
    a. Strongly Agree

b. Agree
c. Neither Agree nor Disagree
d. Disagree
e. Strongly Disagree

7. Overall Length: How many total words were in each text influenced my decision about how to arrange the texts in the way that I did.
   a. Strongly Agree
   b. Agree
   c. Neither Agree nor Disagree
   d. Disagree
   e. Strongly Disagree

8. Paragraph Length: How many words in each paragraph of each text influenced my decision about how to arrange the texts in the way that I did.
   a. Strongly Agree
   b. Agree
   c. Neither Agree nor Disagree
   d. Disagree
   e. Strongly Disagree

9. Logical Rhetorical Organization: How the ideas were arranged in each text to help them flow logically from one another influenced my decision about how to arrange the texts in the way that I did.
   a. Strongly Agree
   b. Agree
   c. Neither Agree nor Disagree
   d. Disagree
   e. Strongly Disagree

10. Structure: How well each text was organized (e.g., an introductory paragraph which contains a clear thesis statement, body paragraphs that contain topic sentences and supporting details, and a concluding paragraph) influenced my decision about how to arrange the texts in the way that I did.
   a. Strongly Agree
   b. Agree
   c. Neither Agree nor Disagree
   d. Disagree
   e. Strongly Disagree

11. Signal words: Whether the text contained words that indicated the flow of information (e.g., first, next, finally, etc.) influenced my decision about how to arrange the texts in the way that I did.
   a. Strongly Agree
   b. Agree
   c. Neither Agree nor Disagree
   d. Disagree
   e. Strongly Disagree

12. Punctuation: The way the sentences were punctuated--the use of periods (.), question marks (?), exclamation marks (!), commas (,) colons (:), semicolons (;), dashes/hyphens (-), ellipsis (. . .), etc.--in each text influenced my decision about how to arrange the texts in the way that I did.
   a. Strongly Agree
   b. Agree

c. Neither Agree nor Disagree
d. Disagree
e. Strongly Disagree

13. Format: The physical appearance of the text (i.e., font, type size, spacing--e.g., singe/double, line length) influenced my decision about how to arrange the texts in the way that I did.
    a. Strongly Agree
    b. Agree
    c. Neither Agree nor Disagree
    d. Disagree
    e. Strongly Disagree

14. Supplementary Materials 1: The introductions prior to the writing sample influenced my decision about how to arrange the texts in the way that I did.
    a. Strongly Agree
    b. Agree
    c. Neither Agree nor Disagree
    d. Disagree
    e. Strongly Disagree

15. Supplementary Materials 2 (pre- and post-questions): The questions before and/or after the writing sample influenced my decision about how to arrange the texts in the way that I did.
    a. Strongly Agree
    b. Agree
    c. Neither Agree nor Disagree
    d. Disagree
    e. Strongly Disagree

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A Genre Analysis of Malaysian TESL Undergraduates' Projects and TESL-Related Research Articles: A Comparative Study

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Abstract

Genre analysis of academic writing has garnered worldwide attention, especially in academic discourse analysis that involves rhetorical move patterns and metadiscourse stance features. As there is a lack of research investigating both aspects concurrently, this study was conducted to draw a comparison between the 'Conclusion' sections of 16 Teaching English as a Second Language (TESL) related research articles (RAs) and 16 Malaysian TESL undergraduates' Final Year Projects (FYPs) according to both aspects. The identification of both aspects was based on Yang and Allison's (2003) 'Conclusion' section framework and Hyland's (2005a; 2005b) Interactional Model of Metadiscourse. The findings showed that the most commonly occurring rhetorical move pattern and stance features for both corpora were Move 2 (i.e. evaluating the study) and attitude markers, respectively. It is also found that there was an inappropriate usage of both rhetorical move patterns and stance features in Malaysian TESL undergraduates' FYPs. This finding suggested that Malaysian TESL undergraduates need to be more equipped with the knowledge of academic writing and the mastery of genre knowledge. As such, the findings of this study have informed the pedagogical implications, and further studies are mandatory.

Keywords: Genre Analysis; Move Analysis; Metadiscourse; Stance Features; Conclusion section

1. Introduction

Prior to the 1990s, academic writing was viewed as an anonymous or characterless discourse. Henceforth, there has been a noteworthy increase in the treatment of academic writing as the embodiment of interactions between writers and their respective readers. This view in which the development of an appropriate interactional relationship that allowed writers to affirm the novelty and the significance of their works, is deeply rooted in the communities of academic discourse at present and has been widely analysed and comprehended in various research studies (Ansarin & Aliabdi, 2011; Hyland, 2002a, 2005a, 2008; Sorayyaei Azar & Azirah, 2017, 2019; Thompson, 2001). Examples of academic writing, such as research articles (RAs) and final year projects (FYPs) are considered as their respective genres (Al Husseini, 2014). According to Hopkins and Dudley-Evans (1988), Swales (1990), and Thomas and Hawes (1994), genre is especially utilised within a linguistic context in order to satisfy specific communicative purposes and address its audience according to the specific content, conventions (i.e. text features), function, and organisation. Effective academic writing is not solely based on the writer's linguistic competency, but also his or her apprehension of the rhetorical move structures utilised and recognised by the academic discourse community. If writers do not satisfy the expectations of the academic discourse community, they may rebut the writers' claims at any phase (Hyland, 2000).

Genre analysis has gained widespread traction of late. Genre analysts have mostly focused on analysing and identifying the rhetorical structure (move patterns), and the metadiscoursal interaction features, such as stance features or engagement markers, following the discussions of rhetorical moves in RAs by Swales (1990) and metadiscourse by Hyland (2005b). Several works have investigated either the move patterns or the metadiscourse of RAs, but rarely both concurrently. There is also a rarity in the investigation of both aspects of genre analysis in undergraduates' FYPs. Move patterns, specifically the 'Conclusion' section, is also one of the least focused on aspects of genre analysis, due to the notion that it is generally a part of the 'Discussion' section of academic papers (Posteguillo, 1999; Swales, 1990). There is a conceptual distinction between the 'Discussion' and 'Conclusion' sections, as in theory, the former pertains to results interpretation, while the latter highlights the quality and value of the research findings. It can also justify how these findings contribute to the field of research. Hence, the present study aims to fill the aforementioned gaps, and to compare and contrast the metadiscoursal interactional category (specifically, stance features) based on Hyland's (2005a; 2005b) interpersonal metadiscourse model, and rhetorical move patterns based on Yang and Allison's (2003) framework, by looking at the 'Conclusion' sections of TESL-related RAs and Malaysian TESL undergraduates' FYPs.

The key research questions which will be apt to the purpose of this research are as follows:

(1) What are the rhetorical move patterns in the ‘Conclusion’ sections of TESL-related RAs and Malaysian TESL undergraduates’ FYPs?
(2) What are the stance features found in the ‘Conclusion’ sections of TESL-related RAs and Malaysian TESL undergraduates’ FYPs?
(3) Are the moves being realised by the stance features in the ‘Conclusion’ sections of TESL-related RAs and Malaysian TESL undergraduates’ FYPs?
(4) Are there any similarities or differences between usages of both stance features and rhetorical move patterns between TESL-related RAs and Malaysian TESL undergraduates’ FYPs?
(5) Do Malaysian TESL undergraduates’ FYPs comply with the typical generic aspects of genre analysis (stance features and rhetorical move patterns) in the ‘Conclusion’ section, as practised by the writers of TESL-related RAs?

2. Literature Review

2.1 Genre Analysis

According to Bhatia (1997), the definition of genre analysis is “the study of situated linguistic conduct in an institutionalised academic or professional setting”. It is reckoned as one of the fundamental approaches to the analysis of academic writing at the text level, especially in applied linguistics. Brett (1994) contends that in applied linguistics, genre analysis is popularly attributable to its substantial significance for those who are working in the English for Academic Purposes (EAP) and English for Special Purposes (ESP) classrooms. For instance, via genre analysis, the learners’ and novice researchers’ genre knowledge and linguistic knowledge for respective disciplines, are enhanced. The suitable linguistic characteristics of communicative functions are amidst these appropriate conventions.

Swales and Feak (2009) described genre as a form of discourse or text which is intended to acquire a sequence of communicative purposes. These communicative purposes stand for the typical structural patterns that are the most vital standard features shared by the text as the same genre’s component. Holmes (1997) also mentioned that the standard features distinguish one genre from others.

As stated by Swales (1990), a genre has been developed by the community and the community determines the label for it. As such, the medical community has a genre designated as ‘case history’ while the teaching community has the ‘year-end report’. The communicative purpose of a genre is considered as its significant feature, which is singled out from other genres and elucidates its features and form of language use (Dudley-Evans, 1993). Basturkmen (2006) mentioned that the genre theory attempts to explicate the texts utilised by communities or groups with regards to the groups' purposes, communicative intentions and their viewpoint on the world. The typical roles of academic communities, for example, which consist of disseminating findings of their research, providing descriptions, and explaining phenomena, may lead to specific styles of communication including conference presentations, critical-evaluative review articles, and research reports.

2.2 Move Analysis – 'Conclusion' Section

The depiction of genre is primarily concerned with its rhetorical structure despite the lexical definitions of genre. Swales (1981; 1990) was the first to analyse and utilise the rhetorical move patterns in genre analysis. He used the rhetorical move analysis to analyse research articles in academic discourse. Swales (2004) defined "move" as a specific discoursal segment which has coherent communicative functions. The objective of a move-based analysis is on the hierarchical schematic text structures (Nwogu, 1997). One can mention that "move" is a unit of semantics that is consociated with the writer's aim. From a pedagogical point of view, the categorisation of texts with the intent to communicate is considered to have the vantage point of shifting the teachers' and students' attention from simple surface text structures to the socially-set use of texts with specific purposes (Hüttner, Smit & Mehlmauer-Larcher, 2009). In addition to its specific purpose, Santos (1996) asserted that each move adds to the eventual genre's communicative purpose. Each rhetorical move consists of a list of minor rhetorical elements in which Swales (1990) addressed them as 'steps'. Moreover, Samraj (2009) remarked that both moves and steps are regarded as functional units that can be compulsory or optional in a genre.

Ever since Swales (1990) introduced the Create A Research-Space (CARS) model that regards academic writing as texts organised in a hierarchical manner, and found that the 'Introduction' sections of RAs comprised of three obligatory moves, with each occupying a niche, there has been substantial focus on the analysis of the rhetorical organisation and structure of various RA sections (Moritz, Meurer, & Dellagnelo, 2008). This model is renowned for being the most often utilised analytical tool for conducting research on the organisational structures of RAs. Most of the research disciplines follow this model, in terms of its moves and steps, but there have been instances in some research disciplines utilising interesting variants such as excluding specific moves or steps and alternating the arrangements of moves and steps. Examples of literature with intriguing variants are: the ‘Introduction’ sections examined by Samraj (2002) and Swales (1990, 2004); the ‘Methods’ sections by Lim (2006) and Peacock (2011); the ‘Results’ sections by Thompson (1993); and the ‘Discussion’ sections by Peacock (2002) and Yang and Allison (2003).

Lately, move analysis with the aim to ascertain the moves, sequences of moves, and key linguistic features (also known as the ‘top-down or macro approach’), has gained traction. As far as what was found, there were only a few research studies with the main objective of examining the rhetorical organisational structure in the ‘Conclusion’ section of RAs. Swales (1990) and Posteguillo (1999) argued that the ‘Conclusion’ section is generally regarded as a part of the ‘Discussion’ section; thus, this has limited the research studies on this matter. It is noted that the ‘Conclusion’ section in RAs yields not only the outline of study but also other significant elements, such as research implications and recommendations (Morales, 2012). Even though there are limited research studies that have examined the structural organisation of the ‘Conclusion’ section, the findings of these studies are intriguing. In Yang and Allison’s (2003) study, which is the pioneer for the ‘Conclusion’ section framework, it was stated that this section in Applied Linguistics research studies comprised of three moves – Move 1 (M1): Summarising the study; Move 2 (M2): Evaluating the study; and Move 3 (M3): Deductions from the research. They also mentioned that these moves were organised linearly and that M1 occurred most often. On the other hand, Moritz, Meurer, and Dellagnelo (2008) examined and compared the ‘Conclusion’ section of three corpora which were written by three groups with different authors (L1 and L2 English, and L1 Portuguese) in the field of Applied Linguistics. In contrast, they discovered six moves consisting of “Restating the introductory statement”, “Consolidating the research space”, “Summarising the study”, “Commenting on results”, “Evaluating the study”, and “Making deductions from the research”. They concluded by mentioning that the last move occurred most often. Additionally, the comparison indicated that writers of L2 English were more inclined to elaborate their compositions and that L1 linguistic and rhetorical conventions interfered with L2 writing. Even so, L2 writers continued to follow the specific general conventions required by international publications in order to publish their papers.

In another study, Ghazanfari, Mohtasham, and Amirsheibani (2016) investigated the move structure of the Conclusion section in English Language Teaching (ELT) and Nursing RAs. They found that both corpora were predisposed to the application of Yang and Allison’s (2003) framework for the Conclusion sections and they also observed no significant variances in their rhetorical structure. Similarly, Zamani and Ebadi (2016) examined the Conclusion section of Civil Engineering and Applied Linguistic RAs (Persian and English RAs). They noticed there were only slight differences between Applied Linguistics and Civil Engineering RAs in terms of Move 2 (Step 2: Indicating limitations and Step 3: Evaluating methodology), but no differences in the other moves employed. Both studies found that Move1 occurred most often, in line with Yang and Allison's (2003) study. However, Amnuai and Wannaruk (2013) found that there were differences in the frequency of move occurrences in their corpus. In this study, all three moves of Yang and Allison's (2003) 'Conclusion' section framework were identified in their corpus, both in International and Thai RAs. They also found no obligatory moves or steps in both corpora. The move structures in the Thai corpus deviated more from Yang and Allison's (2003) framework when compared to the Conclusion sections in the International RA corpus as a result of the limited use of Move 2 and Move 3.

There were two studies in which Yang and Allison's (2003) framework was modified to fit corpora of different genres. In the first study by Nguyen and Pramoolsook (2016), they explored the way Vietnamese English teachers composed their thesis 'Conclusion' chapters by applying the revised Yang and Allison's (2003) framework suited for examining 'Conclusion' chapters in Applied Linguistics by Chen and Kuo (2012). They determined that "Deductions from the study" is evident in every chapter whilst the other three moves: "Introducing the 'Conclusion' chapter", "Summarising the study", and "Evaluating the study", are mainstream. Furthermore, they identified a new move, "Chapter summary", and an occasional occurrence of "Summarising previous chapter", and a cycle of following introduction in individual section summary. Their findings indicated that a linear structure did not clearly exist in the written concluding chapters, and also that the rhetorical influence of their Vietnamese written discourse affected their English written discourse. Morales (2012) conducted a research study on identifying the obligatory moves in Filipino and Japanese writing cultures, and he observed that there was an intercultural variance in the Filipino and Japanese authors' rhetorical penchants. To be specific, Morales observed that Filipino RA authors apparently suggested the contributions of their studies to expanding the body of knowledge in their 'Conclusion' sections, while Japanese RA authors tended to apply an overview of the primary points from the view of the complete study. The overview of the primary points characterises the Japanese RA authors' cultural rhetorical pattern known as "ketsu".

Through the brief review of germane studies in the genre analysis field, there is yet to be a study investigating the comparison of the rhetorical move patterns in the 'Conclusion' sections between TESL-related RAs and Malaysian TESL undergraduates' FYPs in order to determine if they conform to Yang and Allison's (2003) 'Conclusion' section framework. On the matter of pedagogical implications, the outcome of this present study can be helpful for teaching academic discourse to non-native English learners and useful for improving their understanding on the structure of genre.

2.3 Metadiscourse

Over the years, controversies have surrounded the concept of metadiscourse that is based on the differentiation between the subject of metadiscourse and proposition, and to allow for a substitute to the long-standing metadiscoursal categorisation as interpersonal or textual (Bunton, 1999; Crismore, Markkanen & Steffensen, 1993; Moreno, 1997; Vande Kopple, 1985). To surmount these controversies, Hyland (2005b) introduced a novel pragmatic metadiscourse model. His model recommends the necessity to consider the entire metadiscourse as interpersonal with the belief that "metadiscourse takes into consideration of the reader's knowledge, needs for processing and textual experiences, and also allows for the writers to accomplish this with an inventory of rhetorical appeals" (Hyland, 2005b, p. 41).

Inside this new theoretical framework, metadiscourse is a self-ruminative linguistic material, intending to direct the reader's text perception whilst concentrating on how writers externalise themselves to express their stance towards the audience and the content of the text. Furthermore, Hyland (2005b) emphasises the ability of metadiscourse to negotiate the interactional meanings in a text, to help the writer convey a point of view and to engage with the readers of a specific community. Hence, metadiscourse is established by the notion in which communication is a social engagement and as a dynamic entity in terms of a view of language (Hyland, 2005b).

The interpersonal model of metadiscourse as introduced by Hyland (2005b), discerns the existence of two interpersonal dimensions. The first is the interactive dimension that "pertains to the awareness of the writer about an active audience and how the writer attempts to conciliate its probable interests, knowledge, processing abilities and rhetorical expectations" (Hyland, 2005, p. 49). This dimension is comprised of the resources that deal with the ways of discourse construction and organisation while bearing the needs of the reader in mind. The second is interactional dimension that refers to how writers annotate their content to establish their views to the readers and also by disclosing "the degree to which writers work to collectively construct the text with the readers" (Hyland, 2005b, p. 49). This model proposes that metadiscourse is engulfed in the socio-rhetorical context in which it takes place. Therefore, the variance in the usage of metadiscoursal features indicated the dependency on the writers' intentions, the targeted audience or community, and the socio-cultural settings. Through this variance in the utilisation of metadiscoursal features, writers can fulfil the needs of the audience through engagement, influence, and persuasion, in order to attain credence for their claims.

In order to achieve the objective of this study, interactional metadiscourse, specifically on stance features, will be further reviewed in the following section with the support of previous research studies.

2.3.1 Stance Features

Hyland (2005a) separated the interactional dimension into two – stance features and engagement markers. Since the focus of this research is the former, the latter will not be discussed in this review. According to Hyland (2014), stance features are comprised of three primary components – evidentiality, affect, and relation. In his nomenclature, evidentiality is concerned with the writers' allegiance to the accuracy of the statements, the level of confidence, and the propositions' reliability. Affect, on the other hand, refers to the writers' beliefs, feelings, and engagement level with the audience, which includes intimacy and remoteness. The last component, relation, is applied to explicate the writers' relations with the readers and is interrelated with the way writers discursively conceptualise their readers' presence. These components bring about his working definition for stance features which is "the attitudinal dimensions that pertain to how writers portray themselves and express their commitments, judgements, and opinions" (Hyland, 2005a, p. 176).

Subsequently, Hyland asserted a stance-features classification which embraced the three primary components. The stance-features paradigm is comprised four elements – hedges, boosters, attitude markers, and self-mentions (Hyland, 2005a). In Hyland and Tse's (2004) study, they investigated metadiscourse (both interactive and interactional categories) in postgraduate dissertations and they found that hedges constituted 41% out of all interactional uses, reflecting the vital significance of discerning fact from notions in academic writing as well as the writers' need to assert their statements in more convincing manners. This is then followed by boosters. As for attitude markers and self-mentions, master's dissertations had more attitude markers while doctoral dissertations had more self-mentions. It was also discovered that postgraduate dissertations in the field of Applied Linguistics were the highest among the six disciplines. Additionally, Hyland (2002b) further investigated the authorial identity of final year undergraduate writings and discovered that “I” and “We” pronouns were two of the most commonly used author references. Moreover, he stated that professional writers used more authorial identity in order to explicitly intervene with first-person pronoun as compared to student authors. Consequently, he amassed a list of common and searchable stance features based on prior studies such as Biber and Finegan (1989), Hyland and Milton (1997), and Holmes (1988). This list is also comprised of potentially crucial stance features from dictionaries and research articles, which could examine stance-taking in academic writing. Hyland’s (2005a; 2005b) interpersonal model of metadiscourse, specifically the interactional dimension that is comprised of stance features, will be explained in-depth in the Methodology section (under the sub-title: ‘Theoretical Framework’). The next section will only review the use of Hyland’s proposed stance features in previous studies that involved both students’ and professionals’ academic writing.

2.3.2 Stance Features in Students’ and Professionals’ Academic Writing

Previous studies examining students’ academic writing have primarily concentrated on the information flow and the cohesion of texts (Lancaster, 2012). Despite the importance of textual characteristics in students’ writing, they neglect to explore the way student writers externalise themselves in their compositions. Even so, present studies have focused their attention on the way student writers utilise strategies to convey certainty, create an authorial-self or acquire credence, and the way stance features are applied in their academic writings. A majority of this research has concentrated on comparing the writings of first language (L1) and L2 students (Hyland & Milton, 1997; Schleppegrell, 2004). As an example, Hyland and Milton (1997) gathered and compared the essays from 770 British learners (L1) and 900 Cantonese-speaking learners (L2) at the end of the secondary schooling year. They found that L2 writers utilised more certainty features while L1 writers applied more uncertainty features when asserting propositions. Likewise, Schleppegrell (2004) analysed the laboratory reports written by L1 and L2 Chemical Engineering students and discovered that L1 writers preferred more non-subjective stance features whilst L2 writers were more inclined to use non-objectively worded stances.

Furthermore, some studies have investigated the challenges students regularly face when it comes to transferring their knowledge into composing academic research papers (Beaufort & Williams, 2005; Wardle 2009). In a longitudinal case study by Beaufort and Williams (2005), they examined the way an undergraduate student associated himself as a novice history writer with discourse community of his discipline for three years and analysed the changes that took place in his writings. Following an examination of his essays and interviews, Beaufort and Williams discovered that the student had troubles associating with his discourse community from his writings. The interviews unveiled that the classroom was the sole discourse community he participated in. This finding was coherent with Wardle's (2009) argument in which students' writing aimed to show the skills acquired in the classroom; with students believing that academic writing is merely to satisfy the requirements of a course.

These findings have certainly provided crucial implications for how we look at stance based on the comparisons of L1 and L2, as well as the challenges that students experience in writing through self-expression. Nevertheless, a better way to comprehend stance-taking in student writing is to carefully observe studies which have investigated stance features at various phases of writing development (Coffin, 2002; Hewings & Hewings, 2002). Coffin (2002) investigated the students' developmental stages in academic writing of historical essays and the way student writers negotiated with their audiences. She discovered that when the students advanced into higher level writing, they used dissimilar authorial voices, specifically, they changed from being a "recorder" (words with little to no evaluative meanings) to an "interpreter" (has more discoursal features but lacking explicit judgment). Ultimately, they evolved by becoming an "adjudicator" (often utilising engagement resources to communicate with their readers). Hewings and Hewings (2002), on the other hand, examined stance-taking amongst undergraduate students at various developmental phases within the discipline of Geography. The outcomes of the study showed that first-year students utilised fewer stance features in comparison to their third-year seniors. This also indicated that as student writers transitioned to become more advanced writers, they were more familiar with academic writing conventions and publishing writing procedures in their discipline and began using a broader range of evaluative meanings. Therefore, analysing different writing levels, especially the difference between student and professional writing, is an alternative to obtain a better understanding on the way experienced writers and student writers convey their opinions and represent themselves in written text.

In terms of attitude markers, Hood (2004) discovered deviations in the utilisation of evaluative stance between academics and student writers. She analysed the introduction sections of four published RAs and six undergraduate dissertations written by six graduate students as part of a class project. Hood (2004) highlighted the students' expressions and academicians' behaviours (*impolite, rude*), emotions and feelings (*upset*, *happy*), and the way they value the items' aesthetic qualities (*useful*). The findings unveiled that students utilised more linguistic markers as a way to reflect their behaviours, emotional evaluations, and feelings. On the contrary, academicians assessed more of the qualities of material in comparison to the student writers. Barton's (2002) findings were consistent with the aforementioned findings in which student writers exhibited more personal experiences in their written work. Hood (2006) remarked that professional writers successfully presented consistent evaluation to corroborate their arguments. Similar outcomes were also seen in student interviews in Hyland's (2004) study. He discovered that novice students felt uncomfortable in utilising self-mentions as they felt they were unfitting for academic writing. They preferred to utilise modal verbs such as *could, may, might,* and *can* to cautiously argue their claims and to refrain expressing responsibility to the reader. In a study by Aull and Lancaster (2014), they analysed the stance expressions in first-year university students from different disciplines and made a comparison on the stance usage in the papers written by upper-level undergraduate students and published RAs. The results of the study indicated that first-year undergraduate students applied less frequent stance expressions than their more advanced peers and academicians.

In a nutshell, the increasing number of works and researches identified the significant differences between student writers and professional writers when it came to employing stance features and building interaction. In these studies, it was crystal clear that student writers did not use the stance features amply, unlike academicians. They also abstained from portraying themselves as an authoritative figure using self-mentions and laid out the written material descriptively bereft of stance. This in turn, creates a need for an in-depth exploration of writing by students and professionals. With the objective to expand the analysis of stance features and its corresponding differences in student and professional writings, this research endeavours to analyse how Malaysian TESL undergraduate students and writers of published RAs construct the stance in TESL discipline based on Hyland's (2005a; 2005b) interactional model of metadiscourse.

3. METHODOLOGY

3.1 Theoretical Framework

3.1.1 Hyland's (2005a; 2005b) Interactional Model of Metadiscourse – Stance Features

Aforementioned in the previous section (i.e. Literature Review), Hyland (2005a; 2005b) separated the metadiscoursal interaction model into two categories, which are stance features and engagement markers. Instead of engagement markers, stance features (as highlighted in Figure 1) will be explained in-depth as to address the research objectives of this study.

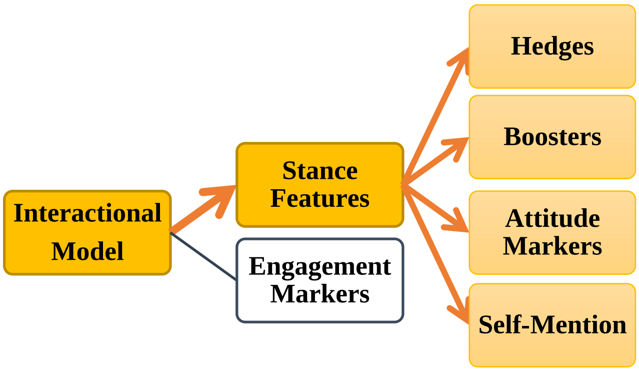

Figure 1: Adapted from Hyland's (2005a; 2005b) Interactional Model of Metadiscourse

Hyland (2005a; 2005b; 2008) defined 'Stance' as the textual voice of the writer or the personality recognised by a discourse community. This pertains to the writer's interaction features and expresses various kinds of personal judgement and emotions that consist of the writer's attitude towards specific information, how sure they are of its accuracy, the way access was gained to this information, and their perspective towards it; and this is shown to the reader. As explained before in 'Literature Review', there are three primary components – evidentiality, affect, and relation. These three components consist of four elements which are hedges, boosters, attitude markers, and self-mention (Hyland, 2008).

A. Hedges

Hedges are instruments that provide an incomplete commitment to a suggestion, meaning that the writer's claim is established on plausible reasoning instead of knowledge or a confirmed fact. Basically, they show the confidence level that the writer ascribes to a claim. Claims such as this can question the readers' beliefs and research. Hence, it is frequently wise for writers to moderate their opinions and avert extreme categoricalness in their statements. Hedges function as an open discursive space which allows readers to challenge interpretations.

B. Boosters

Boosters permit writers to convey certainty in their claims and to signify engagement with their research topic and gain solidarity with their readers. Although they limit the opportunities for other voices, they frequently place emphasis on shared information and group membership since writers are inclined to support ideas that have good prospects of being recognised. Similar to hedges, they frequently occur in clusters.

C. Attitude Markers

Attitude markers point to the writer's affective state, instead of epistemically, behaviour to suggestions, expressing agreement, frustration, importance, surprise, and evaluation. Attitude can be conveyed in a variety of ways. Martin (2000) sought to demonstrate attitude by mapping the available choices to speakers in expressing affect in his appraisal model. Attitude is explicitly indicated by adjectives, attitude verbs, and sentence adverbs. The attitude marking in academic writing enables writers to pick a side and align themselves with positions of disciplinary-oriented value. Attitude markers are used in academic research genres "to present the authors' evaluation, interact with their readers, and to take their stance in the field" (Sorayyaei Azar & Azirah, 2019, p. 168). In other words, attitude markers have significant impact on enhancing evaluation of academic discourses.

D. Self-Mention

Self-mention concerns "the utilisation of first-person pronouns and possessive adjectives to deliver information" (Hyland, 2001, p. 207). Demonstrating a 'discoursal self' is key to the process of writing (Ivanic, 1998). It cannot be avoided in externalising a writer's self-impression and the way he or she picks a side, in terms of "arguments, discipline, and readers". Explicit author reference, either absent or present, is a conscious option for writers to assume a specific stance and "disciplinary-situated authorial identity".

3.1.2 Yang and Allison's (2003) 'Conclusion' Section Framework

Move1 (M1): Summarising the study

Move2 (M2): Evaluating the study

- **Step 1 (S1)**: Indicating significance/advantage
- **Step 2 (S2)**: Indicating limitations
- **Step 3 (S3)**: Evaluating methodology

Move3 (M3): Deduction from the research

- **Step 1 (S1)**: Recommending further research
- **Step 2 (S2)**: Drawing pedagogical implications

Figure 2: Adapted from Yang and Allison's (2003) 'Conclusion' Section Framework

In order to achieve the aims of the current research, Yang and Allison's (2003) framework is used. Ghazanfari, Mohtasham, and Amirsheibani (2016) argued that the 'Conclusion' section is one of the most crucial components in academic writing, where the writer has the chance to reassess the study's main topic, and suggest its limitation and adumbrate the study's outcomes. Sorayyaei Azar and Azirah (2017) also contended that many of the review article Conclusion sections, unlike RAs, appeared in very lengthy, recursive, and cyclical paragraphs. They noticed that this section sometimes does not even appear in the review article genre. It was also shown that there is variation concerning the moves and rhetorical strategies that exist within Conclusion sections. In their research, a few of the rhetorical strategies were identified in the review article genre including 'Defining the challenges', 'Analysing reasons', 'Presenting an idea', 'Indicating a need', 'Reviewing and suggesting possible solutions', and 'Highlighting the author's view' (Sorayyaei Azar & Azirah, 2017, p. 14). Yang and Allison's (2003) study is the first to investigate the way Applied Linguistics writers transitioned from 'Results' to 'Conclusion'. From their findings, they discovered the rhetorical structure for the 'Conclusion' sections of RAs, as depicted in Figure 2.

Ghazanfari, Mohtasham, and Amirsheibani (2016) further explained the function of each move in the 'Conclusion' section, as follows:

A. Move 1 (M1) – Summarising the Study

This move mainly serves to sum-up the research by accenting the study's key findings. As this move is often seen at the start of the 'Conclusion' section, it is easily recognised and can be analysed through discerning the parts which provide a concise recap of the study, the objectives, and research findings. For this move, writers normally use statements which are written in simple present or past tense.

B. Move 2 (M2) – Evaluating the Study

This move is concerned with the authors' frequent justification of their study by employing three steps which are 'Indicating significance/advantage' (Step 1), 'Indicating limitations' (Step 2), and 'Evaluating methodology' (Step 3). Step 1 ordinarily refers to the author's argument about the importance and beneficent of his or her study. Step 2 pertains to the restriction or difficulty he or she faces while conducting the research. Step 3 is the stage where the author assesses and judges the methods used in conducting the research.

C. Move 3 (M3) – Deduction from the Research

The authors normally state the degree that the results of their studies can contribute to the existing field knowledge. Identification of this move is easy as there is only a need to recognise the two steps entitled 'Recommending further research' (Step 1) and 'Drawing pedagogical implications' (Step 2). In Step 1, authors generally urge for more research to be done by suggesting ideas to the readers. As for Step 2, authors would suggest implications from their results for teaching and learning.

3.2 Research Design

This genre-based research employed a mixed-method design which involved two main parts. For the first part of this research, the rhetorical move patterns of 'Conclusion' sections in 16 TESL-related RAs' and 16 Malaysian TESL undergraduates' FYPs were manually analysed by employing Yang and Allison's (2003) 'Conclusion' section framework. This part of the study was examined qualitatively; however, the frequencies and percentages of the moves were calculated and presented to enable comparisons between the two corpora. Then, for the second part of this research, Hyland's (2005a; 2005b; 2008) stance features taxonomy was used to investigate the stance features in the 'Conclusion' sections of the two corpora. Each element of the stance features was manually examined through qualitative analysis in terms of form, type, and frequency, but their frequencies and percentages were also calculated and presented to compare the two corpora. After analysing the stance features, these features were examined in different moves of 16 RAs and 16 FYPs. This was done to distinguish in which moves the stance features were mainly clustered and to discover their functions based on the move which they were found in.

3.3 Corpora

In this study, two corpora were used, in which one corpus was chosen from five TESL-related journals, while the other corpus was selected from undergraduate TESL-related research projects of two Malaysian private universities. The TESL-related journals were relevant to an audience in English language education, such as *Asian EFL (AEFL), Asian English for Specific Purposes Journal (AESP), GEMA Online® Journal of Language Studies, TESOL Journal (TJ),* and *TESOL Quarterly (TQ)*. The RAs and FYPs were randomly chosen but limited to the year 2017. For ethical considerations, the full particulars of FYPs will be kept confidential, but some of the 'Conclusion' sections can be found in Appendix A. Meanwhile, the details and the 'Conclusion' sections of RAs can be found in Appendix B. Both corpora were utilised to identify and compare the rhetorical move patterns and stance features in the 'Conclusion' sections. Appendix C lists all the stance features found in both corpora whilst Table 1 displays the details of these corpora.

Table 1: Summary of the Corpora Used for their 'Conclusion' Sections

RAs in Published Journals	# of words	Year	FYPs Students' Samples (SS)	# of words
AEFL 1	440	2017	1	119
AEFL 2	442		2	255
AEFL 3	1035		3	526
AESP 4	220		4	130
AESP 5	448		5	526
AESP 6	635		6	44
GEMA 7	433		7	118
TJ 8	307		8	119
TJ 9	109		9	745
TJ 10	136		10	304
TQ 11	1353		11	225
TJ 12	307		12	370
TJ 13	356		13	668
TQ 14	153		14	275
TQ 15	1116		15	280
TQ 16	213		16	412
TOTAL	**7703**		**TOTAL**	**5116**
Total Number of Text in Corpus (RAs)	**16**		**Total Number of Text in Corpus (FYPs)**	**16**

3.4 Procedures for Corpus Processing and Analysing

Identified data from the 'Conclusion' sections of the RAs and FYPs were collected via the extraction of complete 'Conclusion' sections. These raw data were then used to investigate the moves and stance features that the writers used in the 'Conclusion' section via the top-down approach. In order to identify the rhetorical move patterns according to Yang and Allison's (2003) 'Conclusion' section framework, each of the sentences in the 'Conclusion' section were analysed to ascertain the writer's communicative intentions through the words used and the way sentences were formed. In other words, the moves were distinguished based on the content or function of the ‘Conclusion’ section. This necessitates the knowledge of applied linguistics, the forms of communicative purpose and the linguistic features of texts, but it is *per se* a subjective practice made up of the author’s choices which are reflected in their writing (Sorayyaei Azar, 2012). Situations in which text segments might have more than one function were analysed in terms of the most prominent purposes. There may be difficulty in identifying the prominent purpose in some context. Hence, this involved re-reading the corpus several times by taking all linguistic elements into account, so that identification was done precisely and satisfactorily. After identifying the moves, the moves were analysed to determine the prevalent patterns using a paragraph or sentences as the unit of analysis. If there was more than one move in a sentence, it was coded as two moves instead. The frequency of the moves was counted manually.

Following the identification and analysis of rhetorical move patterns, as well as the adoption of the top-down approach, this next part involved identifying the stance features in accordance with Hyland’s (2005a; 2005b) interactional model of metadiscourse. The stance features were identified and colour-coded (Blue – Hedges; Green – Booster; Red – Attitude Markers; Yellow – Self-mentions). The identification process was similar to the first part. Then, the frequency of stance features was counted manually.

However, prior to the tabulation of data, inter-rater reliability was done in order to evaluate the reliability of both move boundary identification and stance features. Each researcher independently analysed both rhetorical move patterns and stance features before a comparison was made. The agreement percentage was calculated according to the Cohen-Kappa inter-rater agreement as follows:

$$Cohen - Kappa\ Index\ Value\ (k) = \frac{p_o - p_e}{1 - p_e}$$

where p_o = relative observed agreement among raters and p_e = hypothetical probability of chance agreement. Tables 2 and 3 show the Cohen-Kappa values for both rhetorical move patterns and stance features, respectively. According to Landis and Koch (1977), the Cohen-Kappa index values (k) ranging from 0.81 to 1.00 is regarded as “almost or complete agreement”.

Table 2: The Cohen-Kappa Values for Rhetorical Move Patterns

	Inter-Rater Reliability (Cohen-Kappa Index Value, k)		
Move Analysis	**Move 1 (M1)**	**Move 2 (M2)**	**Move 3 (M3)**
Malaysian TESL undergraduates' FYPs	$k = \frac{0.94-0.52}{1-0.52} = 0.88$	0.81	0.85
TESL-related RAs	0.83	0.84	0.86

Table 3: The Cohen-Kappa Values for Stance Features

	Inter-Rater Reliability (Cohen-Kappa Index Value, k)			
Stance Features	**Hedges**	**Booster**	**Attitude Markers**	**Self-Mention**
Malaysian TESL undergraduates' FYPs	0.85	0.86	0.82	0.88
TESL-related RAs	0.84	0.83	0.81	0.86

As the total number of words was small for both the RA and FYP corpora, the frequency of rhetorical move patterns and stance features were calculated per 500 words and then tabulated in terms of frequency and percentages. The standard for the classification and justification for the frequency of rhetorical move patterns was defined based on Kanoksilapatham's (2005) study. The cut-off point for the classification of rhetorical move patterns in the present study was 60%. When a specific move occurred in every 'Conclusion' section (100%), the move is considered 'obligatory'. If the percentage of occurrence is between 60% and 99%, it is considered 'conventional' and below 60%, it is deemed 'optional'. The quantitative and qualitative findings of the analyses are presented in the following section.

4. Results

4.1 Rhetorical Move Patterns in the 'Conclusion' Section: TESL-Related RAs vs. Malaysian TESL Undergraduates' FYPs

This section attempts to answer the aforementioned research questions (1), (4), and (5). Table 4 shows the frequency and percentage of appearance of the rhetorical moves in the ‘Conclusion’ section of both TESL-related RAs and Malaysian TESL undergraduates’ FYPs. Move1 and Move 2 Step 1 were seen in all 16 RAs as opposed to FYPs. The use of rhetorical moves in FYPs was unequally distributed. The most frequent rhetorical moves in the ‘Conclusion’ section of FYPs were Move 2 Step 1, followed by Move 1 and then Move 3 Step 2. Move2 (except Step 3) and Move 3 of RAs were realised by their equal use of steps. A noticeable difference can be seen in Table 4, indicating Move 2 Step 2 being found in more than 68.75% of the RAs as compared to the FYPs. However, the differences of other moves between the two corpora were not significant. Move 2 and Move 3 in FYPs were not realised due to the unequal use of steps. Based on the standards set by Kanoksilapatham’s (2005) study, the rhetorical move patterns for both RAs and FYPs were classified. For RAs, Move1 and Move2 Step 1 were ‘obligatory’; Move 2 Step 2, Move 3 Step 1, and Move 3 Step 2 were ‘conventional’; while Move 3 Step 3 was ‘optional’. On the other hand, there were no ‘obligatory’ Moves for FYPs. Move 1, Move 2 Step 1, and Move 3 Step 2 were considered ‘conventional’ while Move 2 Step 2, Move2 Step 3, and Move 3 Step 1 were ‘optional’.

Tables 5 and 6 demonstrate the overall occurrences of steps and moves, number of move types, and move structure in the ‘Conclusion’ section of each TESL-related RA and Malaysian TESL undergraduate FYP, respectively. All three move structures were employed in all RAs. As for FYPs, there were only nine FYPs out of sixteen in which all three move structures were applied. Move 1 was not included in three FYPs, Move 2 was not employed in two FYPs, and Move 3 was not included in another two FYPs. There were differences in terms of order of rhetorical moves. Nine out of sixteen RAs and five out of sixteen FYPs followed the linear rhetorical move pattern (Move1-Move2-Move3) as highlighted in Tables 5 and 6. Both corpora had the highest occurrences of Move2. There were fewer variations of rhetorical move patterns in RAs in comparison to FYPs; thus, the occurrences of both moves and steps for RAs were lower than for FYPs. The breakdown of the moves obviously identified that students in their FYPs tended to have their own writing preferences because the results indicated that repetitive and complicated moves in FYPs were found.

Table 4: Frequency and Percentage of Appearance of the Rhetorical Moves in the 'Conclusion' Section of TESL-related RAs and Malaysian TESL undergraduates' FYPs

Moves		RAs		FYPs (SS)	
		Present in	**Percentage (%)**	**Present in**	**Percentage (%)**
M1	Summarising the study	16	100	13	81.25
M2 S1	Indicating significance/ or advantage	16	100	14	87.5
M2 S2	Indicating limitations	13	81.25	2	12.5
M2 S3	Evaluating methodology	5	31.25	3	18.75
M3 S1	Recommending further research	12	75	4	25
M3 S2	Drawing pedagogical implications	14	87.5	12	75

Table 5: Overall Occurrences of Moves and Steps, Number of Types of Move, and Move Structure in the 'Conclusion' Section of Each TESL-related RAs

RAs	MOVES						Total Number of Moves	Number of Types of Move	Order of Move Patterns
	M1	**M2**			**M3**				
		S1	**S2**	**S3**	**S1**	**S2**			
AEFL 1	1	3			1		5	3	M1 – M2S1 - M2S1 - M2S1 – M3S1
AEFL 2	2	2	1		3	2	10		M1 – M2S1 – M3S1 – M3S2 – M3S1 – M3S2 – M1 – M2S1 – M2S2 – M3S1
AEFL 3	5	9	2	1	1	8	26		M1 – M3S2 – M1 – M3S2 – M2S1 – M1 – M2S2 – M2S2 – M3S2 – M3S2 – M2S1 – M3S2 – M3S2 – M2S2 – M1 – M2S1 – M1 – M2S1– M2S1 – M3S2 – M2S1– M2S2 – M2S3 – M2S1 – M3S2 – M3S1
AESP 4	2	2	1		1	1	7		M1 – M2S1 – M1 – M2S1 – M2S2 – M3S1 – M3S2
AESP 5	2	2	1		1	1	7		M1 – M2S1 – M2S2 – M1 – M2S1 – M3S1 – M3S2
AESP 6	2	4	6		6	1	19		M1 – M2S1 – M2S2 – M2S1 – M2S2 – M2S1 – M2S2 – M3S1 – M2S2 – M3S1 – M2S2 – M3S1 – M1 – M2S2 – M3S1 – M2S1 – M3S1 – M3S2
GEMA 7	1	4	2		3	2	12		M1 – M2S1 – M3S2 – M2S1 – M2S1 – M3S1 – M2S2 – M3S1 – M2S2 – M3S1 – M3S2 – M2S1
TJ 8	1	3	2	1		1	8		M2S1 – M1 – M2S1 – M2S2 – M2S3 – M2S2 – M2S1 – M3S2
TJ 9	1	1	1	2		1	6		M1 – M2S1 – M2S2 – M3S2
TJ 10	1	2	1			2	6		M2S2 – M2S1 – M3S2 – M1 – M2S1 – M3S2
TQ 11	4	7	3	2	3	5	24		M1 – M1 – M2S1 – M1 – M2S1 – M1 – M2S2 – M3S1 – M2S2 – M3S1 – M3S2 – M2S1 – M3S2 – M2S2 – M2S3 – M2S1 – M3S2 – M2S3 – M2S1 – M3S2 – M2S1 – M3S1
TJ 12	1	2	1		1	3	8		M1 – M2S1 – M3S2 – M3S2 – M2S1 – M2S2 – M3S2 – M3S1
TJ 13	2	4		1	1	3	11		M1 – M3S2 – M2S1 – M1 – M2S1 – M2S1 – M2S3 – M3S2 – M2S1 – M3S1 – M3S2
TQ 14	1	1	3		1		6		M1 – M2S1 – M2S2 – M3S1 – M2S2 – M2S2
TQ 15	4	11	4	1	1	5	26		M2S1 – M3S2 – M2S1 – M2S1 – M3S2 – M3S2 – M2S1 – M2S1 – M3S2 – M1 – M2S1 - M1 – M2S1 – M2S1 – M1 – M2S1 – M2S2 – M2S1 – M2S2 – M1 – M2S2 – M2S3 – M3S2 – M2S2 – M2S1 – M3S1
TQ 16	1	3				1	5		M1 – M2S1 – M2S1 – M2S1 – M3S2
Total	**31**	**60**	**28**	**8**	**23**	**36**	**186**		

Total (Steps)									
%		**38.7**	**18.1**	**5.2**	**14.8**	**23.2**			
Total Occurrences	**155**								
Total (Moves)	**31**	**96**			**59**				
%	**16.7**	**51.6**			**31.7**				
Total Occurrences	**186**								

Table 6: Overall Occurrences of Moves and Steps, Number of Types of Move, and Move Structure in the 'Conclusion' Section of Each Malaysian TESL undergraduates' FYPs

SS	MOVES						Total Number of Moves	Number of Types of Moves	Order of Move Patterns
	M1	**M2**			**M3**				
		S1	**S2**	**S3**	**S1**	**S2**			
1		3			1	1	5	2	M2S1 – M3S1 – M3S2 – M2S1 – M2S1
2	13	1	1				15	2	M2S1 – M1 – M1 – M1 – M1 – M1 – M1 – M1 – M1 – M1 – M1 – M1 – M2S2 – M1 – M1
3	7	8				5	20	3	M1 – M1 – M1 -M3S2 – M1 – M2S1 – M1 – M2S1 – M2S1 – M2S1 – M2S1 – M3S2 – M1 – M3S2 – M3S2 – M2S1 – M2S1 – M1 – M2S1 – M3S2
4	4	1				1	6	3	M1 – M1 – M1 – M1 – M2S1 – M3S2
5	3	15		1	1	6	26	3	M1 – M1 – M2S1 – M2S1 – M2S1 – M2S1 – M2S1 – M2S3 – M2S1 – M2S1 – M2S1 – M2S1 – M2S1 – M2S1 – M1 – M2S1 – M3S2 – M3S2 – M3S2 – M3S2 – M3S2 – M2S1 – M2S1 – M2S1 – M3S1 – M3S2
6	1					1	2	2	M1 – M3S2
7	1	3					4	2	M1 – M2S1 – M2S1 – M2S1
8	2					2	4	2	M1 – M1 – M3S2 – M3S2
9	3	16		2		10	31	3	M1 – M2S1 – M2S1 – M3S2 – M3S2 – M1 – M1 – M2S1 – M2S3 – M2S1 – M2S1 – M2S1 – M2S1 – M2S1 – M2S3 – M2S1 – M2S1 – M3S2 – M2S1 – M2S1 – M2S1 – M2S1 – M2S1 – M2S1 – M2S1 – M3S2 – M3S2 – M3S2 – M3S2 – M3S2 – M3S2 – M3S2
10	5	12				1	18	3	M1 – M1 – M2S1 – M2S1 – M1 – M2S1 – M2S1 – M1 – M2S1 – M2S1 – M2S1 – M1 – M1 – M1 – M2S1 – M2S1 – M2S1 – M2S1 – M2S1 – M2S1 – M2S1 – M3S2
11	2	5			1		8	3	M1 – M2S1 – M1 -– M2S1 – M2S1 – M2S1 – M2S1 – M3S1
12	4	6				2	12	3	M1 – M1 – M1 – M1 – M2S1 – M2S1 -M3S2 – M2S1 – M3S2 – M2S1 – M2S1 – M2S1
13		2	6	4		6	18	2	M2S1 – M3S2 – M3S2 – M2S1 – M2S3 – M2S3 – M2S2 – M2S3 – M3S2 – M2S2 – M2S2 – M3S2 – M3S2 – M2S2 – M2S2 – M2S2 – M3S2 – M3S2
14		6				4	10	2	M2S1 – M2S1 – M3S2 – M3S2 – M2S1 – M2S1 – M3S2 – M2S1 – M3S2 – M2S1
15	5	4				1	10	3	M1 – M1 – M1 – M1 – M2S1 – M2S1 – M1 – M2S1 – M3S2 – M2S1

16	4	5			5		14	3	M2S1 – M1 – M1 – M1 – M2S1 – M2S1 – M2S1 – M2S1 – M3S1 – M3S1 – M3S1 – M3S1 – M1 – M3S1
Total	**54**	**87**	**7**	**7**	**8**	**40**	**203**		
Total (Steps)									
%		**58.4**	**4.7**	**4.7**	**5.4**	**26.8**			
Total Occurrences	**149**								
Total (Moves)	**54**	**101**			**48**				
%	**26.6**	**49.8**			**23.6**				
Total Occurrences	**203**								

The following are excerpts extracted from both RAs and FYPs to indicate the correct and inappropriate usage of rhetorical move patterns according to the detailed description of Yang and Allison's (2003) 'Conclusion' section framework.

Below are the excerpts extracted from RAs due to the proper usage of rhetorical move patterns:

(1) This study **explored** students' experiences during the writing portfolio process, including their self-awareness of writing process, self-reflection of writing growth, and self-evaluation of writing ability. [Move1, AEFL 3]

(2) **As explained** in the findings section of this study, multi-drafting **gave** students **opportunities** to revise and **improve** drafts. [Move2 S1, AEFL 3]

(3) The findings of this study were **limited** by 25 English major students in an EFL college writing class. [Move2 S2, AEFL 3]

(4) In spite of **this limitation, the researcher provided detailed** descriptions of data in contexts for readers who **would** like to **transfer** the findings to **similar** contexts. [Move2 S3, AEFL 3]

(5) Further studies **can** include a **wider range** of students, for example, to **investigate** the **effects** of writing portfolios on students of **different** English proficiency levels or of **different** cultural backgrounds. Future research **could also explore** how **experienced** teachers **employ** practical techniques or **strategies** to **make** the portfolio process **more effective**. [Move3 S1, AEFL 3]

(6) It is **hoped** that the **suggestions raised** in this study **would** be **useful** for teachers in other EFL contexts. [Move3 S2, AEFL 3]

The next part contains the excerpts extracted from FYPs due to the improper usage of rhetorical move patterns mostly brought about by grammatical errors (displayed by the zigzag lines) made by Malaysian TESL undergraduates:

(1) Students were **explained** how roleplay **can improve** their narrative writing skills… [Move1, SS 2]

(2) **Conducting** research on students from **different** proficiency level **would allow us** to **identify** how **useful** to teach part of speech using songs… [Move2 S1, SS 3]

(3) …, even though there's **several complications** throughout the research as mentioned in… [Move2 S2, SS 2]

(4) It **can deduced** that that this technique **might** not be **suitable** for all the students. [Move2 S3, SS 9]

(5) Thus, this research study **should** be **taken into consideration** and carry out in each and every class to **improvise** every student's proficiency in English Language…[Move3 S1, SS 5]

(6) When **we looked in depth**, this research study definitely gave a lot of **positive impacts** to the teachers and future educators. [Move3 S2, SS 5]

4.2 Stance Features in the 'Conclusion' Section: TESL-Related RAs vs. Malaysian TESL Undergraduates' FYPs

Tables 7, 8, and 9 show the overall distribution of stance features in the 'Conclusion' section of both corpora. This was to address research questions (2), (4), and (5). Based on the findings (Tables 7 & 8), the most common stance feature occurring in both corpora are attitude markers. However, the second most common stance feature for both corpora was different. For instance, more hedges were used in RAs while more boosters were found in FYPs. Both corpora also shared the least common stance feature, self-mention. After doing the normalised summation of stance features in the respective corpus, it was found that more stance features occurred in FYPs in comparison to RAs (see Table 9). As for the frequency of the self-mentions like 'I' and 'We' pronouns, there were only two 'I' and six 'We' pronouns in FYPs, while RAs had only one 'I' and 14 'We' pronouns (see Table 10). This indicated a significant difference in the usage of the 'We' pronoun in both corpora.

Table 7: Overall Distribution of Stance Features in the 'Conclusion' Section of Each TESL-related RAs

RAs	Total No. of Hedges	Hedges Per 500 words	Total No. of Boosters	Boosters Per 500 words	Total No. of Attitude Markers	Attitude Markers Per 500 words	Total No. of Self-Mention Markers	Self-Mention Markers Per 500 words
AEFL 1 (440 words)	7	7.95	16	18.18	66	75	13	14.77
AEFL 2 (442 words)	10	11.31	8	9.049	39	44.11	0	0
AEFL 3 (1035 words)	13	6.28	7	3.38	102	49.27	1	0.48
AESP 4 (220 words)	1	2.27	3	6.81	31	70.45	0	0
AESP 5 (448 words)	10	11.16	7	7.81	30	33.48	0	0
AESP 6 (635 words)	14	11.02	12	9.44	69	54.33	0	0
GEMA 7 (433 words)	11	12.7	5	5.77	40	4.61	0	0
TJ 8 (307 words)	8	1.3	6	0.97	29	47.23	1	0.16
TJ 9 (109 words)	2	9.17	0	0	14	64.22	0	0
TJ 10 (136 words)	3	11.02	2	7.35	27	99.26	0	0
TQ 11 (1353 words)	32	11.82	13	4.8	128	47.3	0	0
TJ 12 (307 words)	11	17.9	5	8.14	58	94.46	0	0
TJ 13 (356 words)	7	9.38	7	9.38	62	91.29	6	8.42
TQ 14 (153 words)	0	0	4	13.07	15	49.01	1	3.26
TQ 15 (1116 words)	15	6.72	13	5.82	122	54.65	2	0.89
TQ 16 (213 words)	3	7.04	3	7.04	35	82.15	3	7.04
TOTAL	**147**	**137.04**	**111**	**117.009**	**867**	**960.82**	**27**	**35.02**

Table 8: Overall Distribution of Stance Features in the 'Conclusion' Section of Each Malaysian TESL Undergraduates' FYPs

SS	Total No. of Hedges	Hedges Per 500 words	Total No. of Boosters	Boosters Per 500 words	Total No. of Attitude Markers	Attitude Markers Per 500 words	Total No. of Self-Mention Markers	Self-Mention Markers Per 500 words
SS 1 (119 words)	24	100.84	43	180.67	154	647.05	3	12.6
SS 2 (255 words)	5	9.8	2	3.92	64	125.49	1	1.96
SS 3 (526 words)	23	21.86	32	30.41	152	144.48	18	17.11
SS 4 (130 words)	6	23.07	2	7.69	36	138.46	2	7.69
SS 5 (526 words)	9	8.55	12	11.4	74	70.34	3	2.85
SS 6 (44 words)	10	9.51	11	10.45	66	62.73	0	0
SS 7 (118words)	3	12.71	2	8.47	15	63.55	0	0
SS 8 (119 words)	3	12.61	2	8.4	19	79.83	0	0
SS 9 (745 words)	23	15.43	14	9.39	158	106.04	0	0
SS 10 (304 words)	4	6.57	9	14.80	37	60.85	0	0
SS 11 (225 words)	3	6.66	6	13.33	24	53.33	1	2.22
SS 12 (370 words)	5	6.75	1	1.35	61	82.43	2	2.7
SS 13 (668 words)	9	6.73	13	9.73	75	56.13	2	1.49
SS 14 (275 words)	2	3.63	7	12.72	40	72.72	0	0
SS 15 (280 words)	4	7.14	5	8.92	37	66.07	1	1.78
SS 16 (412 words)	5	6.06	8	9.71	59	71.6	1	1.21
TOTAL	**138**	**257.92**	**169**	**341.36**	**1071**	**1901.1**	**34**	**12.6**

Table 9: Distribution of Stance Features across the Two Corpora (per 500 words)

Stance Features	***Students' FYPs***	***Published RAs***	***Total***
Hedges	138	147	285
Boosters	169	121	290
Attitude Markers	1071	823	1894
Self-Mention Markers	34	27	61
Total	1412	1118	

Table 10: Frequency of Self-Mentions used in the 'Conclusion Section' of Each TESL -related RAs and Malaysian TESL undergraduates' FYPs

No.	***FYPs***		***RAs***	
1	me the researcher	(1) (2)	our we the researchers the researcher	(2) (5) (5) (1)
2	I	(2)		
3	the researcher us researcher my	(5) (1) (2) (1)	the author	(1)
4	the researcher	(2)		
5	we	(3)		
6				
7				
8			I	(1)
9				
10				
11	we	(1)		
12	the researcher	(2)		
13	My we	(1) (1)	we our	(5) (1)
14			our	(1)
15	the researchers	(1)	we	(2)
16	we	(1)	our we	(1) (2)

4.3 Distribution of Stance Features in the Rhetorical Move Patterns of the 'Conclusion' Section: TESL-Related RAs vs. Malaysian TESL Undergraduates' FYPs

To address research questions (3) and (5), Table 11 was tabulated to determine if the rhetorical moves were being realised by the stance features found in the 'Conclusion' section: TESL-related RAs vs. Malaysian TESL undergraduates' FYPs. As mentioned before, attitude markers were the most frequent stance feature found in both corpora, and therefore, all the rhetorical moves were not realised by their respective stance features due to this overwhelming occurrence of attitude markers.

Table 11: Frequency and Percentage (F & %) of Stance Features in Each Move in the 'Conclusion Section of Each TESL-related RAs and Malaysian TESL undergraduates' FYPs

MOVES		Total Number of Words for RAs: 7703 words								Total Number of Words for FYPs: 5116 words							
		Hedges		**Boosters**		**Self-Mention**		**Attitude Markers**		**Hedges**		**Boosters**		**Self-Mention**		**Attitude Markers**	
		F & %	**Per 500 words**	**F & %**	**Per 500 words**	**F & %**	**Per 500 words**	**F & %**	**Per 500 words**	**F & %**	**Per 500 words**	**F & %**	**Per 500 words**	**F & %**	**Per 500 words**	**F & %**	**Per 500 words**
M1		6 (4.8%)	0.39	38 (35.5%)	2.47	130 (13.2%)	8.44	5 (38.5%)	0.33	9 (12.9 %)	0.88	12 (14%)	1.17	99 (21.8 %)	9.68	7 (50 %)	0.68
M2	**S1**	42 (33.9%)	2.73	45 (42 %)	2.92	416 (42.2 %)	27	1 (7.7 %)	0.065	24 (34.3%)	2.35	49 (57 %)	4.79	209 (46 %)	20.43	-	
	S2	21 (16.9%)	1.36	9 (8.4 %)	0.58	105 (10.7 %)	6.816	2 (15.4 %)	0.13	4 (5.7%)	0.39	2 (2.3%)	0.19	10 (2.2 %)	0.98	1 (7.1%)	0.09
	S3	4 (3.2%)	0.26	1 (0.9 %)	0.065	33 (3.4 %)	2.14	1 (7.67%)	0.065	4 (5.7%)	0.39	1 (1.2%)	0.09	24 (5.3%)	2.35	-	
M3	**S1**	28 (22.6%)	1.82	8 (7.5 %)	0.519	126 (12.8 %)	8.18	2 (15.4%)	0.13	5 (7.1%)	0.49	2 (2.3%)	0.19	22 (4.8 %)	2.15	-	
	S2	23 (18.5%)	1.49	6 (5.6 %)	0.39	175 (17.7 %)	11.36	2 (15.4%)	0.13	24 (34.3%)	2.35	20 (23.3 %)	1.95	90 (19.8 %)	8.79	6 (42.9 %)	0.59
Total		**124**		**107**		**985**		**13**		**70**		**86**		**454**		**14**	

5. Discussion

According to the results of the rhetorical move patterns of TESL-related RAs and Malaysian TESL undergraduates' FYPs, Table 4 generally indicates that in both corpora, Yang and Allison's (2003) 'Conclusion' section framework was often employed. However, when the rhetorical move patterns were tabulated in detail as shown in Table 5 and Table 6, only TESL-related RAs employed all moves while half of the Malaysian TESL undergraduates' FYPs applied only two out of three moves. This may be attributed to the lack of genre knowledge awareness among many Malaysian TESL undergraduates in terms of rhetorical structures and metadiscourse stance features.

Furthermore, both TESL-related RAs and Malaysian TESL undergraduates' FYPs do not entirely conform to Yang and Allison's (2003) 'Conclusion' section framework. The only conformation was the application of their framework in all TESL-related RAs and half of Malaysian TESL undergraduates' FYPs. Firstly, Move2 was found to be the most frequent move in both corpora. This did not concur with all three studies that argued Move1 occurred most often (Ghazanfari, Mohtasham, & Amirsheibani, 2016; Yang & Allison, 2003; Zamani & Ebadi, 2016). It seemed that the authors of both corpora wanted to place more emphasis on what their studies could contribute to existing knowledge as indirectly propelled by editors of journals and lecturers. Secondly, the rhetorical move patterns in 7 TESL-related RAs and 11 Malaysian TESL undergraduates' FYPs were not linear, which also disagreed with Yang and Allison's findings. Authors of both corpora may not have realised the moves employed during writing and may have written their 'Conclusion' sections by following the flow of the preceding sentences. Thirdly, there was only partial concurrence with Amnuai and Wannaruk's (2013) findings that there were no obligatory moves in both the corpora which they analysed. The findings of this study presented that the TESL-related RAs had obligatory, conventional, and optional moves, while Malaysian TESL undergraduates' FYPs had only conventional and optional moves. This suggests that the majority of Malaysian TESL undergraduates were not aware of the convention of rhetorical move patterns.

In terms of stance features, it was found that both corpora utilised more attitude markers instead of hedges, which was discovered in Hyland and Tse's (2004) study. This could reflect that authors of both corpora used attitude markers to express their affective states and also to stand by their chosen side. As for TESL-related RAs, hedges had the second highest frequency after attitude markers. This could mean that their highly “affective” claims (in terms of attitude markers) were grounded by plausible reasonings, being quite the opposite of Malaysian TESL undergraduates’ FYPs. Malaysian TESL undergraduates employed more boosters instead so that their claims were more meaningful in order to circuitously impress their evaluators. Moreover, even though stance features were more frequently used in Malaysian TESL undergraduates’ FYPs, the usage of these stance features may not be entirely accurate and appropriate. This may be due to the improper usage of words attributed to the interference of L1 and their poor vocabulary knowledge, leading them to directly translate what they have thought in L1 into English during writing, apart from repeatedly reproducing specific context differently. The attitude markers in TESL-related RAs were used less frequently than in Malaysian TESL undergraduates’ FYPs, which could be due to the lengthy elaborations of each sentence. As for self-mentions, the pronouns ‘I’ and ‘We’ were more frequently used in TESL-related RAs than in Malaysian TESL undergraduates’ FYPs. However, these pronouns were not as common as mentioned in Hyland’s (2002) study. Several writers were most likely compelled by their prior knowledge to avoid the use of personal pronouns as it was supposedly frowned upon by most of the discourse community members. Such instances has been spurred on by Swetnam’s (2000) proposition in which “the general academic style utilised globally is dégagé and passive; thus, students should refrain from using personal pronouns unless there is an exceptional ground for its usage” (p. 84).

After the analysis of both rhetorical move patterns and stance features, it can be stated that Malaysian TESL undergraduates have yet to acquire the knowledge of proper English academic writing as their written discourse was not up to par with the written works of the authors of TESL-related RAs under this study. There is the expectation from the lecturers’ side that TESL undergraduates are responsible for their own weaknesses in academic writing, however it seems that Malaysian academic institutions should provide instructive and informative courses to increase the awareness of TESL undergraduates. Therefore, proper English for Academic Purposes (EAP) courses are needed at Malaysian academic institutions, especially at Malaysian private universities.

6. Conclusion

This study has sought to identify, ascertain, and compare the rhetorical move patterns and stance features employed in 16 samples of TESL-related RAs and 16 samples of Malaysian

TESL undergraduates' FYPs. The final aim of the study was to determine if Malaysian TESL undergraduates' FYPs complied with generic aspects employed by authors of TESL-related RAs. It was discovered that both Move 1 and Move 2 Step 1 of Yang and Allison's 'Conclusion' section framework were seen in all 16 RAs, while only Move 2 Step 1 was seen in all 16 FYPs. Move 2 in RAs (except Step 3) and Move 3 were realised by their equal use of steps. Meanwhile, Move 2 and Move 3 in FYPs were not realised due to the unequal use of steps. For RAs, Move 1 and Move 2 Step 1 were 'obligatory'; Move 2 Step 2, Move 3 Step 1, and Move 3 Step 2 were 'conventional'; and Move 3 Step 3 was 'optional'. In comparison, there was no 'obligatory' Move in FYPs – Move1, Move 2 Step 1, and Move 3 Step 2 were considered 'conventional' while Move 2 Step 2, Move 2 Step 3, and Move 3 Step 1 were 'optional'. All three move structures were used in all RAs whilst for FYPs, these three move structures were used in only 9 out of 16 projects. Move 2 was used most frequently in both corpora of this study.

There were fewer variations of rhetorical move patterns in RAs in comparison to FYPs; thus, the occurrences of both moves and steps for RAs were lower than FYPs. The findings revealed that the most common stance feature occurring in both corpora were the attitude markers. Additionally, there was a significant difference in the stance features used in both corpora. This in turn, concludes that many Malaysian TESL undergraduates may not be aware of the conventions and standards of research projects and EAP. Limitations were ineluctable in this study. Due to time limits and the small-scale corpus of TESL related RAs and Malaysian TESL undergraduates' FYPs of this study, there is a need to re-examine this issue involving larger corpora of both RAs and FYPs in order to confirm the study findings. Once confirmation is done, the next step in research could be making academic writing comparisons of Malaysian TESL undergraduates, before and after attending EAP and academic writing classes or workshops. The findings can be converted into teaching materials for the pedagogy of EAP programme (Flowerdew, 2013) in TESL academic settings. Comprehensive information about the conformity and non-conformity manifestations of rhetorical move patterns of research projects and RAs can better inform EAP lecturers to initiate a more TESL-referenced teaching approach that includes genre pedagogy. Thus, the empowerment of TESL lecturers' and undergraduate students' rhetorical repertoire to prepare for their research projects using the aforementioned teaching approach is therefore highly recommended.

Appendix A

SS 2

5.0 CONCLUSION AND RECOMMENDATION

5.1 CONCLUSION

The conclusion to the thesis is that the research was **successful** with **sufficient** amount of data reviewed. The topic of the thesis is roleplay **improves** students' narrative writing. Definition of roleplay is an act or performance **done** by **illustrating** the character. Roleplay gives one of a **kind insight** about the characters and atmosphere of the story. The research **starts** with pre-test where students were **instructed** to write narrative essay titled "Something funny that happen to one of your friend". Students were **ought** to write their essay in narrative form and in chronological order… During treatments, students were **introduced** to the idea of roleplay. Students were **explained** how roleplay **can improve** their narrative writing skills.. Students were **divided** into groups and students choose their own topic based on the "Rancangan Pelajaran Tahunan". For post-test, students were **given several** topics of narrative essay for them to choose titled "Your favourite birthday party", "A birthday that was disappointing", "A big storm (rain, snow or even tornado)", and "A time that the power went out". Students were **given** 20 minutes to **extract** points and 30 minutes to write essay. The test **went well** and all students participate, even though there's **several complications** throughout the research as mentioned in limitation (1.8) Throughout the research period, **I** was **excited** to **find** the **evidences** to **support** the theory that role-play **helps** students in terms of narrative writing skills. **I** am **thrilled** to **find out** if the treatments given were **adequate** to **improve** the respondent's level of writing skills.

SS 3

CHAPTER 5: CONCLUSION AND RECOMMENDATION

5.0 CONCLUSION

In the 21st Century, there is a lot of technology that **can easily found almost** everywhere… All this technology are the most **convenient** and **can** be access **almost** everywhere… The technology that **the researcher mention** above are the most **common** and **familiar** towards human race. Therefore, **implementing** music in **educating** students in part of speech **would** be the **best** as it is **easy** to be **access** by everyone… From the literature review and research **found** it is immutable that songs are **strongly connected** to language study… In addition **our** brain **can** be more **productive** and at is the **best** when they are less stress mood… The **purpose** of this research are to **investigate** how technology part speech in ESL classroom **would improve** the students by using songs… **Conducting** research on students from **different** proficiency level **would allow us** to **identify** how **useful** to teach part of speech using songs… Furthermore, the **significance** of songs does play a **big role** in **enhancing** students and on part of **speed**… Students **perception** towards part of speech does **motivate** them to **use** their short paragraph by using grammar and vocabulary **correctly**… Throughout this research, there is so many **advantage** and **benefit** that **the researcher learnt** such as **the researcher** was **able** to **understand** the interest of students so that they **would concentrate** in class **better** and **also** got to **know** how songs in education **could impact** students learning to be positive and interesting… This research had **made the researcher realize** that 21st century are really **important** and students centered **allow** students to learn a lot and participate in classroom…. Besides that, throughout **my completion** of this research, **the researcher** feel really **grateful** or doing this research and it is an eye opener for all teachers.

The new syllabus of Kurikulum Bersepadu Sekolah Menengah(KBSM) **recommends** the use of songs as part of English Language… Thus **researcher believes** that the English teachers **can** now learn a more dynamic and lively way of teaching a language art lesson by **understanding** this research… **Researcher trusts** that this research **would** be such a privilege reference for the English teacher to learn **different** way of doing actions for the action songs to make their English class more **delightful and effective** in teaching language component .

Based on the findings from this study, it is **proven** that with a **sufficient** initiative, teachers **can** adapt songs to **better suit** their teaching goals. There are several factors that **contribute** to the feasibility and **effectiveness** of such learning processes. The main **focus** of this study was to **ascertain** whether the **implementation** of songs had any **positive effects** on the participants'. **Gradual improvements** on **differentiating** and the application of part of speech **showed** that the use of song as a pedagogical tool to **help** young learners in **grasping early exposure** to grammar is **successful**. Thus, the **positive** findings of this research **will contribute** to the **betterment** of the aspects of grammatical structures in the Malaysian Secondary schools.

SS 5

CHAPTER 5

CONCLUSION

5.1: CONCLUSION

This chapter sums up the whole research study. Chapter five will be the chapter which conclusion the entire research study. The research study entitled investigating …. was a new discovery to the future educators as it showed a positive outcome. Teaching poetry can widen up students' knowledge to be more creative and enhance their critical thinking at the same time. When we introduce poetry during the English lessons,we are allowing students to open up the new cultures improving their awareness well as viewing the world from a new perspective.

Hereby, this teaching poem using Direct Method worked effectively with the students who had intermediate proficiency level. Besides that, students were able to learn a lot in the English classes as only English Language was allowed to be used in the classroom throughout this entire research study. The strategies used while teaching the poem entitled 'MY HERO' definitely made students to gain a complete understanding of the text. Besides that, students were also linguistically prepare themselves to learn the future literature components in the same way.

This research study enhanced their vocabulary to learn a lot of new word as well. Besides that, students grasps this English lessons and apply them in the other english classes as well. Students prefer to learn English Language as it without any translation because it motivates them extrinsically to obtain more knowledge about this particular language. Students also showed a lot of participation during the classroom activities while learning this poem as they prefer more English based lesson compared to translation of giving instructions in their mother tongue.

When we looked in depth, this research study definitely gave a lot of positive impacts to the teachers and future educators. Teachers tend to critically analyse on the strategies to impart the knowledge to the students. Hereby, more fun activities will be incorporated in the lesson and students will gain a lot of knowledge about this language by focusing in class and participating full-heartedly. Teachers also can archive the 21st century learning is to build the

Malaysian students to grab this language to the Cambridge level. Teachers **will** be more **cautious** about the language and educate English Language to the students appropriately.

This research study **conducted** in … with form Two students definitely gave a fruitful outcome. Teaching literature **especially** poems using Direct Method was enjoyable and students loved the new approach. Hereby this study **turned out** to be positive one among intermediate proficiency level students. Thus, this research study **should** be **taken into consideration** and carry out in each and every class to **improvise** every student's proficiency in English Language.. When there's a will, there's a way is the **perfect** proverb that fit this statement as teachers **should** take **initiative** to use Direct Method while teaching literature in their classroom.

Appendix B

AEFL 1

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AEFL2

Vedyanto. (2017). Evaluation of the ELT Textbook: 'English in Mind 1 (2nd Edition)'. *Asian EFL Journal Quarterly*, *19*(3), 91-121.

AEFL 3

Chen, I-C. (2017). Implementing writing portfolios in a college writing course: Perceptions of EFL college students. *Asian EFL Journal Quarterly*, *19*(4), 78-102.

AESP 4

Lim, S. and Low, H. (2017). English language anxiety in non-TESOL student teachers in Malaysia. *The Asian ESP Journal, 13*(1), 110-133.

AESP 5

Nguyen, T. (2017). Reporting Verbs in TESOL Master's Theses Written by Vietnamese Postgraduate Students. *The Asian ESP Journal*, *13*(1), 35-58.

AESP 6

Hernandez, H. P., Amarles, A. M., & Raymundo, C. Y. (2017). Blog-assisted feedback: Its affordances in improving College ESL students' Academic writing skills. *The Asian ESP Journal*, *13*(2), 100-143.

GEMA 7

Azmuddin, R. A., Mohd Nor, N. F, & Hamat, A. (2017). Metacognitive online reading and navigational strategies by science and technology university students. *GEMA Online® Journal of Language Studies*, *17*(3), 18-36.

TJ 8

Lee-Johnson, Y. L. (2017). "That Is Not Very American": A Microethnographic Discourse Analysis of a Chinese ESL Learner's Appropriation of Cultural Values at an Art Exhibition. *TESOL Journal*, *8*(3), 1-24.

TJ 9

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TJ 10

Zhang, W. (2017). Quality Matters: Content Literacy for English Language Learners. *TESOL Journal*, *8*(1), 166-189.

TQ 11

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TJ 12

Lin, Z. (2017). Teaching EFL Writing: An Approach Based on the Learners Context Model. *TESOL Journal*, *8*(1), 1-24.

TJ 13

Caplan, N. A., & Farling, M. (2017). A Dozen Heads Are Better Than One: Collaborative Writing in Genre-Based Pedagogy. *TESOL Journal*, *8*(3), 1-18.

TQ 14

Yoon, H., & Polio, C. (2017). The Linguistic Development of Students of English as a Second Language in Two Written Genres. *TESOL Quarterly*, *51*(2), 1-27.

TQ 15

Humphrey, S., & Macnaught, L. (2017). Functional Language Instruction and the Writing Growth of English Language Learners in the Middle Years. TESOL Quarterly, 51(3), 1-25.

TQ 16

Supasiraprapa, S., & De Costa, P. I. (2017). Metadiscourse and Identity Construction in Teaching Philosophy Statements: A Critical Case Study of Two MATESOL Students. *TESOL Quarterly*,*51*(4), 1-29.

Appendix C

Identified Stance Features in the 'Conclusion' section of 16 TESL-Related RAs

Hedges	***Hedges***
about	seemingly
apparent	seems to
appear	should
appeared	suggest
appears	suggested
argue	suggests
argued	uncertain
can	would
cannot	often
certain	in general,
could	indicate
feel	indicated
generally,	indicates
implied	likely
implies	may
ought	might
perhaps	nearly
possible	relatively
rather enabled	seemed to

Boosters	***Boosters***
able	known
actual	made
actually	maintain
apparent	mentioned
apparently	must
believe	observed
believed	particular
cannot	points
certain	presented
choose	produce
clear	produced
clearly	reached
conducted	really
demonstrate	reported
demonstrated	resulted
demonstrates	revealed
determined	seen
developed	serve
did not conduct	show
echoes	showed
establish	showing
evidence	shown
evidenced	shows
evident	stresses
exists	true
fills	truly
found	undeniable
given	used
identified	were able
illustrated	will
implemented	indeed
in particular	know

Attitude Markers	*Attitude Markers*
absently taken	available
acceptable	avoid direct contact
access	avoid subjective
accountability	avoidance
accuracy	avoiding
achieve	aware
acknowledge	awareness
acquire	awkward
active participation	barriers
actually	beat
acutely	became aware
acutely aware	becoming sensitized
adds new insight	beliefs
adopt	benefit
adversely influence	benefits
advocate	benefitted
agree	best
aim	best fit
aimed	better
allow	better readers
allows	better understand
also	blindly
altercation	blindly memorized
amicably	building
an act	building on
analyse	bureaucratization
analyzed	cannot be readily
another limitation	capable
appear	careful
applicable	careful anticipation
applied	carefully
apply	causing
approached	caution
appropriate	challenge
appropriated	challenges
appropriateness	chance
articulate	changing
artificially devised	clarify
as explained	clash
ascribe	collaboratively
assertively	collected
associated	combining
attempt	comfort
attempted	comparable
compared	desire
comparison	detail
compatible	detailed

complex	develop
comprehend	developed
compromising	did not really improve
concentrated	differences
concerning	different
concomitant	differentiate
conduced	differently
conducted	difficult
conducting	difficulty
confidence	direct involvement
confident	directly generalized
confidently	discursive
confidently recommend	discuss
configure	discussing
confirms	diverse
conform	drastically
conscientious	drawn
conscious	drawn on
considerable	effective
consideration	effectively
considered	effectiveness
consistency	effects
constructed	embedded
contested	employ
contextually driven	enable
continually	enabled
contributed	encouraged
contributing	engage
conveyed	engaged
convincing	engagement
create	enhance
create positive	enough
created	ensure
credible	enthusiastic uptake
critical	essential
crucial	establishing
cultural assumption	estimable
culturally -dependent	evaluate
deconstructed	evaluated
decreased markedly	evaluative potential
deeper	ever-rising
deliver	evidence
delve further	evidently
deserves	engagement
designing	enhance
enough	genre-rich
ensure	given
enthusiastic uptake	gives
essential	good

establishing
estimable
evaluate
evaluated
evaluative potential
ever-rising
evidence
evidently
examine closely
examined
exits
expand
expectations
expected
expected feedback
experience
experienced
experiences
explain
explicit
explicitly
exploration
explore
explore better ways
explored
expose
exposed
expressing
extrapolated
facilitate
facilitating
familiar
familiarity
favorably
feel socially accepted
focus
focus on
focused
focusing
foregoing
formulated
foster
fruitfully
fulfilled
fully
fully acquire
fully develop autonomy
functional
future

gradually develop
great
great value
greater detail
greater impact
growing stronger
grown ever stronger
growth
guide
help
helped
helpful
helping
helps
hidden and unmarked
high-stakes
highlighted
highly valued
hope
hoped
identifying
ignore
illustrating
impact
impart
implement
implement autonomy
implementation
implemented
implementing
implications
implicit input
importance
important
importantly
imposing
improve
improvement
improvements
improving
in lieu
inappropriate
incidental
increase
increased
increasingly held accountable
limitations
limited
linguistically and socioeconomically

gave	linking
generalizability	little
generated	logical
genre-appropriate	look for
independent	made
indicating	made
inexperienced	made longer
influenced	maintain
influences	maintaining
inform	make
informed	make visible
inherently	make connections
initially help increase	manage appropriately
insecurity	management
insights	may be informed
inspire	measures
instruct	merely
instruction	mindful
instructional	minimal
integrate	misinterpretation
intended	misunderstanding
internalize	monitoring
internalized	motivation
intricate	move forward
introduced	naturalistic settings
investigated	necessary
investigation	necessity
investigations	need
just	need explicit instruction
lack	need to
lacks	needed
lead	needed to
learned to monitor	needs
learned to overcome	needs to
legitimate identity	negative attitudes
own meanings	negotiate socially
own ways	negotiated
paraphrase	newly
particularly	nexus
perceived	no predicting
perception	not enough
performed	not without limitations
performed poorly	note
Performed solely	noted
persuasive	novice
persuasively	numerous
pertaining	occurs
placed	offer

plausible	offer more insight
positive	one limitation
positive affordances	ongoing
positively affects	only
possible	open question
potential	opinion
potentially	opportunity
powerful	organise
practical	organize
practices	over shadow
predominantly	overcoming
preference	overloaded
prepare	raised awareness
preparing	rapid
present	readily
prior	realized
proactively	receive
produce	recognize
proficient	recommend
progress	recommendations
promote	reflect
promote autonomy	reflected
promoting	regularly
promoting autonomy	relevant
proper	relied on
proper autonomy	relying
provide	remains
provide feedback	remains concerned
provided	replication
provides	represent
providing	representative
providing corrective feedback	represented
purposefully	reproduced
quality	repurposed
raised	resembling
seriously controlled	respects
several pedagogical implications	respond
shared	restricted
shifted	resulting
shifting	rhetorical
should be able	rich
should be considered	richness
should be encouraged	robust
should be positively purposive	same
should consider	seen
significant	sensitive
similar	sensitivity
similar or different	similarly
underestimated	simply

understand	situational
understandably	small
understandably anxious	small portion
understanding	solely
understood	solely predicted
undertaken	sophisticated
unfamiliarity	specific
unintended impact	specific to general
universal	straightforwardly
unpacking	strategic approach
unsurprising	strategically
use	strategies
used	struggled
useful	struggling
utilized	subsequently
utilizing	Subtle use
variance	successfully
varies	sufficient
varying	sufficiently
vital	suggestions
vitally important	suitable
void	support
want	supported
weaknesses	supporting
well versed	supports
well-managed	sustaining
wider range	taught
wish	teach
worthy	teaching
yet	these limitations
unanimous	this limitation
unawareness	thoughts
uncomfortable	to control
undeniable	to experience
trustworthiness	track
try to promote	trained
typical	transfer
	unable

Self-Mentions
I
our
the researcher
we

Identified Stance Features in the ‘Conclusion’ section of 16 Malaysian TESL undergraduates’ FYPs

Hedges	*Hedges*
about	ought
almost	perhaps
ambiguously	proposed
any	should
assumes	sometimes
can	suggested
could	suggests
doubt	supposed
generally	tend to
highlighted	tendency
implies	unclear
indicate	usually
indicated	would
intend to	likely
intended to	may
	might

Boosters	*Boosters*
almost	determined
always	discover
arisen	discovered
ascertain	especially
believed	evidence
believes	exact
capability	fact
choose	find
chosen	find out
clearly	found
conceived	guarantee
confirmed	in particular
considered	interest
contains	know
decides	known

deed	must
definitely	never
demonstrated	obtained
demonstrates	obvious
determine	obviously
stated	particular
surely	particularly
used	perception
utilized	pertaining
will	precise
won't	preferences
prove	probably
proved	produced
proven	provable
really	showed
specific	showing
specifically	shown

Attitude Markers	***Attitude Markers***
a lot of positive impacts	analysis
a more dynamic and lively way	analyzing
ability	answered
able	anxious
absence	any incongruity
accurate	any kind of effect
achieve	application
achieved	applied
acquisition	apply
acquisitively divided	appropriate
active	appropriately
adapt	as compared
adapting	as mentioned
added	as well
addition	asking
address	at least

adequacy	attain
adequate	attempt
adequately	attention
admitted	attitude
advantage	attract
affect	attracts attention
affective	average
agree	awareness
agreeable	basic
agreed	Be access
alerted	become a practice
alive	being learned
allow	being studied
allowed	benefit
allowing	benefits
allowing	benefitted
allows	best
also	better
analyse	betterment
analysed	biggest
brings	bored
build	bring
by creating	consider
by focusing	considered
cannot	considered
capable	constraint
carry out	consult
cautious	consultation
challenging	consumes
change	contrast
check	contrasted
choose	contribute
clearly	contributes
collect	correct
collected	correcting
comfortable	corrective feedback

communicate	correctly
compared	counts
complete	covered
complete understanding	create
completion	created
comprehend	creates
comprised	creative
compulsory	critical thinking
computed	critically analyse
concentrate	crucial
concentrates	culmination
concerned	curb
concerns	dealing
concluded	decides
concludes	deduced
conclusions	defined
concretely	deliberate selection
conduct	delightful
conducted	demotivated
conducting	describe
confidential	designed
connected	desired
develop	detailed
developing	detract
development	expose
devoted	exposed
different	extract
differentiating	eye opener
difficult	failed
difficulties	familiar
directed	fascinating
directly	fast
discoveries	feasibility
discussed	feel
disliked	few restrictions
dislikes	figure out

distinguish	final inspection
divided	fit
doing	focus
done	focused
dull and exhausting	freely
eager	fruitful
easier	fulfil
easily	fun
easy	fundamental critical
educate	future
educating	gain a lot of
effective	gained
effective interaction	gains
effectively	gather
effectiveness	gathered
effects	gathering
efficiently	get
effort	Get a deeper understanding
efforts	give some reasonable
emphasize	given
enable	gives
enables	giving instruction
encourage	good
encouragement	grab
end	gradual improvements
endeavored	grasp
enhance	in reviewing
enhanced	include
enhancement	incorporated
enhancing	increase
enjoyable	inevitably
enough	influence
entertaining	influential
entire	informed
entitled	initiative
equivalent	insight

errors	instructed
essential	integral part
evaluate	intended
eventually	interest
everything	interested
everywhere	interesting
evidence	interpretation
evidences	intervention
examined	intriguing
examines	introduce
examining	introduced
excel	introducing
excellently	investigate
exceptionally	investigates
excited	involve
exclude	involved
existing	isolation
existing	joints
expand	jump into blind
experienced	just
explained	keep
explaining	keep in mind
exploited	laid out
explore	large
explored	last minute preparation
explores	lead
grasping early exposure	leading
grasps	leads to
grateful	learn
great deal	learn a lot
greater	learnt
greatest	less demanding
help	less stress mood
helped	like
helped increase	likes
helping	limitation

helps
high
hinder
hold
huge amount
idea
ideas
identify
illustrating
imagine
immutable
impact
impart
implement
implementation
implemented
implementing
important
improve
improved
improvement
improvements
improves
improving
improving their awareness
improvise
in excess
In future
mindful
minor
mis-interpreted
missed
more benefits
more creative
more determining
more interest

limitations
longer
looked in depth
love
loved
made
main concern
majority
make
make sure
makes
making
manage
management
managing
margin of improvement
mastering
mean
meaningful
meaningfully higher
measurable contrast
measurable positive effect
measurably critical contrast
measure
memorize
mention
mentioned
merely
met
mind set
produced
productive
profitable
progress
promising
promoting

more productive
more prominently
more relaxed
most common
most convenient
most importantly
motivate
motivated
motivates them extrinsically
motivation
motivation increase
mutual opinion
necessary
necessary for life
need
need to
needs
needs to
never
new
new discovery
new favorable choices
new favourable choice
new perspective
no end
norm
not controlled
offer
only
open up
opinion
opinions
opportunity
other
outcome
overcome

proper
propriety
provide
provided
provides
providing
pull in
pure memorization
purpose
put forth
putting
quality
raise
rarely
reach
reaching
real
real life
realize
recognize
recommend
recommendation
recommendations
recommended
recommends
recreated
reflected
regarding
regularly
relate
relatively
relaxed
relevant
relied
reluctant
remember

participate	repeat
participated	repetitively
participating full-heartedly	replicate
particularly	require
pay great attention	required
pay special attention	requires
perceptions	researched
perfect	response
performance	responsibility
perspective	responsible
perspectives	returning
planning	reviewed
play a big role	revised
plays an important role	revising
plus and minus	rewrite
point of view	rich environment
popular	right
positive	rigid
positive attitudes	said
positive effect	same
positive impact	satisfying
positive outcomes	saying
power of cognition	security
practice	see
practiced	seek the perfection
prefer	seen
prepare	sense of enjoyment
preparing	serve
presented	several complications
primary determinant	several issues
privilege	several limitations and recommendations
produce	several strategies
share	several things
significance	several topics
significant	taken into account
significant increase	taken into consideration

similar	takes place
similarities	target
simple tally	targeted
simpler	taught
simply	teach
smart	tenderfoots
socially desirable	thrilled
some benefit	time constraint
some considerations	to obtain more
some suggestions given	to recapitulate
some valuable insights	total failure
some weaknesses	traditional
sophisticated statistical analysis	train
spare	tried
starts	trouble
stating	trouble spots
statistical difference	trusts
stipulated	try
strongly	turn out well
study	turned out
substance	typical
success	ultimate goal
successful	understand
sufficient	understanding
sufficient initiative	unfortunately
suggestible	updating
suit	upgrading
suitable	urgent
summarized	use
sums up	used
superior	useful
supplementary	uses
support	utilizes
supports	utilizing
various	utterly related
viable	valiant

vibrant and artistic	well designed
view	went well
viewing	whole
vital	widen up
was being studied	wider coverage
weak	willing
weighty	work
well	work on
write	written

Self-Mentions
me
her
herself
I
my
researcher
the researcher
the researchers
us
we

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THE ASIAN ESP JOURNAL

A Comparative Move Analysis on the Qualitative and Quantitative Findings and Discussion Sections Written by EFL Undergraduate Students

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Abstract

This study examines the rhetorical moves of the NNES undergraduate students' iterative findings and discussion (F&D) sections across research designs, which still receives scant attention. The corpus consists of 62 research article (RA) F&D sections (Qualitative=32, Quantitative=30) obtained from a leading public university in English language education in Indonesia. A top-down approach was carried out to explore the rhetorical features, i.e., occurrences, salience, and move-step patterns. A bottom-up approach delineated the linguistic realizations of the moves. The findings demonstrated that the definite commonality between the two groups was the frequent occurrence and the salience status of reporting the results and commenting on results moves. However, the negative commonalities underscored the absence of in-depth argumentation, various linguistic realizations except in summarizing the findings, and non-standard configurations of rhetorical moves, indicating the students' novice rhetorical repertoire. Meanwhile, the discrepancies influenced by the research design were in providing background information and reporting the results along with their rhetorical configurations. This study discloses the impact of research design on the rhetorical conventions of students' F&D sections. Hence, this paper elucidates a corpus-driven genre pedagogy to mediate the enhancement of students' rhetorical repertoire.

Keywords: Rhetorical organization, iterative findings and discussion section, NNES undergraduate students, move analysis, EAP teaching approach

Introduction

This study is raised by the urgency for higher education students to possess eligible English academic writing, especially for research publication purposes, h to increase their active participation in disseminating knowledge to wider societies in this 'publish-or-perish' era (Huang, 2014). Mainly, the students' abilities to present and discuss the research findings can ascertain the publication of their paper in international journals (Chang & Kuo, 2011; Kanoksilapatham, 2005).

The need to disseminate their scientific works through international publications is influenced by the requirement of international publication in some universities to obtain their degrees (L. Flowerdew, 2016). It is presumably with this spirit that the Ministry of Research and Higher Education (hereafter MRHE) of Indonesia mandates all public and private higher education institutions to require not only postgraduate but also undergraduate students to publish a research article in a journal (local, national, or international) since 2012. Hence, genre-based investigations on the writing of research articles among higher education students have been receiving ample attention (Hyland, 2004; Kuteeva & Mauranen, 2014) in order to better inform the practice of teaching English for academic purposes (hereafter TEAP), particularly in non-English-speaking countries.

Previous research, however, has reported the students' inadequate academic writing skill in converting the data into a findings and discussion section (hereafter F&D) section (J. Flowerdew, 1999; Mišak, Marušić, & Marušić, 2006). The difficulty in constructing the F&D section also pertains to diverse "conventions and language standards of the journals" (Joseph & Lim, 2018, p. 198). Li's (2017) self-narrative also pinpoints her struggle as a native Chinese student in following the rhetorical conventions and language use of western writers during their college academic writing period. Based on Li's (2017) study, the word-count limit might enhance the challenging task for the NNES students to make an effective organization in presenting the findings while making claims from the research.

On the basis of the above-mentioned issues, the present study seeks to analyze the rhetorical organization of RA F&D sections written by NNES Indonesian undergraduate students. A move analysis method was employed involving a two-stage process: the top-down approach and the bottom-up approach. The findings comprise comparative results of (1) occurrences of the moves and steps, (2) salience of the moves and steps, (3) rhetorical structure including the rhetorical configuration and the starting-ending move, and (4) linguistic realizations of the moves in the qualitative and quantitative F&D sections.

Review of Literature

The Notion of Research Article Findings and Discussion Section

Scholars have argued that the heart of the whole paper lies in the findings and discussion section since it represents the coherent combination of introduction, literature review, and methodology sections. The content generally consists of both the presentation of the research findings and the in-depth argumentation of the authors (Amnuai, 2017; Basturkmen, 2012; Lim, 2010). A rhetorically coherent presentation of information in the F&D section typically incorporates two elements: clarity from the presentation of the research findings and criticality from the discussion of the findings to underscore the novelty of the research (Bitchener, 2010; Lubis, 2019).

Understanding the commonly shared rhetorical conventions of the RA F&D section starts with the fundamental notion of the rhetorical organization itself. By definition, the rhetorical organization comprises communicative functions, i.e., moves (Arsyad, 2013a; Swales, 1990). These functions are manifested based on the purpose of the writing and the underlying context governing the presentation structure. Each move can have the constituting sub-communicative functions, which are commonly called as steps.

The exponentially increasing number of move analysis has reported the description of various typologies across disciplines and even journals. All in all, referring to Stoller and Robinson (2013), there are three commonly used types of an RA F&D section, i.e., Blocked, Iterative, and Integrated. Blocked typology divides findings and discussion into two headings in which the findings section starts with the detailed description and explanation of the research outcomes, followed by the discussion. In contrast, iterative typology combines findings and discussion into one heading. The information structure of this type requires the integration of the clarity and criticality elements. The last typology, i.e., integrated, is somewhat randomized in terms of sequencing the findings and discussion. It results in the embedded conclusion section, as well.

Rhetorical Organization of Findings and Discussion Section of a Research Article

The typology of findings and discussion section can influence its rhetorical organization. This study specifically focused on the iterative typology in order to capture the students' rhetorical repertoire in presenting the research outcomes and associating them with previous literature or research. Some international journals have also applied this typology across disciplines. Conclusively, three rhetorical elements become the criteria of analysis (Swales, 1990): (1) occurrences, (2) salience, and (3) patterns. The first criterion includes the longitudinal academic investigation on what moves occur in various corpora across disciplines. Previous experts (see Table 1) have proposed distinguished models of rhetorical moves of F&D sections.

Table 1. ASummary of Rhetorical Structures of Findings and Discussion Sections

Author	Structure
Swales (1990)	M1 Background information^{ob}; M2 Statement of results^{ob}; M3 Unexpected outcome; M4 Reference to previous research^{ob}; M5 Explanation; M6 Exemplification; M7 Deduction and hypothesis testing; M8 Recommendation
Dudley-Evans (1994)	M1 Information; M2 Statement of result^{ob}; M3 Finding; M4 Unexpected outcome; M5 Reference to previous research^{ob}; M6 Explanation; M7 Claim; M8 Limitation; M9 Recommendation
Holmes (1997)	M1 Background information^{op}; M2 Statement of result^{ob}; M3 (Un)expected outcome^{op}; M4 Reference to previous research^{op}; M5 Explanation of unsatisfactory result^{op}; M6 Generalization; M7 Recommendation^{op}; M8 Outlining parallel or subsequent developments
Peacock (2002)	M1 Information^{op}; M2 Statement of result^{op}; M3 Finding^{con}; M4 Unexpected outcome^{op}; M5 Reference to previous research^{con}; M6 Explanation^{op}; M7 Claim^{con}; M8 Limitation^{op}; M9 Recommendation^{op}
Yang and Allison (2003)	M1 Background information; M2 Reporting results^{ob}; M3 Summarizing results^{ob}; M4 Summarizing the study; M5 Commenting on results^{ob}; M6 Evaluating the study; M7 Deductions from the study

Some contemporary studies have examined the rhetorical organization of RA F&D sections written by EFL students. In a corpus of 40 iterative dissertation F&D sections in hard and soft sciences, Dastjerdi, Tan, and Abdullah (2017) confirmed that reporting and commenting on results frequently appeared in both sciences. Nodoushan and Khakbaz (2011) analyzed 46 master thesis discussions with blocked typology in the field of applied linguistics using a contrastive approach between Iranian and non-Iranian students. Through Mann-Whitney U tests and one-sample t-tests, they found that the three most frequently manifested moves were reporting results, commenting on results, and deducing from the results. Meanwhile, the two least frequently manifested moves were summarizing the study and evaluating the study. In the

Indonesian context, Wasito, Arsyad, and Harahap (2017) examined the occurrence of rhetorical moves in 20 qualitative-method master thesis discussions in the same discipline. They also demonstrated similar findings.

The second criterion pertains to the salience of each move in the published RAs from hard and soft sciences. The hard sciences include Physics, Chemistry, and Forestry, while Education, Applied Linguistics, Social Sciences, and Humanities are among the identified soft-science disciplines. Inter-disciplinary variations existed in the study of Dastjerdi et al. (2017) in which referring to previous research and making overt claims were obligatory in the hard-science abstracts. Meanwhile, invalidating results move was considered optional. The optional status was also attached in providing background information, making suggestions for future research, and communicating limitations moves in both disciplines. Joseph and Lim (2018) were concerned with the introduction move, i.e., providing background information within 60 RA discussion section with blocked typology from Q1 journals in the field of Forestry. Informed by Swales' (1990, 2004) framework, they disclosed a similar proposition to the optional status of introduction move. However, presenting related information about the context and the significance of the findings with specific reference to previous studies becomes the necessary step in conveying such a move. One important reason for the conformities across disciplines is that they belong to the same genre; that is academic. Meanwhile, the non-conformities across hard and soft sciences may be caused by the writers' repertoire shaped by self-experiences on reading and understanding the salience of each rhetorical move.

The linguistic background of the writers might also affect the differences in rhetorical moves manifestations. A contrastive analysis of RA blocked discussion sections written by Malay and English expert writers (17 RAs each) conducted by Kim, Evans, Odacıoğlu, and Köktürk (2016) revealed that commenting on the findings move was obligatory. The discrepancy was on the less preference of providing clarification of the findings within the English RAs than the Malay RAs.

Furthermore, previous research has also looked at the third criterion regarding the rhetorical structures or move patterns in the F&D section. Arsyad (2013b) set out to examine 47 RAs discussion sections (35 iterative, 12 blocked) from university-based journals in the field of social sciences and humanities. The analysis demonstrated that the differing typologies did not lead to a discrepancy in terms of organizing the rhetorical moves in which the sequence generally started from background information, statement of results, explanation of the findings, and recommendation. One notable difference occurred within the same field instead of across fields. He figured out an example of an RA applying only two moves compared to another RA with 20 moves in the discussion section. The complexity of the research influenced by the selected design might contribute to such internal irregularities in manifesting the rhetorical structure.

The influence of research design on the manifestation of rhetorical moves in the RA F&D sections has been examined by Lim (2010) through comparing 15 Applied Linguistics and 15 Education RAs from top-tier journals in which each group comprises an equal ratio of RAs employing qualitative, quantitative, and mixed-method designs. He specifically focused on the comments move. The findings underscored that the research designs of the RAs did not necessarily determine the incorporation or exclusion of the comments move. Instead, the tendency to manifest the comments move might be triggered by the demand of the international communities in the field of research or the target audiences.

Given the circumstances, an empirical investigation on the way the research design causes some various manifestations of rhetorical moves of the F&D sections written by EFL undergraduate students is worth conducting, albeit still understudied. Previous research extensively examines the writing of postgraduate students and expert writers. It is corroborated by Guo (2014) that among the EAP researchers in Asian milieu, postgraduate academic writing is more popular to be scrutinized. The less obligation for undergraduate students to publish their research papers in a journal compared to the postgraduate students becomes the underlying reason. Nevertheless, the encouragement to publish scientific works in scientific journals has been enacted by the government of Indonesia since 2012. Consequently, the existing variations of rhetorical conventions of the findings and discussion sections written by the students seem not readily available for the literacy brokers or the research supervisors whose orientation is to the international publication. This circumstance can lead to a higher rate of rejection from the target journals due to inadequate manuscript preparation.

Therefore, the present study seeks to examine the manifestation of rhetorical moves in the NNES undergraduate students' RA iterative findings and discussion sections across research designs. The following research questions drive this study.

RQ1. How does research design influence the manifestation of rhetorical moves in the RA iterative F&D sections of NNES undergraduate students?

RQ2. How does research design affect the rhetorical moves configuration?

Methodology

The Data Collection Procedure

This study is part of a more extensive study. The data collection procedure started with the correspondence with the English education department of a state university in Bandung, West Java, Indonesia. The staff provided 138 RAs from the campus anthology. This university was selected because the department has been recognized as one of the leading programs in English education in Indonesia. The curriculum regards English for academic purposes as compulsory before they can write a final research paper (hereafter *skripsi*) so that they must have gained enough knowledge and practice about writing a research paper.

Table 2. Description of the Corpus

Year	Number of RAs	Types of research method		Range of the number of paragraphs		Range of the number of words	
		QL	QT	QL	QT	QL	QT
2013	19	9	10	5-13	4-15	242-1003	326-857
2014	10	7	3	7-33	7-17	539-2211	505-1262
2015	8	4	4	4-15	9-21	256-1682	713-1416
2016	12	9	3	4-30	4-23	256-1681	272-1935
2017	13	3	10	7-8	5-19	516-726	356-1541
Total	**62**	**32**	**30**				

Notes. QL=Qualitative; QT=Quantitative

The RAs published from 2013 to 2017 were first sorted out by highlighting the heading of the findings and discussion sections. Twenty-five (25) RAs were excluded since they apply either blocked or integrated typology. Moreover, to reach an equal number of RAs with qualitative, quantitative, and mixed-method designs in each year was difficult because the majority of the RAs were qualitative, while only seven (7) RAs employed a mixed-method design. Hence, the corpus size was based on the minimum requirement: 20 or 30 RAs (Corder & Foreman, 2009) to reach a good data confidence level. Finally, sixty-two (62) RAs iterative F&D sections were selected to be the corpus (qualitative=32, quantitative=30). In total, the corpus consists of 52.842 words in total, with the average number of words per article is 467 words. The corpus also encompasses various topics in the field of English education, including linguistics, materials development, language learner research, and teaching methodology.

Data Analysis Procedure

This study is designed as a corpus-based move analysis (Baker, 2010; Hyland, 2009), which involved a top-down approach to analyzing the rhetorical organization and bottom-up approach to exploring the linguistic realizations of the rhetorical moves. The procedure suggested by Kanoksilapatham (2007, p. 34) was replicated. All F&D sections were read carefully to understand the topic and content. Then, the definition and example of each move and step informed by two models, i.e., Dudley-Evans (1994) and Ruiying and Allison (2003) were formulated. Then, a pilot-coding was conducted to test and fine-tune the definitions and boundaries. Table 3 describes the details of the coding protocol. The analysis resulted in a synthesized guideline from the two models representing the rhetorical organization. It means that ideally, each sub-section of the 'Findings and Discussion' section manifests four moves.

Table 3. A Synthesized Guideline of Rhetorical Moves Analysis

Move 1	Providing background information
Step 1	Stating the context (background theory and/or research aims)
Step 2	Preparing the sequence of the presentation
Step 3	Restating data collection and analysis procedure
Move 2	Reporting results
Step 1	Statement of result (either numerical value or reference to a graph or table)
Step 2	Finding (without a reference to a graph or table)
Move 3	Summarizing results
Move 4	Commenting on results
Step 1	Interpreting results
Step 2	Comparing results with literature
Step 3	Accounting for results

Step 4	Evaluating results (significance, limitation, implication, and/or recommendation)

The process continued to the conversion of the original texts into the notepad version because this study utilized AntMover 1.10 as the analysis tool. The tool automatically segments the text into sentences and provides an alternative code if the software wrongly labels the sentence. The sentence was the unit of analysis. However, considering the issue of the accuracy of the software, the human-coding process was also performed directly in the software three times. Finally, the linguistic realizations focused on the tense and sentence voice were examined.

Data Trustworthiness

Regarding the ethical issues, all attributes of the RAs quoted in this paper were pseudonyms (e,g. RA1). Furthermore, the coder triangulation method was done by conducting inter- and intra-coder reliability to obtain good data trustworthiness. Cohen's kappa (k) value became the basis of the agreement level (Biber, Connor, & Upton, 2007; Kanoksilapatham, 2005; Moreno & Swales, 2018). The process began by administering 25% of the corpus to one lecturer whose expertise is in discourse analysis (Crookes, 1986; Kanoksilapatham, 2005). The inter-coder independently labeled the sentences. Discussion with the rater was made three times about the identified disagreements and ambiguity. One month after the raw analysis results, an intra-coder reliability test was conducted by re-labeling another 25% of the corpus to ensure the agreement index between the first analysis results and the second ones. To acknowledge, the average Kappa value for the inter- and intra-coder reliability was 0.92 and 0.98, respectively, indicating an excellent agreement level.

Findings and Discussion

This section delineates the results of comparative move analysis between the qualitative and quantitative RA findings and discussion sections with iterative typology written by NNES undergraduate students. The first part unpacks the manifestation of the rhetorical moves along with their constituent steps across research designs to answer the first research question. The second part addresses the second research question about the manifestation of rhetorical organization in the corpus across research designs.

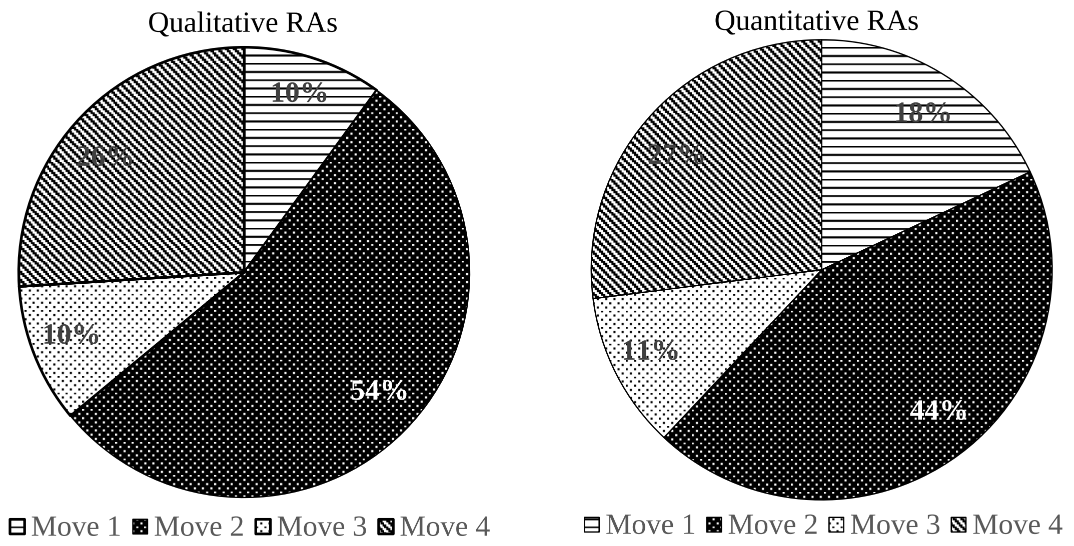

Figure 1: Moves Occurrences in Qualitative and Quantitative F&D Sections

The Manifestation of the Rhetorical Moves

This section explains about the manifestation of the moves in the qualitative and quantitative articles. The explanation begins with the description of the move-step salience and communicative functions of the moves from the identified constituting steps. In determining the salience of the moves and steps, Kanoksilapatham's (2005) classification was used in which the moves and steps were regarded as obligatory (if manifested in 100% of the corpus), conventional (66% to 99%), or optional (less than 66%). Table 4 provides the details. It continues with the provision of excerpts from qualitative and quantitative groups in terms of similar and different linguistic realizations. All excerpts were quoted verbatim. Fig 1 depicts the overall results of move occurrences. were 2454 moves identified in the corpus in which the qualitative group demonstrated a higher number than the quantitative ones (1270 and 1184). Commonalities and discrepancies occurred. The second rank is Move 4 (commenting on results) followed by Move 1 (providing background information) and Move 3 (summarizing results).

Table 4. Overall Results of Move-Step Salience

Qualitative RAs						Quantitative Ras					
Move	*f* (RAs)	%	Step	*f* (RAs)	%	Move	*f* (RAs)	%	Step	*f* (RAs)	%
1	22	69%	1	9	28%	1	26	87%	1	23	77%

			2	16	50%				2	9	30%
			3	14	44%				3	22	73%
2	31	97%	1	22	69%	2	30	100%	1	30	100%
			2	30	94%				2	24	80%
3	31	97%				3	28	93%			
4	31	97%	1	25	78%	4	28	93%	1	27	90%
			2	21	66%				2	20	67%
			3	18	56%				3	15	50%
			4	4	13%				4	7	23%

Move 1 Providing Background Information

The discrepancies of manifestation of Move 1 caused by research design were identified in the students' corpus. First, there was a gap as much 8% between both groups regarding the occurrence of Move 1 (10%:18%), as depicted in Figure 1. Second, Steps 1 and 3 of Move 1 were conventional in the quantitative group. Meanwhile, detailed clarification on the research context tends to appear in the quantitative research articles, which consists of the re-statement of hypotheses, steps, and instruments in conducting the statistical analysis. The commonalities also appeared between both groups in which the status of Move 1 was not obligatory. The findings reinforce Lim's (2010) study, which also found that research design does not cause the different manifestation of Move 1.

Theoretical underpinnings and methodology-driven sub-communicative functions were evident, although not all RAs in qualitative and quantitative groups manifested the rhetorical moves. Both groups stated the context of the findings through the restatement of the research purpose or question(s). They also clarified the context of the research instrument(s).

> This section will discuss various types and strategies of feedback applied by the teacher to the students' descriptive texts observed in this research. (RA4, QL, Step 2)

> This section contains the analysis result and discussion of the baseline-1, treatment, and baseline-2 from each participant. (RA49, QT, Step 2)

The methodology-driven communicative functions were exemplified in some qualitative RAs in the forms of the background information about the research settings, the textual data, or the theoretical reference for the analysis. Some of the quantitative RAs mentioned the hypothesis, formula, and its requirement for achieving a significant value.

The variation of linguistic realizations instead depends on the writers' styles themselves. Simple present and simple past tenses were typically used to realize Step 1 with active copular verb or passive voice. Such a variation of tense was also identified in Step 3. The consistency of employing the present tense was demonstrated in Step 2 (Joseph & Lim, 2018), although there was a particular case where the author preferred simple future tense.

Move 2 Reporting Results

Both groups manifested Move 2 (reporting results) far more frequently compared to the other three moves. Previous studies also noted the high frequency of Move 2 (Dastjerdi et al., 2017; Nodoushan & Khakbaz, 2011). However, only in the quantitative group, Move 2 was obligatory. Discrepancies between the groups also existed in which in quantitative group statement of results was obligatory.

This move was manifested in two steps, albeit not in all RAs, i.e., statement of results and findings. The statement of results occurred in both groups when the students made a specific reference to a table or figure containing numerical evidence (i.e., descriptive statistical results in qualitative RAs). Additionally, the quantitative group also cleared out the inferential statistical analysis results to inform the final statement of the hypothesis testing. The low occurrence of Step 2 in Move 2 is because the students replaced it with a sub-heading for each finding, projecting a direct signal about what is going to be presented. The statement of finding was about the non-numerical description of the findings (i.e., statement of the questionnaire items in quantitative RAs). The qualitative group also explained the findings from observation and interviews.

> <u>The following tables show</u> the result of five observations on the teacher's techniques in presenting the meaning and form of vocabulary. (RA2, QL, Step 1)

The last, contextualization creates a lively atmosphere in the process of teaching learning. (RA42, QT, Step 2)

The realization of both steps also varied. Although simple past tense dominated as in Dujsik (2013), simple present tense also appeared in some RAs within both groups, particularly in manifesting Step 1. The use of simple present tense in presenting the findings is not considered incorrect because the students employ it to refer to a table or figure, which is typically realized in the simple present form with some verbs like *shows* and *depicts*. In Step 2, the students preferred to employ terms related to the research participants or the findings to begin the sentence. This finding contrasts with Dujsik's (2013) finding that the words *find*, *indicate*, and *confirm* appeared, which might be caused by the use of micro-research keywords such as *findings*. It signifies the students' tendency to provide a direct explanation without any preceding excerpts or examples for the readers to digest (e.g., the findings showed that the corrective feedback did not occur vs. the corrective feedback did not occur….).

The findings suggest that research design does not result in differing linguistic realizations of this move (in either numerical or non-numerical form) between the two groups within the manifestation of Move 2 along with its steps. It has something to do with the writers' cognition about the standard and shared linguistic realizations of this move.

Move 3 Summarizing Results

A shared communicative function was apparent since the students attempted to express the final gist of the whole explanation of a particular finding, as in the following excerpts.

It can be seen that the teacher had several different reasons in employing techniques in presenting vocabulary. (RA2, QL)

Both stated the general and conclusive point of the depicted results. In the qualitative group, the manifestation was in the forms of concluding statements of the students' verbal responses from interviews or observation or restatements of the main points being discussed before. For example, the research article no. 2 employed a descriptive qualitative design with a questionnaire as the instrument. The sentence covers up the previously discussed points about the teachers' motives to employ specific techniques in teaching vocabulary. Meanwhile, in the quantitative group, the manifestation was in the form of a back-referenced conclusion of the hypothesis testing.

From the data above, <u>it can be concluded that dictogloss storytelling is effective</u> to improve students' writing ability. (RA55, QT)

Simple present modal with a passive voice followed by that- clause was preferred to realize this move. Some of the commonly used verbs include *shown*, *seen*, *found*, and *concluded*. Likewise, Wasito et al. (2017) discovered direct conclusive verbs like *to conclude,* and *in short*. In terms of the subjects, the third-person inanimate pronoun *it* and the existential *there* as the subjects were preferred. Another form included macro-research subjects like *the present study*.

It is generally clear that the manifestation of Move 3 exemplifies a more rigid standard. In other words, the research design does not cause differences in realizing this move because the students' RAs exhibited similar linguistic realizations as well as communicative functions.

Move 4 Commenting on Results

The research design also did not cause differences in the salience of Move 4. This move was conventional in the qualitative and quantitative RAs. The conventional status of Move 4 contrasts to Arsyad's (2013b) study showing the obligatory status among the social science RAs. Similar evidence was documented by Dastjerdi et al. (2017) and Nodoushan and Khakbaz (2011). They found the move to be obligatory. It is justified by Wasito et al. (2017) with the same corpus, albeit from a different country; that is Indonesia. The reason lies in the higher level of rhetorical competence of the journal writers as well as postgraduate students in the previous studies than the undergraduate students in this study.

As another crucial element of a scientific research article, the manifestation of this move can include at least two constituent sub-communicative functions or more with a maximum of four steps. All texts evinced a similar way to manifest Step 1 by providing self-interpretation on a particular statement of finding or conclusion.

Meanwhile, the low occurrence of Step 3 and 4 in Move 4 might be caused by the students' cognition level from the experiences and exposure obtained from the academic writing course. The discrepancy between the qualitative and quantitative groups lies on stating the interpretations of the results in which the qualitative RAs referred their propositions to certain behaviors or opinions of the participants, while the quantitative RAs referred to the inferential statistical analysis like the normality distribution of pre- and post-test scores as depicted in the examples below.

> This indicates the teacher did not explain the topic anymore, but rather to check students' comprehension towards the topic (RA18, QL, Step 1).

> It is directly stated that the means of the experimental and the control group are different. (RA44, QT, Step 1)

Variation was not manifested as well in conveying Step 2 *comparing results with literature*. They used this step as a reinforcement from previous studies which discovered similar findings to their research findings. There was no identified effort to contrast their findings with previous research, as in Dujsik's (2013) study. It indicates less initiation from them to compare and contrast their results with the previous studies. On the other hand, the corpus of Master students in Warsito et al.'s (2017) study exemplified the obligatory status of Step 2 of Move 4. The findings imply that the undergraduate NNES students project the lower-level elaboration of findings and discussion considering the higher number of occurrences of the steps in Move 2 and the first two steps in Move 4, i.e., interpreting results and comparing results with the literature.

> Those stories are suitable with what Marcus (2006), Kilduff, Hamer, and McCannon, (2010) stated. They argued that dealing with the barriers of language and culture, literature for teaching literature in EFL (English as Foreign Language) settings suggests the use of 'friendly' materials. (RA21, QL, Step 2)

> This finding is in line with Aronson (2000) who stated that the Jigsaw technique facilitates students' interaction in the class enabling the students to value each other as contributors. (RA44, QT, Step 2)

On the other hand, research design seems influential in manifesting Step 3, *accounting for results*. Multiple truths consisting of positive and negative findings triggered the qualitative group to explain disagreements. The quantitative group performed this move to provide information about the reasons for the effectiveness of a teaching method or technique. Those reasons were generated either from the literature or personal argumentation from the findings. The argumentation was in the form of further explanation about the findings.

> The dominance of teacher talk proportion in each meeting happened since the teacher mainly explained grammatical rules and gave instructions on writing tasks. (RA7, QL, Step 3)

> Their attention also reflected the students' degree of seriousness. Almost all the students paid attention to the teacher's explanation and instruction. They were actively involved in the learning process, making comments or asking questions about the instruction and the given tasks. (RA44, QT, Step 3)

Conformity was recorded in Step 4 *evaluating results*. Among the four derivative points, i.e., significance, limitation, implication, and recommendation, the students had a preference to acknowledge the pedagogical implication or recommendation only. This might be caused by the common practice in writing an iterative F&D section, placing the limitation and significance of the study into the conclusion section.

> Hence, the learners need the ability to explain those things in English. (RA12, QL, Step 4)

> To solve those problems, it is recommended for the teacher to select the story which is adequate in terms of length of the story, vocabulary, and content of the story. (RA39, QT, Step 4)

Linguistically, the students typically stated the participants (e.g., teachers, students) or data source (e.g., the probability score, the peer feedback) as the subject in all steps. Some other forms were third-person *it* and existential *there*. A micro-research subject like *this finding* or *the finding(s)* appeared more while they were comparing the results with previous literature with in-text citation (Dujsik, 2013) directly or indirectly. Additionally, inferential discourse marker (e.g., hence) in Step 1 and 4 was sometimes utilized.

In conclusion, the differences generated from the research design are more evident in Step 1 and 3 in terms of conveying the information, but not of realizing the linguistic patterns. The appearance of the simple present tense in Step 2 and 4 is in line with most previous research (Dujsik, 2013; Kanoksilapatham, 2005) with some common words like *further research*, *suggest*, *recommend*, and *should*.

The Configuration of the Rhetorical Organization

This section addresses the second research question by describing the general commonalities and discrepancies of rhetorical patterns in the two groups of RAs. It is elaborated with the existing variation of the starting-ending move. The data were obtained by translating the label of each sentence into a sequence of labels, representing a pattern of rhetorical organization in each text. A configuration was then determined, consisting of 2-M (two-move), 3-M (three-move), and 4-M (four-move). Fig 2 depicts the overall results.

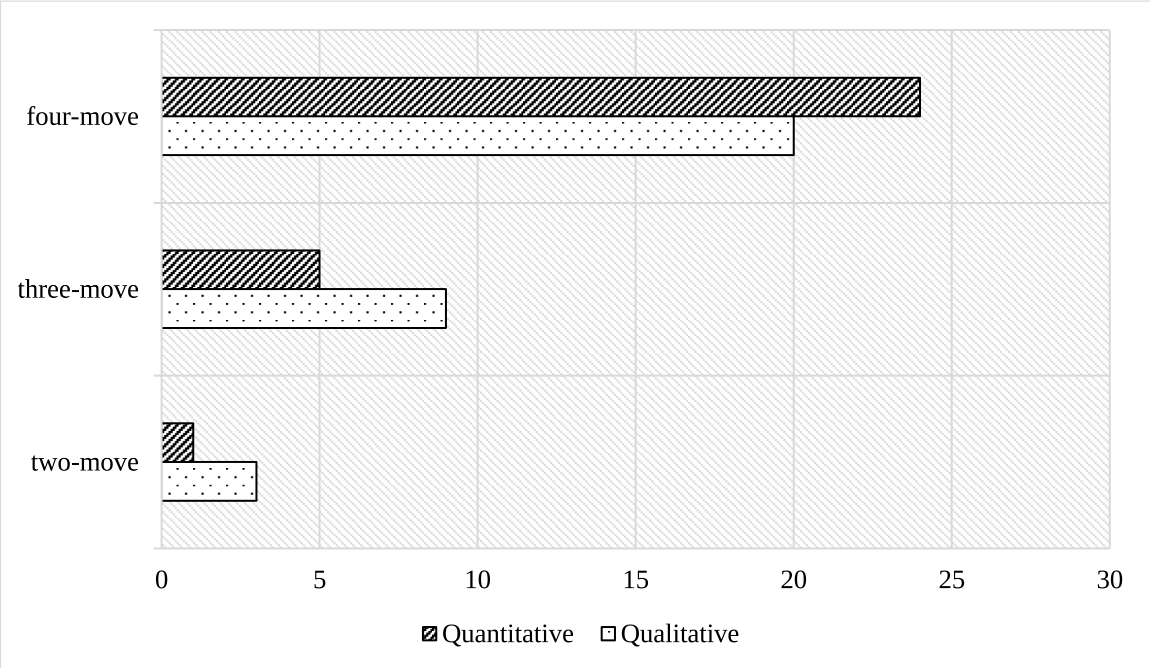

Fig. 1 The Identified Configurations of Rhetorical Patterns in both Cohorts

Research design does not necessarily result in differences in organizing the rhetorical moves of the F&D sections. Figure 2 demonstrated that one-move configuration did not occur in the corpus. Most of the students exhibited a four-move configuration. Similarly, the configuration of each move in the qualitative and quantitative groups was not different, as viewed from the percentages (see Table 5). The conformity was identified in some research articles which projected three-step configuration of Move 1 (QL=22%, QT=23%), two-step configuration of Move 2 (QL=69%, QT=70%), and one- or three-step configuration of Move 4 (QL=22% (one-step) and 28% (three-step), QT=17% and 23%). As envisaged, they relied more on 2Ss configuration in conveying their comments on the findings.

However, some discrepancies were noted in the rhetorical organization of Move 1. Table 5 exhibited the more precious information provided by half of the quantitative RAs through the manifestation of 2Ss, compared to the qualitative ones, with three times fewer to realize the configuration. The findings indicate the higher level of rhetorical awareness among the students who conducted quantitative research in providing background information. The reason might be the nature of the research design in which quantitative RAs are required to clarify the hypothesis and statistical analysis procedure. Cognition, on the other side, can play a critical role as well since the awareness to provide more information in the first move represents their repertoire dealing with this sub-genre.

Table 5 Rhetorical Moves Configurations across Research Designs

Move type	Move configuration	QL RAs (%)	QT RAs (%)
Move 1	One-step	34%	10%
	Two-step	13%	50%
	Three-step	22%	23%
Move 2	One-step	31%	27%
	Two-step	69%	70%
Move 4	One-step	22%	17%
	Two-step	41%	33%
	Three-step	28%	23%
	Four-step	6%	17%

Table 6 The Patterns of Starting-Ending Moves across Research Designs

Starting-ending move	QL RAs (%)	QT RAs (%)
1-4	22%	27%
1-2	9%	10%
1-3	6%	17%
1-1	3%	-
2-4	13%	13%
2-2	3%	7%

2-3	-	3%
3-1	3%	-
3-2	9%	-
3-3	3%	3%
3-4	25%	10%
4-2	3%	-
4-4	-	10%

Regarding the patterns in starting and ending the F&D sections, some commonalities and discrepancies were identified between the qualitative and quantitative research articles (see Table 6). The manifestation of Move 1 providing background information as the starting move obtained the highest percentage of research articles (QL=40%, QT=54%). The finding means that almost half of the students were not concerned with the provision of background information, which is naturally crucial for quantitative RAs. It may be caused by the students' cognition, as discussed in the earlier section. The manifestation of Move 4 commenting on results reached the least percentage of the featuring RAs (QL=3%, QT=10%). On the other side, the number of qualitative RAs featuring Move 2 reporting the results was fewer than that of quantitative RAs (16% and 23 % respectively). One notable discrepancy was in the manifestation of Move 3 summarizing results in 40% qualitative RAs. Only 13% of quantitative RAs started the findings and discussion section by providing a summary of the results. The manifestation of non-conformity of Move 2, Move 3, and Move four as the starting move is not in line with Arsyad's (2013b) study in which the analyzed corpus generally projected background information as the first move of the iterative F&D sections.

Furthermore, the commonality between the two groups was noticed in some research articles, which do not manifest Move 4 commenting on results as the typical and eligible ending move of findings and discussion section (39% and 63% respectively). Despite that, around 61% of the qualitative RAs have conformed to use Move 4 as the ending part. It is asserted by previous studies that published articles typically provide comments as the closing point of presenting the findings because it represents the criticality of the authors upon the obtained results (Amnuai, 2017; Kim et al., 2016; Lim, 2010; Nodoushan & Khakbaz, 2011) to end the findings and discussion sections; that is Move 4 commenting on results. Only 37% of the quantitative RAs performed Move 4 as the ending move. The findings exhibit a less logical coherence considering the incomplete relationship of meaning due to the absence of Move 4 as a strengthening communicative function in asserting their own claims about the findings.

Conclusion and Pedagogical Implication

This study has examined the manifestation of rhetorical moves of iterative findings and discussion sections written by NNES undergraduate students across research designs. The findings underscore the role of research design, which does not necessarily generate the wholly differing rhetorical conventions between qualitative and quantitative F&D sections. Specifically, the discrepancy lies on the manifestation of Move 1 and Move 2 in which the qualitative RAs are not concerned with the clarification of background information prior to the findings presentation as compared to the quantitative RAs. On the other side, most students from both groups conform to the provision of interpretation of the results. Moreover, this study opines that the students' rhetorical repertoire level shaped by the experiences during their academic writing course and research writing supervision period reasonably determines the commonality of the absence of in-depth argumentation after presenting the findings. Thus, the detailed description and explanation of this study can be a beneficial teaching resource for EAP teachers in EFL countries with similar characteristics and demands of scientific international publication policy to Indonesia.

Therefore, this study suggests EAP teachers implement data-driven genre-based pedagogy (Peacock, 2002; Quinn, 2014) to teach academic writing for publication purposes. In doing so, the teachers should prepare the learning sources like corpora from various international reputed journals. *Building knowledge of field* begins with a dialogic self-exploration and sharing the students' experiences of reading and writing a research paper, particularly on their strengths and weaknesses in reporting the results. It continues with the *modeling* stage, where the students have classroom analysis on rhetorical aspects of the given samples from the corpora. Previous experts suggest the use of AntConc to scrutinize the linguistic boundaries and AntMover to label the moves. *Joint construction* aims to encourage cooperative skills in identifying and explaining the rhetorical aspects of the moves in the group. *Independent construction* stimulates the students to enhance individual rhetorical awareness of their own F&D section by criticizing the moves manifestation with specific reference to the prepared corpora.

Due to the limitations on the variability of the corpus characteristics, this study suggests future research replicating this analysis to involve larger corpora with diverse characteristics, e.g., NNES undergraduate students, postgraduate students (Master and Doctoral candidates), and expert journal writers across disciplines. This study also suggests the exploration of the relationship between the rhetorical organization and lexical density level. It is because lexical density distinguishes the genre of research article writing from other academic genres. Therefore, the transparency about the issue can be a meaningful continuum to inform the research-publication-oriented EAP pedagogy better.

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THE ASIAN ESP JOURNAL

Making Logical-Semantic Relations in Science Writing: Korean Graduate Students' Use of Relative Clauses in Science and Engineering Journal Papers

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Biodata

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Abstract

This study presents how English relative clauses are used in original, pre-published manuscripts written by Korean science and engineering graduate students and junior researchers. Relative clauses promote semantic clarity and syntactic maturity but they are one of the most difficult grammatical features for non-native learners due to L1 interference, their diverse functions, and forms unique to the English language. With pedagogical purposes in mind, this research aims to explore how relative clauses used by Korean science and engineering graduate students and junior researchers differ from those used in leading science and engineering journal papers in terms of their frequency, structure, and distinctive attributes. A 536,575 word corpus based on 155 manuscripts has revealed a low frequency of non-restrictive relative clauses and '(,) preposition + which' structure. This study has also highlighted several types of inappropriate uses of relative clauses and made comparisons between those and others identified in published papers of *CELL*, *JACS*, and *IEEE*. Some pedagogical suggestions are provided to help non-native science and engineering graduate students and junior researchers use English relative clauses in more suitable and acceptable ways within their respective discourse communities.

Keywords: English relative clauses; science and engineering journal papers; English for academic purpose; comparative corpus-based analysis

Background of the Study

Writing and publishing papers in international journals, most of which are printed in the English language, has become a major concern of science and engineering graduate students in Korea. Publication of their research results in academic journals, or conference proceedings is demanded as part of their graduation requirements. However, writing journal papers for publication in English is a great burden to graduate students due to the lack of science writing courses available in undergraduate programs in Korea. In fact, only a few universities throughout the country offer a curriculum for science writing to their undergraduate students, which afterwards entails further self-study of the area during the period of graduate study. This reality has made graduate students working in science and engineering fields feel that they are disadvantaged when publishing research outcomes, compared to their native-speaking counterparts writing journal papers in their mother tongue, English (Cho, 2009a). In a similar context, an economic burden to non-native speaking writers publishing their research outcomes in English has been indicated (Ammon, 2001; Cocal & Vera, 2018; Van Paris, 2007)

Of components consisting of a science and engineering journal paper, linguistic factors such as grammatical structures and vocabulary were perceived by non-native speaking students and researchers to be more difficult and problematic than non-linguistic features such as content, paragraph development, overall text organization, and rhetorical uniqueness (Cho, 2009a; Dong, 1998). These non-linguistic components of science and engineering journal papers could be relatively quickly learned by reading other journal papers, and taught by supervisors and senior graduate students. In contrast, it takes much time and effort to master detailed grammatical features of the English language. In this situation, the focus for teaching and learning needs to be on unique and distinctive grammatical features that frequently appear in science and engineering journal papers. Among these, relative clauses deserve greater attention compared to other grammatical features, owing to their high frequency, and function to make logical-semantic relations between clauses in the promotion of semantic clarity and syntactic maturity.

With some pedagogical purposes in mind, this research investigated Korean graduate students' and junior researchers' use of relative clauses in original, pre-published science and engineering journal papers written for publication, comparing them to ones used in internationally top-notch journals of these fields, namely *CELL*, *Institute of Electrical and Electronics Engineers Journal of Solid-State Circuits* (hereafter, *IEEE*), and *Journal of American Chemical Society* (hereafter, *JACS*). The findings of this study highlight both the importance of and the need for more explicit attention to the teaching of relative clauses to non-native graduate students and junior researchers writing their research outcomes in English for publication purposes.

On the other hand, a study (Rozycki & Johnson, 2013) has revealed that grammatical errors present in engineering manuscripts did not affect their publication in an engineering journal. Some of the best papers published in IEEE Transactions were found to have non-canonical grammar or grammatical errors, such as incorrect article usage, subject-verb discord, use of active instead of passive verbs, and use of transitive verbs without objects. These findings have led to the suggestion that attention be paid to larger issues of journal papers such as structure, format and content. This suggestion, however, is only half valid since science and engineering manuscripts with grammatical errors submitted to international journals for publication are normally commented on the quality of English by journal reviewers, often resulting in the delay of publication. In personal communications with a professor in Physics and another professor in Chemistry at a research-centered university in Korea, both serving as international journal reviewers, they mentioned that they usually commented on the quality of English of manuscripts submitted, having paper authors rewrite or get editing services. As ~~a~~ 9writer of journal papers, the professor in Chemistry who earned his doctoral degree at Stanford University said that two out of five papers he had published was returned with some comment on the quality of writing, particularly the grammar, which in turn delayed paper publication. Thus, EFL practitioners working in the field of science and engineering should not abandon teaching and emphasizing some important grammatical features of English appearing in journal papers.

Literature Review

Relative clauses, which combine clauses, contribute to making relations between multiple clauses more straightforward and easier to understand, and promote semantic clarity and syntactic maturity. Separate sentences or clauses sometimes interfere with the flow of ideas presented within, inducing some difficulty for the reader who wishes to grasp the relationship between the clauses. In order to better make logical-semantic relations between clauses, the use of relative clauses is recommended. In fact, a number of technical writing textbooks strongly suggest linking related ideas or meanings using relative clauses (Lannon, 1988; Markel & Holmes, 1994; Weisman & Collins, 1998). This suggestion also holds true for ESL/EFL writing (Cowan, 2008; Enginarlar, 1994), being in line with the general belief that a longer T-unit helps secure better writing quality, and that the length of a sentence is a decisive factor to distinguish good writers from poor ones (Kameen, 1978, 1983). Caplan (2012) holds the view that sentences which adopt relative clauses are considered to be more academic than those with coordinating, and even subordinating conjunctions.

Research on relative clauses in academic writing has been mainly focused on their frequency. The frequency of relative clauses, including ones with zero relativizers, in academic prose was identified and investigated from a 40 million-word corpus by Biber et al. (1999). In their book, about 9900 cases of relative clauses, except for those containing *where*, *when*, and *why*, are presented in Figure 8.17 (p. 611). In terms of using relativizers, *which* was found to be the most frequently used in academic prose. It was also revealed that the frequency of restrictive clauses was three times higher than that of non-restrictive clauses, when *which* is used as a relative pronoun.

Other studies investigated the particular usage of relative clauses in journal papers across a wide variety of academic disciplines. Kopple (1998) examined the frequency and use of relative clauses in research reports from the journal *Physical Review Letters*, and compared the periodic changes between entries published during the early years of 1893-1901, and those written in 1980. No major changes were observed in terms of frequency, but the researcher did notice differences in the patterns of head nouns modified by relative clauses, such as experimental instruments and materials, along with experimental results and equations. Master (2002), investigating relative clauses in technical research reports, found that full relative clauses used in the fields of Biology and Math had the ratio of 2.9 and 4.3 cases per 1000 words, respectively, while ones used in the *TESOL Quarterly* presented 8.5 cases per 1000 words. This implies that humanities texts are likely to present a much higher use of full relative clauses than those in hard sciences. The higher use of relative clauses is probably attributable to the fact that humanities texts are more verbal-oriented than science texts, and necessitate the adoption of a greater number of linguistic devices to make relations between clauses logical and clear.

More recently, Deveci and Nunn (2018) explored the use of relative clauses in humanities and social sciences journal papers, and found that they accounted for about 40% of all the sentences in their corpus. This suggests that relative clauses represent a key sentence structure in journal paper writing in the field of humanities and social sciences. This high frequency may have resulted from the inclusion of full relative clauses as well as reduced ones. Cho and Lee (2016) investigated the use of relative clauses in science and engineering journal papers, namely *CELL*, *JACS*, and *IEEE*, and identified a relatively high frequency of relative clauses within them: 19 cases in *CELL*, 14 cases in *JACS*, and 12 cases in *IEEE* per 100 sentences, respectively. In the latter study, Cho and Lee counted full relative clauses only, which thereby resulted in the discovery that science and engineering journal papers contain a lower frequency of relative clause usage in comparison with the frequency of relative clauses used in humanities and social sciences journal papers. Furthermore, Cho and Lee's study included and analyzed one particular humanities journal, *English for Specific Purposes*, and found a frequency of 26 cases per 100 sentences. This further supports the finding that journal papers in humanities and social sciences tend to have a much higher frequency of relative clauses, compared to the frequency found in science and engineering journal papers.

It should be mentioned that relative clauses were found to be more frequently used than other major sentence structures, such as participle clauses, in academic writing. For example, Cho and Kim (2009) found that the frequency of participle clauses was 6.2 cases in *CELL* and 3.8 cases in *Physical Review Letters* (per 100 sentences respectively) which was much lower than that of relative clauses. The research above leads us to ascertain that relative clauses, due to their high frequency, serve as the most indispensable sentence structure in academic writing and thus deserve to be learned and taught intensively in consideration of their pedagogical implications.

Some interesting and pedagogically meaningful uses of relative clauses in science and engineering journal papers were identified by Cho and Lee (2016), and include the high frequency of non-restrictive relative clauses, alongside the extremely high use of *that* over *which* for restrictive relative clauses. Non-restrictive clauses, in particular, accounted for 48 % of all full relative clauses in engineering papers of *JACS* and *IEEE*. The high use of non-restrictive clauses is probably due to their distinctive functions to give detailed and additional information of the head noun or the main clause, and the ease with which the structure can be formed by simply adding a comma before the relativizer, *which*. This high frequency of non-restrictive relative clauses in engineering and science journal papers, however, does not coincide with Biber et al, (1999), whose investigation showed that the frequency of restrictive clauses was three times higher than that of non-restrictive clauses in academic writing. This difference likely stems from the contrast in the types of texts analyzed. The manuscripts investigated by Cho and Lee (2016) belonged to academic journals of science and engineering, while academic prose in Biber et al. (1999) encompassed a wide range of texts such as book extracts and research papers, over a wide range of disciplines including sciences, social sciences and humanities. This observation further demonstrates that different types of texts and academic disciplines call for different usage of non-restrictive relative clauses. Despite this, the fact that non-restrictive relative clauses in *JACS* and *IEEE* papers accounted for 48% of all written text is quite unexpected. This is a skill that clearly needs to be highlighted when teaching journal paper writing to graduate students of science and engineering.

In addition, the study (Cho & Lee, 2016) identified the extremely high use of *that* over *which* for restrictive relative clauses. The use of *that* over *which* totalled 97.3% in *CELL*, 84.3% in *JACS*, and 72.1% in *IEEE*. In particular, in the journal *CELL*, the relative pronoun *that* seems to have become a norm for restrictive relative clauses, while *which* has become standard for non-restrictive relative clauses. This finding also was unanticipated since academic texts are known to prefer using *which* to *that*. In fact, Biber et al. (1999) found *which* to be the mostly frequently used relative pronoun in academic texts, stating that the use of *that* is considerably lower than *which*. Investigating Figure 8.17 in their book revealed that in academic prose *which* was used about 1.6 times more often than *that*. Using either *that* or *which* for the restrictive relative clause in science and engineering journal papers would not make any difference in the quality of writing, but authors of science and engineering journal papers should be better aware of which relative pronoun is favored in journal papers in their fields.

In a textbook of academic writing for graduate students (Swales & Feak, 2012), reduced relative clauses are highlighted. It claims that reduced relative clauses, contrary to the general belief that they are not used as frequently as full relative clauses, are preferred in academic writing. The textbook gives a very detailed account for the construction of reduced relative clauses and presents many sample sentences, along with practice questions, which are pedagogically useful to non-native graduate students working for the publication of their research. Azar (1999) also underlines the importance of reduced relative clauses with many exercises in her book. The high use of reduced relative clauses has been supported by research, which has found that reduced relative clauses were more frequently used than full ones in technical research reports (Master, 2009), and across all five corpora analyzed, including spoken corpora (Roland, Dick and Elman, 2007).

Along with the frequency research of relative clauses in academic writing, their functions were investigated. Tse and Hyland (2010) explored the use of relative clauses in journal descriptions and classified them in terms of modified entities and types of modifications, focusing on their functions. They claimed that relative clauses do not merely help supplement the information about head nouns, but also modify various entities such as audience, the journal, and themes and formats, by delimiting, expanding, elaborating, exemplifying, and evaluating the information of head nouns modified by relative clauses. Similarly, Halliday and Matthiessen (2004) observed that restrictive relative clauses function as qualifiers in nominal groups and typically express the logical-semantic relation of expansion by specifying head nouns, and most non-restrictive clauses express the logico-semantic relation of elaboration by introducing background information, a characterization, an evaluation, or an interpretation of some element of the dominant clause. These functions of relative clauses could serve as effective linguistic devices in academic writing or journal paper writing, having lots of pedagogical implications and significance.

Given their high frequency and meaningful functions in academic writing, relative clauses, however, have been perceived to be one of the most difficult grammatical features of English to non-native speakers. Alotaibi (2016), who researched non-native speakers' learnability of English relative clauses, found that they turned out to be one of most challenging features of English grammar, due to the unnecessary, repetitive use of pronouns in the relative clause, deletion of relative pronouns and incorrect choice of relative pronouns. He suggested that English relative clauses be learned with care in order to have learners use them correctly. Similar findings were made by Marefat and Rahmany (2009). The difficulty non-native speakers felt with English relative clauses was mostly due to the difference between their L1 and the English language. Chinese learners of English (Chang, 2004), Korean learners of English (Park, 2000), Japanese learners of English (Miura, 1989), Hong Kongese learners of English (Bunton, 1979), Thai learners of English (Phoocharoensil & Simargool, 2010), and Persian learners of English (Abdolmanafi & Rahmani, 2012) were all affected by their L1 when constructing English relative clauses. In order not to make mistakes from using relative clauses, non-native speakers of English avoided using them (Schachter, 1974; Yip & Matthews, 1991), which in turn may have contributed to the low quality of writing.

However, it must be noted that the overall language proficiency of learners (Chiang, 1980), and data elicitation methods (Liu, 1998) also affected the production of English relative clauses. A study with Korean L2 learners (Baek, 2012) reported that L1 transfer was not witnessed in the processing of English relative clauses. Drawing on the insights from the previous corpus studies shows how the use of English relative clauses in original, pre-published manuscripts written by L2 writers of particular academic disciplines requires thoughtful attention.

Research Questions

Research has been conducted on English relative clauses used in published journal papers of academic disciplines, but it is rare to find the investigation of the use of them in original, pre-published manuscripts written by a specific group of non-native speakers, namely Korean science and engineering graduate students and junior researchers. Findings of the present research are expected to present some suggestions concerning what should be considered when using relative clauses for the publication of science and engineering journal papers, and to be able to provide pedagogical implications of teaching relative clauses to Korean science and engineering graduate students and junior researchers or, expanding the target group, to all non-native speakers of English working on the publication of their research. To accomplish these pedagogical purposes, the current research will explore the following questions:

1) Do relative clauses used by Korean science and engineering graduate students and junior researchers differ from ones used in leading science and engineering journal papers in terms of their frequency and structures?

2) What particular features do relative clauses used by Korean science and engineering graduate students and junior researchers have?

The Corpora Analyzed

The manuscripts for the study were collected for six months in 2017 through the language education center of a Korean research-oriented university with ten science and engineering departments; its main mission is to teach English to its graduate students, and to edit their English manuscripts written for publication in international journals and conference proceedings. A total of 155 manuscripts before editing, which thereby displayed the original quality of the students' writing, were analyzed for the current research. Of ten departments, Materials Science and Engineering papers accounted for 31.0% with 48 cases, followed by papers in Electrical Engineering (17.4% with 27 cases), Computer Science and Engineering (12.3% with 19 cases), Mechanical Engineering (11.6% with 18 cases), Chemical Engineering (8.4% with 13 cases), Industrial and Management Engineering (5.8% with 9 cases), and Environmental Engineering (5.2% with 8 cases). In contrast, manuscripts of pure sciences were rare: only eleven cases of Life Science, and one case of Chemistry and Physics, respectively. Taken all together, about 91.6% of the manuscripts belonged to engineering fields.

For the purpose of comparison with the Korean manuscript corpus, published journal paper corpus developed by Cho and Lee (2016) was used. It consisted of a total of 150 papers of three different journals of (1) *CELL* from Vol. 156, pp. 84–96 January 16, 2014 to Vol. 156, pp. 1017–1031 February 27, 2014, of (2) *JACS* from Vol. 136, pp. 122–129, 2014 to Vol. 136, pp.

671–867, 2014, and of (3) *IEEE* from Vol. 49, No. 1, pp. 9–18 January 2014 to Vol. 49, No 3, pp. 708–717, March 2014.

Relative clauses used in the text data, all of which were written either in Word, or PDF format, were identified and counted by using 'Find' function. Specifically, relative clauses with no relative pronoun were counted by looking at every single sentence. The number of sentences and words were also counted to show the frequency of relative clauses per 100 sentences. When counting relative clauses in the manuscripts, only complete sentences were considered. Coding was performed manually by two researchers independently and then cross-checked by each other.

Results

The Korean manuscript corpus consists of a total of 536,575 words, ranging from as short as 935 words to as long as 7519 words. The average number of words in a sentence, an important indicator for the quality of writing, is 23.2 words. This does not present much difference, compared to the average in published papers of *IEEE*, which is 22.9 words, but shows some difference, compared to that in *CELL* and *JACS* papers, 26.8 words and 26.4 words, respectively. Table 1 presents descriptive statistics for the manuscripts analyzed.

Table 1: Descriptive Statistics for Manuscripts Analyzed

	Number of Manuscripts	Total words	Total sentences	Average words in a manuscript	Average sentences in a manuscript	Average words in a sentence
KM*	155	536,575	23,162	3461	149	23.2
CELL	50	260,199	9712	5204	194	26.8
JACS	50	224,142	8496	4483	170	26.4
IEEE	50	249,940	10,901	4999	218	22.9

*KM stands for Korean manuscripts. Hereafter, the data related to relative clauses in *CELL*, *JACS* and *IEEE* are based on Cho and Lee (2016).

The frequency of relative clauses used in the Korean manuscripts, 11.4 per 100 sentences, is much lower than that of *CELL* and *JACS*, 19.0 and 13.7 per 100 sentences, respectively, but is very similar to *IEEE*, 11.9 per 100 sentences. Table 2 summarizes the results.

Table 2: Number of Relative Clauses and Frequency of Relative Clauses per 100 Sentences

	KM	*CELL*	*JACS*	*IEEE*
Number of Manuscripts Analyzed	155	50	50	50
Number of Relative Clauses	2637	1844	1167	1294
Frequency of Relative Clauses per 100 Sentences	11.4	19.0	13.7	11.9

To determine the differences of the frequency of relative clauses in Korean manuscripts and that in published papers in the three journals, we conducted statistical comparison tests. Because descriptive statistics revealed that the relative clause data (frequency counts) were positively skewed, and either a square root transformation or a log transformation, two of the standard transformations commonly used for count data, did not induce normality in the data, thus non-parametric tests were performed. A Kruskal-Wallis H test showed that there was a statistically significant difference in the frequency of relative clauses across the four groups ($\chi^2(2) = 82.776, p < 0.001$). Post-hoc pairwise comparisons (Bonferroni) revealed that the frequency of relative clauses used in Korean manuscripts was statistically significantly lower than that of all three journals. Table 3 presents the results.

Table 3: Pairwise Comparisons Between Korean Corpus and the Journal Corpus

	Test Statistic	Std.Error	Std. Test Statistic	Adj.Sig.
Korean-*JACS*	-49.626	14.338	-3.461	.003
Korean-*IEEE*	-71.246	14.338	-4.969	.000
Korean-*CELL*	-124.446	14.338	-8.680	.000

Given the greatest statistical differences between *CELL* and the Korean manuscripts, a comparison between relative clauses used in Korean manuscripts dealing with life science areas and ones used in published *CELL* papers was made. The frequency of relative clauses used in the life science manuscripts written by the Korean graduate students is much lower than that in *CELL* papers, 12.3 vs. 19.3. Further analysis using Mann–Whitney Test showed that Korean graduate students made significantly lower use of relative clauses ($U=59.0, p<0.001$) than did authors of the published *CELL* papers. Given that *CELL* papers have the highest frequency of relative clauses over *JACS* and *IEEE* papers, the frequency of relative clauses of life science manuscripts written by Korean graduate students is considered to be very low.

Next, the frequency of different structures of relative clauses was also examined. Based on the position of the head noun in the main clause and its function in the relative clause, the relative clauses were categorized into four types: OS, OO, SS and SO (Sheldon, 1974, p.275), each of which is exemplified below:

SS: The dog that jumps over the pig bumps into the lion.

SO: The lion that the horse bumps into jumps over the giraffe.

OS: The pig bumps into the horse that jumps over the giraffe.

OO: The dog stands on the horse that the giraffe jumps over.

As presented in table 4, the frequency distribution of the basic four types of restrictive relative clauses in the Korean manuscripts showed the order of OS > SS > OO > SO, which differs from the results of previous research. In fact, a body of research has shown a very similar frequency distribution of the four types of the relative clause with the order of OS > OO > SS > SO, even though the proportion of each type varied across corpora. (Abdolmanafi & Rahmani, 2012; Cho, 2009b; Cho & Lee, 2016; Stauble 1978; Wong, 1991). In the Korean manuscripts, however, the frequency of SS structure (13.1%) is higher than that of OO structure (8.9%). Interestingly, the distribution order found in the published journal papers is aligned with previous research.

Table 4: Frequency Distribution of the Basic Four Types of Restrictive Relative Clauses

Types	KM (N=1699)	*CELL* (N=1289)	*JACS* (N=604)	*IEEE*(N=667)
OS	1321 (77.8%)	904 (70.1%)	482(79.8%)	563(84.4%)
OO	152 (8.9%)	229(17.8%)	99(16.4%)	71(10.6%)
SS	223 (13.1%)	135(10.5%)	11(1.8%)	21(4.6%)
SO	3 (0.2%)	21(1.6%)	12(2.0%	2(0.3%)

Moreover, as seen in Table 5 below, the frequency of non-restrictive relative clauses used in the Korean manuscripts, which accounts for 35.1%, is much lower than that of those in *IEEE* and *JACS* papers, which is 48.5% and 48.2%, respectively (see Cho & Lee, 2016). The high frequency of non-restrictive relative clauses embodies the most distinctive characteristic of science and engineering journal papers, such as *IEEE* journals covering electrical engineering fields and *JACS* dealing with chemistry. The manuscripts of Korean graduate students, however, did not adopt non-restrictive relative clauses as frequently as the published journal papers. When their frequency is counted on each manuscript level, 28 manuscripts out of 155, 18% of all the Korean manuscripts, did not employ non-restrictive relative clauses at all. In contrast, all of the papers in *IEEE* and *JACS* were found to have at least one case of the non-restrictive relative clause.

Table 5: Frequency Distribution of Restrictive and Non-Restrictive Relative Clauses

	KM (N=2637)	*CELL*(N=1844)	*JACS*(N=1677)	*IEEE*(N=1294)
Restrictive Relative Clauses	1712 (64.9%)	1289 (69.9%)	604(51.8%)	667(51.5%)
Non-restrictive Relative Clauses	925 (35.1%)	555(30.1%)	563(48.2%)	627(48.5%)

The construction of ‘a preposition + which’ or ‘, a preposition + which’ deserves to be addressed due to its effective function to describe an experimental process, or status in science and engineering papers. The structures account for 6.4% in the Korean manuscripts, compared to 7.6% in *IEEE*, 13.1% in *JACS* and 11.8% in CELL papers. The frequency distribution of these structures in the Korean manuscripts and *IEEE* papers does not reveal any significant difference, but it should be mentioned that only 41% of the Korean manuscripts adopted either ‘a preposition + which,’ or ‘, a preposition + which’ structure, which means that about 6 out 10 papers written by the Korean graduate students did not use these structures at all. In contrast, 74.0% of *IEEE,* 82.0% of *JACS* and 98.0% of *CELL* papers employed the construction. Table 6 below summarizes the frequency of these structures.

Table 6: Frequency of ‘a Preposition + Which’ or ‘, a Preposition + Which’ Structure

	KM (N=2637)	*IEEE* (N=1294)	*JACS* (N=1677)	*CELL* (N=844)
Frequency of using ‘a preposition + which’ or ‘, a preposition + which’ structure in all relative clause structures	168(6.4%)	98 (7.6%)	153(13.1%)	218(11.8%)
	KM (N=155)	*IEEE* (N=50)	*JACS* (N=50)	*CELL* (N=50)
Frequency of using ‘a preposition + which’ or ‘, a preposition + which’ structure in all papers analyzed	63(40.6%)	37(74.0%)	41(82.0%)	49(98.0%)

Along with frequency, inappropriate uses of relative clauses in the Korean manuscripts were explored. A total of 183 out of 2637 relative clauses, accounting for 6.9%, were identified to have errors and were awkwardly expressed. Six of the most common types of errors found are presented in Table 7 below:

Table 7: Types of Errors of Relative Clauses

Category	Frequency	Proportion
use of restrictive relative clauses instead of non-restrictive ones	78	38.2%
misuse of relative pronouns	53	26.0%
no use of a preposition before a relative pronoun in cases where it is needed	43	21.1%
use of relative clauses in cases where they are not needed	24	11.8%
misuse of punctuations	4	2.0%
use of a preposition before a relative pronoun in cases where it is not needed	2	0.8%
Total	204*	100%

*The total is over 183 cases since some sentences were found to have more than one error of relative clauses.

The most common error found in the Korean manuscripts is the use of the restrictive relative clause in cases where the non-restrictive one should be used, as seen below:

> However, the loop switching method or combinations of multi-loop have a limited impedance range because the self-inductance of the switched loops are small which results in the low Q factor. (KM 15)

The relative clause in KM 15 is misused and needs to be replaced by the non-restrictive one since it serves to add more information about the main clause, rather than modifying the head noun. In the example above, the relative clause describes a result of 'the limited impedance range caused by the loop switching method or combinations of multi-loop.' The absence of a clear head noun in the main clause also leads the sentence to adopt the non-restrictive relative clause.

Another sentence below illustrates the same case, where the restrictive relative clause should be changed into the non-restrictive one. The relative clause in KM 44 serves to provide additional information about the head noun '$(1–4)\times10^{-10}$ Pam^3 s^{-1} m^{-2}. 'The content stated in it, 'which is much lower than that of untreated stainless steels,' does not modify or limit the head noun.

> However, hydrogen outgassing rates without a high temperature pre-treatment were as low as $(1–4)\times10^{-10}$ Pam^3 s^{-1} m^{-2}which is much lower than that of untreated stainless steels. (KM 44)

The second common error is from using an inappropriate relative pronoun, such as the relative pronoun *that* instead of *which* in the non-restrictive relative clause, as shown in the sentence below. The writer used the relative pronoun *that*, which is not allowed in the non-restrictive relative clause. This type of error can be corrected simply by substituting the relative pronoun *which* for *that*.

> The relevant phonon mode, involving sheer distortion of the Ta chains against the Ni chains [Fig, 1(b)], has $q = 0$ wave vector, <u>that</u> is also not sensitive to k_z dispersion of the electronic states. (KM 43)

The next type of error, however, seems to be serious considering the components constituting a sentence. KM 83 below present a complicated relative clause structure, where the relative pronoun *which* is used without a preposition preceding it. Since the relative clause can stand alone, not requiring any further sentence components, it needs a preposition functioning to link the head noun and the relative clause.

> Starting from choosing the valid number of clusters <u>which</u> the best-cut value is more than 1.25, each clustered group is characterized by technical keywords which do not coincide with other groups (Everitt et al, 2001). (KM 83)

About 11.8% of the errors found in the Korean manuscripts are from the misuse of reduced relative clauses. KM 138 below displays this type of error clearly, where the relative pronoun *which* should be deleted.

> Although we cannot definitely assign to the Siegrist phase because of the unclear character in ARPES spectra, this result can support the phase transition of pentacene <u>which</u> reported previously. (KM 138)

This type of misuse of a reduced relative clause with the present perfect tense form of a verb was frequently found in the Korean manuscripts. About 88% of the errors from a reduced relative clause belonged to this case. In contrast, 12% of the errors were related to a different case, where the present progressive tense form of a verb was used with a relative pronoun, as shown in KM 16 below:

> Therefore, designing resonators <u>that</u> defining specific Q and k is much more convenient than satisfying specific R, L, C and mutual inductances. (KM 16)

Discussions

The corpus of the present study based on original, pre-published students' manuscripts present several different features in the use of relative clauses, compared to published papers in *CELL*, *JACS* and *IEEE*. First of all, the lower frequency of non-restrictive relative clauses should be mentioned. Non-restrictive relative clauses with their effective functions to provide further information about the head noun or the main clause, along with their ease of construction, are considered to be the most representative feature of relative clauses in science and engineering journal papers. This claim is valid, considering the frequency of non-restrictive clauses in a humanities journal, namely *English for Specific Purposes*, which accounted for 20.9% only, compared to 48.2% in *JACS* papers and 48.5% in *IEEE* papers (Cho and Lee, 2016). Even though the frequency of non-restrictive relative clauses in the manuscripts written by the Korean graduate students and junior researchers, 35.1%, was higher than that of journal *ESP*, it was much lower than that of *JACS* and *IEEE* papers. It should be also mentioned that 18% of the Korean manuscripts did not use non-restrictive relative clauses at all, which is compared to the fact that every single paper in *JACS* and *IEEE* journals adopted at least one case of non-restrictive relative clauses. This striking difference implies that the functions of non-restrictive clauses have not been well recognized by the authors of the Korean manuscripts, and thus the use of non-restrictive relative clauses should be more emphatically taught to, and learned by Korean engineering and science graduate students writing journal papers for publication.

Even if the lower use of non-restrictive relative clauses identified in the Korean manuscripts does neither seriously affect the quality of writing, nor the publication of research findings, it is evident that the unawareness of their functions and uses will lead inexperienced, non-native speaking authors of science and engineering journal papers to struggle with finding appropriate sentence structures and expressions. In contrast, the balanced use of non-restrictive relative clauses contributes to enhancing the quality of writing in terms of syntactic maturity and semantic clarity, and to reducing time and effort for writing. Authors of science and engineering journal papers should be reminded that non-restrictive relative clauses serve as a key, representative sentence structure in their papers due to their diverse functions and ease of construction.

In a similar context, a comparison of relative clauses used in the Korean manuscripts dealing with life science, and *CELL* papers showed a significant difference in their frequency at a rate of 10.1 cases per 100 sentences in the Korean manuscripts vs. 19.0 cases per 100 sentences in *CELL* papers, indicating that the authors of the Korean manuscripts are not familiar with the functions and uses of relative clauses valued in the academic community of life science journals. This finding again calls for explicitly teaching this grammatical feature to graduate students and junior researchers who are writing papers for journal publication.

Another notable finding of this study is that the frequency of SS type of restrictive relative clauses is higher than that of OO type. This is unexpected since no research has ever shown the higher frequency distribution of SS construction over OO structure (see Abdolmanafi and Rahmani, 2012; Cho, 2009b; Cho and Lee, 2016; Stauble 1978; Wong, 1991). Furthermore, a body of research has convincingly demonstrated that OS and OO structures, which do not include center embedding, are easier to process than SS and SO structures with center embedding (Ioup & Kruse, 1977; Kuno, 1974; Schumann, 1980). As presented in Table 4, SS structure counted for 13.1%, compared to the proportion of 8.9% of OO structure. KM 5, for example, had three cases of SS structure, but no case of OO structure was identified.

> Due to the fact that the ammonium ion (Figure 4) <u>which</u> is the main nitrogen source for cell growth and lipid accumulation was still available in the culture, extra carbon sources were used for the cell growth during the whole reaction time. (KM 5)
>
> Thus, the needs for alternative energy <u>which</u> induces less environmental load and has more environmental benefits are on the increase. (KM 5)
>
> Diesel fuel <u>which</u> is the mixture of fatty acid alkyl esters can be a good candidate for alternative energy [2]. (KM 5)

That the frequency of SS type of relative clauses was higher than that of OO type in the Korean manuscripts was probably attributable to the influence of L1, the Korean language, on the production of English relative clauses. In the Korean language, the relative clause of SS type is known to be easier to process and to produce than that of OO type. This may have led to more production of SS type in the manuscripts written by Korean graduate students and junior researchers. The L1 influence can be explained by the structural features of Korean sentences. Relative clauses in Korean precede the head noun, while those in English follow it, and Korean language conforms to a Subject-Object-Verb word order. In a sentence that consists of an OO type relative clause, there is a significant distance between the main subject and verb, which makes sentence processing more difficult (Scott, 2004). In fact, a study on the acquisition of Korean relative clauses of Japanese KFL (Korean as a Foreign Language) learners and Chinese KFL learners (Ko, 2013) has identified that SS structure was more frequent and easier to produce than OO structure. Thus it is appropriate to claim that L1 interference has occurred in the production of English relative clauses used in science and engineering journal papers written by Koreans. The lower frequency of OO type relative clauses in the Korean manuscripts, however, does not necessarily mean that the quality of their writing is lower than that of published papers. It could be considered to be a unique trait of relative clauses used by young Korean scholars and researchers working in science and engineering fields.

Relative clause structures of 'a preposition + which,' or ', preposition + which' in the Korean corpus also showed much lower frequency, compared to those in published journal papers of *IEEE*, *JACS* and *CELL*. These structures function to describe an experimental process or status, preventing the same word, the head noun, from being repeatedly used and making the semantic role of the head noun clear in the relative clause, as seen in the sentences below:

> Improper ground configurations can provide the path <u>on which</u> noise can propagate from its place of origin to all over the system. (KM 111)
>
> The MPSs were installed in the accelerator facility, <u>in which</u> switching noise from the high power modulator is very strong. (KM 111)

In many cases, prepositions showing a position such as 'in,' and 'at' are the most frequently used in this construction, as presented in KM 10 below:

> This feature originates from the two oxygen atoms in the epoxide; the same feature can be also seen in the right panels of Fig, 4d, in which dispersion-less flat feature is obviously seen near -2,6 eV. (KM 10)

Despite this function, only 63 out of 155 Korean manuscripts, accounting for 40.6%, adopted these structures, which is very low, compared to 74.0% in *IEEE*, 82.2% in *JACS* and 98.8% in *CELL* papers, respectively. The relatively low use of these structures implies that the functions and uses of them, probably due to their rather complicated formation, have not been well recognized by the authors of the Korean manuscripts. In other words, that a preposition in the structure is separated from the object it modifies and placed before the relative pronoun *which* would not be readily understood and employed by non-native speakers of English.

Of errors identified in the Korean manuscripts, the case in which restrictive relative clauses were used instead of non-restrictive ones deserves to be discussed first due to its high proportion. On the surface, the difference between the restrictive relative clause and non-restrictive one lies in the use of the comma before the relative pronoun *which* and the difference appears to be trivial. However, much difference exists between them in terms of their functions and uses. Non-restrictive relative clauses in science and engineering journal papers normally present results, implications, suggestions, and explanations of findings and states of an experiment described in the main clause, which is not possible with restrictive relative clauses that post-modify the head noun. In addition, that non-restrictive relative clauses can stand alone without a clear head noun separates themselves from restrictive ones, which always accompany the head noun before the relative clause. An easy way to construct non-restrictive relative clauses, just adding a comma before the relative pronoun *which*, can explain why they are favored in science and engineering journal papers. In this regard, authors of science and engineering journal papers should be well informed about the functions and uses of non-restrictive relative clauses.

On the other hand, there are some cases where the distinction between restrictive and non-restrictive clauses is not clear-cut. As shown in KM 36 below, it is not clear what type of relative clause is grammatically and semantically more appropriate:

> NC(20), <u>which</u> has size near Bohr diameter, showed the highest PLQE among other size NCs at every excitation wavelength, and maximum PLQE (~72 %) under 400-nm excitation. (KM 36)

If the relative clause is intended to further provide the information or characteristics of the head noun *NC(20)*, the non-restrictive relative clause works better; however, if it aims to post-modify and limit the head noun, the restrictive relative clause is more appropriate. The decision depends on an author's interpretation and role of the head noun.

Verbs used in relative clauses can be a useful guideline to choose the restrictive or non-restrictive relative clause. For example, if verbs helping to describe the results and implications of an experiment or a physical state described in the main clause are used in the relative clause, it is more appropriate to use non-restrictive relative clauses. This study has found that the authors of the Korean manuscripts made limited and less flexible use of verbs in constructing non-restrictive relative clauses, compared to the authors of the journal papers of *CELL*, *JACS* and *IEEE*. Non-restrictive relative clauses adopted in science and engineering journal papers normally serve to describe results and implications of an experiment or a physical state described in the main clause. This key function of non-restrictive relative clauses can be effectively realized by employing appropriate verbs to indicate results and implications. Clearly, the Korean graduate students need to expand their linguistic repertoire, including verbs that are functional for construing intended meaning in their science writing. Therefore, developing control over a range of linguistic resources for creating science and engineering journal papers should be a high priority in science writing courses.

It is worth pointing out that one of the common mistakes found in the Korean manuscripts was the L2 writers' misuse of reduced relative clauses, which serve as a key sentence structure in academic prose and help prevent verb-muffling expressions from arising (Brogan, 1973). Research has shown that reduced relative clauses were more frequently used than full ones in English academic writing, and textbooks for non-native speakers of English have highlighted the use of them. To construct reduced relative clauses is to delete the relative pronoun and the verb *be* but some Korean graduate students and junior researchers seemed not to apprehend this basic rule for the construction of reduced relative clause. Considering the frequent use of reduced relative clauses, they deserve special attention from authors of science and engineering journal papers. This suggestion looks contradictory since full relative clauses, not reduced ones, are believed to boost the quality of writing, syntactic maturity and semantic clarity, while the form of reduced relative clauses without relative pronouns makes them considered to be a sentential component to post-modify a noun preceding them, rather than a type of relative clauses. Reduced relative clauses, however, help avoid the wordiness of writing. The sentence below with three relative clauses is not economical in delivering the meaning originally intended.

> In a feasibility analysis whether to develop a new technology, the present value which is the development cost, the future value which includes the expected benefits and maintenance costs, and the real discount rate which is applied to change from the future value to the present value were applied. (KM 143)

If KM 143 adopts reduced relative clauses like the sentence below, it appears to be more concise and compact, contributing to the faster comprehension of the meaning of the sentence.

> In a feasibility analysis whether to develop a new technology, the present value which is the development cost, the future value including the expected benefits and maintenance costs, and the real discount rate applied to change from the future value to the present value were applied.

Conclusion and Pedagogical Implications

This study intends to investigate the use of relative clauses in science and engineering journal manuscripts written by Korean graduate students and junior scholars, by comparing them to ones used in published journal papers of *CELL*, *JACS*, and *IEEE*. Due to this comparison, a question arises whether published journal papers serve as a norm with an acceptable quality of writing, which sometimes affects the publication of a manuscript submitted to an academic journal. Before it is published in internationally renowned journals, a manuscript has normally gone through harsh review processes, which often point to the quality of English. Thus manuscripts have usually been edited and proofread by experienced editors before they are submitted, contributing to the enhancement of the quality of their writing. Even accepted papers are sometimes recommended to be edited by journal referees. The quality of English in published journal papers, in particular, leading science and engineering journal papers, is high enough to be used as a norm which inexperienced novice authors of science and engineering journal papers refer to. In this regard, published journal papers are very promising, reliable resources to explore specific features of English in the fields of science and engineering (Cho & Lee, 2016).

The findings of the present research can provide valuable tips for teaching relative clauses to non-native science and engineering graduate students and junior researchers writing journal papers for publication. In particular, differences in relative clauses used in published journal papers and ones in original, pre-published manuscripts written by Korean graduate students will constitute teaching materials for the grammatical feature. For example, the lower use of non-restrictive clauses could be explicitly mentioned, along with their diverse functions and ease of construction. The '(,) preposition + which' construction also deserves to be taught since the structure, despite its effective role in science prose, was not frequently employed in the Korean manuscripts and the structure was found to be one of most serious error-causing factors. It should be also remembered that reduced relative clauses, though the structure was not the main focus of the present study, play a key role in academic writing as they promote the compact, concise, and economic style of meaning construction.

One powerful way to help students learn relative clauses is to raise their consciousness about the ways English relative clauses work in the texts they read and write. Students can play an active role by analyzing well-written, high quality journal papers showing appropriate uses of relative clauses and comparing these papers with their own manuscripts. Such a consciousness-raising task (e.g., Hyland, 2013; Swales, 1990) will help novice Korean engineering researchers quickly grasp the recommended uses of the distinctive grammatical feature in published journal papers and notice shortcomings in their use of relative clauses in journal paper writing. The self-directed and autonomous approach to students' own corpora, in fact, has turned out to be effective in the teaching of ESP (Hafner and Candlin, 2007; Lee and Swales, 2006). Convergent findings were reported by a more recent study. Koo and Sung (2018) developed and evaluated the effectiveness of their EFL curriculum for postgraduates in engineering at a university in Korea. They examined a task in which the postgraduates analyze excerpts from their own essays and found that the consciousness-raising task effectively enhanced the novice researchers' awareness of both problems and solutions in their academic writing. These studies provide a clearer picture of how to improve EFL writers' self-awareness of English language use for specific purposes in an academic context, which ultimately will expand their academic language repertoire to become professional writers.

Lastly, it should be mentioned that the present study, which is based on the corpora of a particular group of authors, namely Korean science and engineering graduate students and junior researchers, is not free from the limit of generalization. This limit calls for further corpus-based investigation with other group of students, such as Chinese students, Japanese students, Thai students, and Arabic students. Corpora collected from journal paper authors with different language proficiency in the same language group will also be a promising candidate for further research to explore the use of relative clauses in science and engineering journal papers.

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Lexical Bundles in the Discussion Sections of Applied Linguistics Research Articles: A Cross–Paradigm Analysis

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Abstract

Lexical bundles, defined by Biber and Barbieri (2007) as "building blocks of discourse" (p. 263), vary across disciplines, modes, genres, and rhetorical structures. Knowledge of lexical bundles can contribute to accelerated L2 acquisition, more fluent language use, and to the sense that a speaker or writer is a legitimate member of a given community of practice. Over the last two decades, research investigating LBs in discipline–based texts has contributed to our knowledge of multi–word sequences and our understanding of disciplinary variation. However, Le and Harrington (2015) note that the occurrence of lexical bundles across methodological paradigms (quantitative, qualitative, mixed–methods) in research articles remains under–explored. This exploratory, comparative study aims to fill this lacuna in the literature. First, the paper presents the most frequent lexical bundles in the discussion sections of 150 research articles in the field of applied linguistics. Second, it reports on the structural patterns of these lexical bundles. Lastly, it reports on the extent to which quantitative, qualitative, and mixed–methods research articles are similar or different with respect to the frequency and structural patterns of their lexical bundles. Findings provide preliminary evidence that different methodological paradigms call for different sets of lexical bundles.

Keywords: applied linguistics; discussion section; lexical bundles; methodological paradigms

1. Introduction

Phraseology, defined by Cowie (1994) as "the study of the structure, meaning and use of word combinations" (p. 3168), is now an established area of research in applied linguistics and has been characterized as fundamental to second language learning and teaching (Karabacak & Qin, 2013; Li & Schmitt, 2009; Shin & Kim, 2017; Wray, 2002).

Linguistic structures which fall within the purview of phraseology include idioms, collocations, and lexical bundles (LBs). The present study focuses on the use of LBs, defined as extended collocations or "bundles of words" (Biber, Johansson, Leech, Conrad, & Finegan, 1999, p. 989) which occur frequently in spoken and/or written texts. Because LBs are learned as "wholes" (Pérez–Llantada, 2014, p. 83) and are stored as "unanalyzed multi–word chunks" (Biber, Conrad, & Cortes, 2004, p. 400), they can be remembered and retrieved more efficiently than strings of individual words. This can contribute to accelerated L2 acquisition and more fluent language use (Biber et al., 2004; Esfandiari & Barbary, 2017; Wray, 2008).

LBs vary across disciplines, genres, moves, and modes (e.g., Biber et al., 2004; Cortes, 2013; Hyland, 2008a, 2008b; Jalali, 2013). Academic writers use LBs to clarify their meanings, increase the coherence of their texts, and position themselves as legitimate members of a given community of practice (e.g., Biber et al., 2004; Hyland, 2008a, 2008b). Research further indicates that apprentice and professional writers use different LBs (Chen & Baker, 2010; Cortes, 2004; Hyland, 2008b; Scott & Tribble, 2006). Novice writers who acquire a command of discipline–based LBs may be able to use academic language more appropriately and fluently (Cortes, 2004; Hyland, 2012; Nesselhauf, 2005).

Over the last two decades, research investigating lexical bundles in discipline–based texts has contributed to our knowledge of multi–word sequences and our understanding of disciplinary variation (e.g., Abdollahpour & Gholami, 2018; Cortes, 2004, 2013; Hyland, 2008a, 2008b; Jalali, 2013; Lin & Kuo, 2014)**.** However, despite the insights gleaned from such investigations into the characteristics of LBs, the literature still lacks an analysis that focuses on the use of LBs across methodological paradigms (i.e., quantitative, qualitative, and mixed–methods). In an initial effort to fill this lacuna, the present study explores the use of LBs within different methodological paradigms in articles published in the field of applied linguistics.

2. Literature Review

There have been a plethora of studies probing the use of LBs in academic texts. The frequency, structure, and function of lexical bundles have been analyzed in terms of their disciplinary (e.g., Abdollahpour & Gholami, 2018; Durrant, 2017; Hyland, 2008b; Johnston, 2017; Lin & Kuo, 2014), genre–base (e.g., Hyland, 2008a; Jalali, 2013), and mode–oriented variation (e.g., Biber et al, 1999; Biber & Barbieri, 2007). A few studies have focused on the relationship between LBs, moves and steps (Cortes, 2013; Le & Harrington, 2015). Lexical bundles have also been considered from the perspective of writer expertise, and their use in native and non–native texts has been analyzed (e.g., Ädel & Erman, 2012; Bychkovska & Lee, 2017; Chen & Baker, 2010; Cortes, 2004; Hyland, 2008a; Ucar, 2017; Wei & Lei, 2011). Only a small handful of studies, however, have examined discussion sections (e.g., Basturkmen, 2009; Hashemi & Gohari Moghaddam, 2016; Le & Harrington, 2015; Ruiying & Allison, 2003). Le and Harrington (2015), for instance, probed the relationship between rhetorical moves and the distribution of LBs in a specific move (the *commenting on results* move) in the discussion sections of quantitative applied linguistics RAs. Each of the studies above will now be briefly discussed.

Durrant (2015), Hyland (2008b), and Johnston (2017) have highlighted the discipline–oriented nature of LBs. Their results showed that LBs are not only central to academic discourse, but also discipline–oriented. For instance, Hyland found that *passive + prepositional phrase* bundles were used more frequently in pure and applied sciences as compared to soft sciences. Research also underlines the variation of LBs across genres (Hyland, 2008a; Jalali, 2013). Jalali (2013), for example, focused on the variable use of LBs in applied linguistics master's theses and doctoral dissertations. Jalaili's results indicated that there was a marked difference between the two genres in terms of the number of bundles used, their frequency, distribution, and functions.

Analyzing the differences between LBs in different modes (spoken and written), Biber and his colleagues (1999) found that LBs recur more frequently in conversation than in written academic texts. A later study by Biber and Barbieri (2007) on LBs in a range of spoken and written university texts, however, called the initial findings of Biber et al. into question. The latter findings indicated that LBs were more common in written texts. The authors asserted that a writer's communicative purpose(s) ultimately determine the use of LBs.

A few studies have focused on the relationship between lexical bundles, moves, and steps. Moves can be defined as "rhetorical and organizational structures" (Mizumoto, Hamatani, & Imao, 2017) which fulfill particular communicative functions in spoken and written discourse and are divided into steps. Steps are the rhetorical means, used individually or in combination, to realize the functions of each move (Le & Harrington, 2015, p. 47). Cortes (2013) identified LBs in the introduction sections of RAs in various disciplines and explored links between LBs, moves, and steps. She found that some LBs, particularly those comprised of six or more words, differed from one move and/or step to the next. Le and Harrington's (2015) study of discussion sections in quantitative applied linguistics RAs supports Cortes' analysis. Their findings demonstrated that different LBs are used in the steps *interpreting results* and *accounting for results* (in the *commenting on results* move).

Investigating the use of LBs by writers with different levels of writing expertise (students versus experts in the disciplines of history and biology), Cortes (2004) showed that LBs are relatively rare in student writing. Conversely, Wei and Lei (2011) analyzed the use of four–word LBs in two corpora, one of doctoral dissertations written by Chinese EFL advanced learners and one of published journal articles written by Chinese professional writers. A structural and functional analysis of four–word bundles showed that the advanced learners in the study not only used more LBs than the professional writers, but that their use of LBs was more varied. Similarly, results of Hyland's (2008a) study showed that the non–native professional writers in his study used less frequent and less varied LBs compared to the non–native master students. The results of Wei and Lei (2011), as well as Hyland (2008a), contradict the general assumption that professional writers use the greatest range of LBs both in terms of frequency and distribution.

Comparing the use of LBs by native and non–native students, Chen and Baker (2010), Ädel and Erman (2012), and Ucar (2017) concluded that non–native writers employed LBs less frequently than native writers, and that the variety of LBs they used was also less diverse. Contradictorily, Bychkovska and Lee (2017) showed that the Chinese undergraduate students (L2 writers) in their study used more bundle types and tokens in English argumentative essays than did the native (L1) writers.

Only a small handful of studies have examined discussion sections in academic texts (e.g., Basturkmen, 2009; Hashemi & Gohari Moghaddam, 2016; Le & Harrington, 2015; Ruiying & Allison, 2003; Wright, 2019). These studies have tended to focus almost exclusively on identifying rhetorical moves rather than on exploring LBs. Two notable exceptions are the studies conducted by Le and Harrington (2015) and by Wright (2019). Le and Harrington's (2015) study was focused on both the rhetorical moves and the distribution of LBs in a specific move in the discussion sections of quantitative RAs in the field of applied linguistics. Their results demonstrated that in the move they denominated *commenting on results*, the steps *interpreting results* and *accounting for results* were characterized by different LBs. Wright's (2019) results showed that the frequency of LBs across RA subgenres (introductions, methods, results, and discussions) differed.

Overall, this brief review demonstrates that while the field of LB research is quite developed, there remains a number of opportunity areas for continued research. Research on the use of LBs in spoken and written texts (see Biber & Barbieri, 2007; Biber et al., 1999), novice and expert writers' performance (see Cortes, 2004; Hyland, 2008a; Wei & Lei, 2011), and native and non–native writers texts (see Ädel & Erman, 2012; Bychkovska & Lee, 2017; Chen & Baker, 2010; Ucar, 2017) leave important questions unanswered. Among these, questions about the use of lexical bundles in research articles within different methodological paradigms remain unexplored (Le & Harrington, 2015). The present study is an exploratory attempt to fill this gap by identifying and comparing the characteristics of LBs in the discussion sections of quantitative, qualitative, and mixed–methods RAs within the field of applied linguistics. Specifically, the current study was motivated and guided by the following questions:

1. What are the most frequent lexical bundles in the discussion sections of research articles in applied linguistics?
2. To what extent are quantitative, qualitative, and mixed–methods research articles similar or different with respect to the frequency and structural patterns of their lexical bundles?
3. What are the structural patterns of the lexical bundles used in the discussion sections of research articles in applied linguistics?

3. Methodology

In this section, the corpus used for this study is described in detail. The procedures utilized for data collection and analysis are then detailed.

3.1. The Corpus

In order to carry out an analysis of the lexical bundles used across quantitative, qualitative and mixed–methods RAs, a corpus was first built by gathering the discussion sections of 150 research articles selected from ten high–impact (0.47 to 3.32) applied linguistic journals (*Applied Linguistics, TESOL Quarterly, Language Learning, The Modern Language Journal, Language Teaching Research, Journal of English for Specific Purposes, Journal of English for Academic Purposes, Second Language Writing, System*, and *RELC Journal*). Fifty of these articles were quantitative in nature (67,635 words total), 50 were qualitative (59,508 words total), and 50 employed a mixed–methods approach (56,838 words total). The completed corpus consisted of 183,981 words. Because genres change over time (Guinda, 2015), only articles published between 2015 and 2018 were selected for inclusion into the corpus.

3.2. Procedure

Research articles containing a discussion section explicitly identified by a heading label were downloaded from the target journals' websites. Hybrid headings, such as *Results and Discussion* or *Discussion and Conclusion* were excluded from consideration. In addition, the discussion sections identified by the heading label *Discussion* were closely examined to make sure they included only the moves and steps generally associated with discussion sections. Accordingly, moves and steps unique to other subgenres, such as *limitations of the study,* were excluded from the analysis. The researchers categorized the RAs in terms of their methodological paradigms (i.e., quantitative, qualitative, and mixed–methods). Data collection continued until three groups of 50 articles, each group representing one of the methodological paradigms, had been amassed. This resulted in an ultimate collection of 150 RAs.

From these articles, four separate corpora were assembled. Three paradigm–specific corpora were built using the articles that had previously been categorized in terms of their methodological foci. An inclusive, master corpus was built using the same 150 research articles. In order to create these corpora, each of the RA's discussion section was copied and pasted into separate Microsoft Word documents (.docx). They were then subsequently converted into software–analyzable text files. Finally, they were analyzed using Anthony's (2018) free computer software, AntConc.

Data analysis was performed in two phases. In the first phase, the master corpus of 150 discussion sections was uploaded into the AntConc software; the frequency and distribution thresholds were then set. Frequency and distribution thresholds are established criteria for multi–word combinations to be considered as lexical bundles. These thresholds are somewhat arbitrary (Ädel & Erman, 2012) and differ from one study to another, depending primarily on mode of language and corpus size (Esfandiari & Barbary, 2017, p. 22). To cite two notable examples, Cortes (2004) and Hyland (2008a, 2008b) used a threshold of 20 LBs per million words, whereas Biber et al. (2004) adopted a threshold of 40 LBs per million words.

Biber and Barbieri (2007) and Chen and Baker (2014) suggest that the following normalization formula be used for corpora that are of different sizes, none of which exceeds a million words.

$$\frac{(standard\ frequency\ threshold) \times\ (number\ of\ words\ in\ the\ corpus)}{1{,}000{,}000\ (number\ of\ words\ in\ a\ standard\ corpus)}$$

In the current study, this normalization formula yielded a value of 7.35.

$$\frac{40\ (standard\ frequency\ threshold) \times 183{,}981 (number\ of\ words\ in\ this\ corpus)}{1{,}000{,}000\ (number\ of\ words\ in\ a\ standard\ corpus)} = 7.35$$

Rounding up the results of the normalization formula, the frequency threshold of 8 times per 183,981 words was set for four–word LBs. (This means that a phrase would have to appear at least 8 times in the master corpus to be identified as a LB.)

Again, using the normalization formula, the rounded–up frequency threshold of LBs for each individual group of articles (i.e., research paradigms) was set at 3. The distribution threshold was normalized for small corpora (Biber & Barbieri, 2007). According to Biber and Barbieri

(2007), a word combination can be considered as a LB when it occurs in four or more different texts in corpora between 100,000–200,000 words or when it occurs in three or more different texts in corpora between 50,000–100,000 words. Thus, the distribution threshold of 4 was adopted for the master corpus (183,981 words); the distribution threshold of 3 was adopted for the three paradigm–specific corpora. Next, the lexical bundles which had been identified were analyzed in terms of their frequency and linguistic structure.

In the second phase, each of the three paradigm–specific corpora was uploaded into the AntConc software. After setting their normalized frequencies and distribution thresholds (frequency= 3, distribution= 3), the LBs identified in each group were recorded individually. Next, the LBs of the three groups of discussion sections were compared to each other both quantitatively and qualitatively. Finally, in addition to frequency and percentage, chi–square tests were used to ascertain whether the differences between the three groups of research articles were statistically significant.

In all the analyses, only four–word lexical bundles were considered. There were two principle reasons for this. First, four–word bundles are far more common than other types; they are, for instance, found ten times as often as five–word bundles (Cortes, 2013; Hyland, 2008b, 2012). Second, four–word bundles ineluctably incorporate three–word bundles (Cortes, 2004). For example, *as a result of* necessarily includes the bundle *as a result*.

4. Results

4.1. Frequent Lexical Bundles

Applying the frequency threshold of 8 and the distribution number of 4 (i.e., occurrence in at least 4 texts) for the 150 research articles, the analysis yielded 85 four–word lexical bundles with 1,114 tokens. Table 1 presents the 12 most frequent LBs found in the discussion section of RAs in applied linguistics ranked by frequency.

Table 1: Top 12 LBs in the Discussion Section of Research Articles in Applied Linguistics.

Rank	Frequency	Range	Lexical bundles	Quan	Qual	Mixed
1	58	39	on the other hand	✓	✓	✓
2	39	22	in the current study	✓	✓	✓
3	38	29	in the present study	✓	✓	✓
4	25	20	at the same time	✓	✓	✓
5	23	16	in the case of	✓	✓	✓
6	21	21	as well as the	✓	✓	✓

7	21	16	it is possible that	✓	✓	✓
8	21	20	**the second research question**	✓		✓
9	20	18	is in line with	✓	✓	✓
10	20	17	**the fact that the**	✓		✓
11	20	18	the first research question	✓	✓	✓
12	20	18	**to the fact that**	✓		✓

The results showed that 12 LBs occurred at least 20 times in the master corpus with a high distribution (minimum 16 different texts). Nine of the top twelve LBs were shared across all three research approaches. The three most frequent LBs identified were *on the other hand, in the current study*, and *in the present study;* each of these occurred more than 38 times across the 150 RAs. *On the other hand* was by far the most frequent LB, occurring 17 more times than the second most frequent LB, *in the current study*.

The frequency of lexical bundles found in the discussion sections of quantitative, qualitative, and mixed–methods RAs was compared. In the quantitative corpus, 168 distinct LBs were identified; in the qualitative corpus, 78 LBs were identified; and in the mixed–methods corpus, 123 LBs were identified. Figure 1 summarizes the counts of types and tokens of these LBs according to the type research in which they appeared.

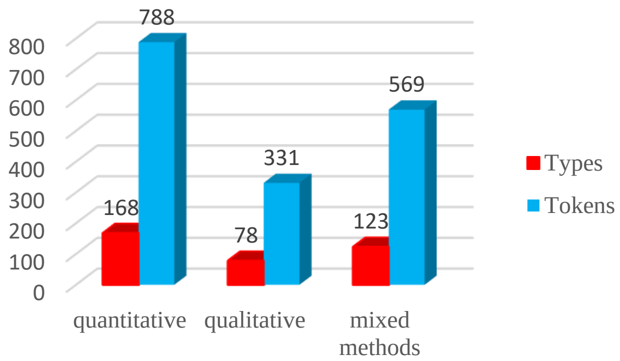

Fig. 1. Types and Tokens of LBs in all the Three Research Methods.

As Figure 1 shows, the most frequent LBs with the most tokens were found in quantitative RAs; the least frequent were found in qualitative RAs. This figure also demonstrates that LBs found in quantitative RAs occurred twice as often as those found in qualitative RAs. In addition, LBs found in mixed–methods RAs were more frequent in terms of types and tokens compared to those used in qualitative RAs.

Table 2 shows the ten most frequent LBs in the discussion sections of quantitative, qualitative, and mixed–methods RAs in applied linguistics.

Table 2: Top 10 LBs in Quantitative, Qualitative, and Mixed–Methods RAs.

Rank	Quantitative	F	Qualitative		Mixed–methods	F
1	on the other hand	28	at the same time	13	on the other hand	22
2	in the current study	18	teachers in this study	9	in the present study	18
3	in the present study	13	in the case of	8	in the current study	13
4	the second research question	13	in the current study	8	is in line with	10
5	it is possible that	12	in the form of	8	in line with the	9
6	the fact that the	12	on the other hand	8	in terms of the	9
7	the results of the	12	as well as the	7	as a result of	8
8	to the fact that	11	in the present study	7	it is interesting to	8
9	of the current study	10	the ways in which	7	the end of the	8
10	the first research question	10	in line with the	6	the fact that the	8

Note. F= Frequency

On the other hand, in the present study, and *in the current study* were the most frequent LBs found in the discussion sections of both quantitative and mixed–methods RAs. In quantitative RAs, *on the other hand* occurred 28 times and appeared in more than one third of the texts. *On the other hand* was ten more times frequent than the second LB*, in the current study,* which occurred 18 times in the quantitative corpus (67,635 words).

The LB *on the other hand* was also the most frequent LB in mixed–methods RAs, occurring 22 times in the 59,508-word corpus. *At the same time* was the most frequent LB in qualitative RAs, occurring 13 times in the 56,838-word corpus. This LB was also widely distributed, occurring in 10 different qualitative texts, but was less frequent in quantitative and mixed–methods RAs.

4.2. Bundles Shared and Not Shared

One hundred and sixty–eight lexical bundles were identified in the discussion sections of quantitative research articles. Seventy–eight LBs were found in the discussion sections of qualitative RAs, and 123 LBs were identified in the discussion sections of mixed–methods RAs. Results showed that 113 (67.26%) of the quantitative LBs, 48 (61.54%) of the qualitative LBs, and 68 (55.29%) of the mixed–methods LBs were unique to their particular corpus. Over half the items in each research approach did not occur at all in the other research approaches.

More than a third of LBs was shared across two or three research approaches. Eighteen LBs were shared across all three research approaches. Table 3 displays these LBs.

Table 3: Shared Bundles Across the Three Research Approaches.

	Quantitative		**Qualitative**		**Mixed–methods**	
Lexical bundles	**F**	**R**	**F**	**R**	**F**	**R**
on the other hand	28	20	8	6	22	13
in the current study	18	10	8	4	13	8
in the present study	13	11	7	5	18	13
it is possible that	12	8	4	4	5	4
the first research question	10	10	4	3	6	5
in the case of	9	4	8	7	6	5
as well as the	8	8	6	6	6	6
at the same time	6	5	13	10	6	5
is in line with	6	6	4	4	10	8
students were able to	6	4	3	3	3	3
in terms of the	5	5	4	4	9	8
in the context of	5	3	3	3	6	6
it is important to	5	4	6	6	4	4
on the one hand	5	4	4	4	4	4
a wide range of	4	4	3	3	4	4
the findings of this	4	4	3	3	3	3
in line with the	3	3	6	5	9	7
in this study the	3	3	6	5	3	3

Note. F= Frequency; R= Range

The greatest affinity was between quantitative and mixed–methods research articles, as they had 31 LBs in common. These LBs did not occur in qualitative RAs (see Table 4). These LBs were mostly either *noun phrase* or *prepositional phrase*.

Table 4: Bundles shared by quantitative and mixed–methods research articles.

	Quantitative		**Mixed–Methods**	
Lexical bundles	**F**	**R**	**F**	**R**
the second research question	13	12	6	6
the fact that the	12	11	8	6
the results of the	12	10	5	5
to the fact that	11	9	8	8
of the current study	10	7	5	5
as a result of	7	6	8	8
be due to the	7	6	6	5
due to the fact	7	7	4	4
in light of the	7	5	7	5
in the use of	7	5	5	4

results of this study	7	5	3	3
the findings of the	7	5	6	5
the results of this	7	5	3	3
in other words the	6	5	7	6
of the importance of	6	6	4	4
over the course of	5	3	7	4
the case of the	5	4	3	3
this is consistent with	5	3	4	3
it is likely that	4	4	5	5
the other hand the	4	4	4	4
the results showed that	4	4	4	4
findings of the study	3	3	4	4
in addition to the	3	3	3	3
in the absence of	3	3	6	5
in the process of	3	3	5	5
may not have been	3	3	5	5
of the use of	3	3	5	5
research question asked whether	3	3	4	3
the end of the	3	3	8	8
the present study the	3	3	3	3

Note. F= Frequency; R= Range

4.3. Structures of Lexical Bundles

Hyland's (2008a) structural taxonomy was used to categorize lexical bundles in terms of their grammatical types. Table 5 displays the distribution and structural classification of LBs found in the discussion sections of applied linguistics RAs. The findings showed that the LBs identified in the present study were mostly restricted to *noun phrases* and *prepositional phrases*.

Table 5: Distribution of Structural Categories of the LBs in Applied Linguistcs RAs.

Structure (example)	**Number (%)**
Noun phrase + of (findings of this study)	13 (15.29%)
Other noun phrases (the first research question)	16 (18.82%)
Prepositional phrase + of (in the case of)	17 (20%)
Other prepositional phrases (in the current study)	17 (20%)
Passive + prepositional phrase fragment (could be attributed to)	5 (5.88%)
Anticipatory it + verb/adjective (it is possible that)	5 (5.88%)
Be + noun/adjectival phrase (are more likely to)	2 (2.36%)
Others (as well as the)	10 (11.77%)
Total	85 (100%)

As Table 5 shows, 29 (34.11%) of the 85 lexical bundles were *noun phrases.* Thirty–four (40%) were *prepositional phrases*; these were the most common LB structure found in the 150 RAs. In total, *noun* and *prepositional phrases* accounted for 74.11% of all the LBs. Five out of the 10 most frequent LBs listed in Table 2 followed *prepositional phrase* structure. Only five LBs

(5.88%) were found that used a *passive + prep phrase fragment* structure. *Anticipatory it + verb/adj* and *be + noun/adjectival phrase* structures were also used infrequently, accounting for less than 9% of all the target bundles.

Table 6 presents the structural classifications of the lexical bundles discovered. The table shows that about half of the *noun phrase + of* structures followed the pattern *the + noun+ of the*. This finding is in line with Chen and Baker (2010), who stated that structures of this type mostly follow this pattern. Nouns used in this pattern include *results, findings, end, content, case,* and *majority*. These LBs are boldfaced in the table. The preposition *in* was also the most frequent preposition used in *prepositional phrases*. *Prepositional phrase* structures starting with the preposition *in* are underlined in the following table.

Table 6: Structural Classification of LBs in the Discussion Section of Applied Linguistics RAs.

Structure	Lexical Bundles
Noun phrase + of	**the results of the, the findings of the, the end of the, the content of the, the case of the, the majority of the,** the results of this, the findings of this, a wide range of, a wider range of, a high level of, findings of this study, results of this study,
Other noun phrases	the first research question, the second research question, the third research question, teachers in this study, learners in this study, the ways in which, the extent to which, the participants in the, participants in this study, the fact that the, the other hand the, the findings suggest that, the results showed that, students were able to, they were able to, this is consistent with
Prepositional phrase + of	<u>in the case of, in the use of, in the context of, in the form of, in the absence of, in the process of, in light of the</u>, on the basis of, on the use of, at the expense of, at the level of, of the use of, of the importance of, as a result of, as a means of, as part of the, over the course of
Other prepositional phrases	<u>in the current study, in the present study, in this study were, in this study the, in line with the, in terms of the, in other words the, in relation to the</u>, of the current study, of the present study, of the fact that, on the other hand, on the one hand, at the same time, to the fact that, between the two groups, with regard to the
Passive + prepositional phrase fragment	could be attributed to, be attributed to the, can be attributed to, be related to the, be explained by the

Anticipatory it + verb/adjective	it is possible that, it is important to, it is interesting to, it is likely that, it was found that
Be + noun/adjectival phrase	be due to the, are more likely to,
Others	is in line with, as well as the, due to the fact, to be able to, did not seem to, may not have been, more likely to be, as well as their, use of the target, could be due to, may not have been

The lexical bundles identified in the discussion sections of quantitative, qualitative, and mixed–methods RAs were structurally classified and then compared. Table 7 shows the distribution of structural classification of LBs in each research approach. As the table demonstrates, LBs used in all three paradigms are mostly *noun phrases* and *prepositional phrases*. The table also shows that *passive + prepositional phrase fragment, anticipatory it + verb/adjective,* and *be + noun/adjectival phrase* patterns are very infrequent in RAs, irrespective of the research approach used.

Table 7: Structural Classification of Lexical Bundles in the Three Research Methods.

Structure	Quantitative	Qualitative	Mixed–methods
Noun phrase + of	23 (16.69%)	11 (14.10%)	20 (16.26%)
Other noun phrases	48 (28.58%)	20 (25.64%)	21 (16.26%)
Prepositional phrase + of	20 (11.90%)	12 (15.39%)	21 (17.07%)
Other prepositional phrases	23 (13.69%)	19 (24.36%)	26 (21.14%)
Passive + prepositional phrase fragment	12 (7.14%)	2 (2.56%)	2 (1.63%)
Anticipatory it + verb/adjective	10 (5.94%)	3 (3.85%)	8 (6.50%)
Be + noun/adjectival phrase	5 (2.98%)	1 (1.28%)	5 (4.07%)
Others	27 (16.08%)	10 (12.82%)	21 (17.07%)
Total	168 (100%)	78 (100%)	123 (100%)

As Table 7 shows, 45.27% of the LBs found in quantitative RAs fall within the category of *noun phrases*, which were almost twice as common as *prepositional phrases* (25.59%). In total, 70.86% of all the LBs followed the structures of *noun* and *prepositional phrases* in quantitative RAs. This table also shows that 79.49% of the LBs in qualitative RAs are *noun* and *prepositional phrases*. *Noun phrases* accounted for 39.74% and *prepositional phrases* accounted for 39.75% of the identified LBs. *Other noun phrases* were the most frequent LBs in both quantitative and qualitative RAs, accounting for 28.58% and 25.64% of all the LBs, respectively. But *other prepositional phrases* were the most frequent LBs in mixed–methods RAs (21.14%). Table 7 also shows that *noun phrases* and *prepositional phrases* accounted for 70.73% of the LBs in mixed–methods RAs. Of these, 32.52% were *noun phrases*. The rest (38.21%) were *prepositional phrases*.

Only a small number of the LBs followed *passive + PP fragment, anticipatory it + verb/adjective,* and *be + noun/adjectival phrase* structures in the three research approaches. The least frequent structure in the quantitative and qualitative RAs were *be + noun/adjectival phrase*. *Passive + prepositional phrase fragment* was the most infrequent structure used in mixed–methods RAs. Table 2 shows that more than half of the 10 most frequent LBs found in the three research approaches were *prepositional phrases.*

More than half of the 18 LBs shared across all the three research approaches were *prepositional phrases*, and they mostly started with the preposition *in* (Table 3). About one fourth of the *noun phrase + of* structures in the three research approaches followed *the + noun + of the* pattern. *Results*, *findings*, *end*, and *case* were the nouns which followed the *the + noun + of the* pattern in quantitative and mixed–methods research approaches. Quantitative and qualitative research approaches did not share any nouns in this pattern. Qualitative and mixed–methods RAs shared the word *content* (i.e., "the content of the"). About half of the *prepositional phrases* in the three research approaches started with the preposition *in*. A chi–square test shows that there was no significant difference in terms of the structure of LBs among quantitative, qualitative, and mixed–methods RAs at the 0.05 level (p = 0.172) (see Table 8).

Table 8: Chi–Square Test for Structural Analysis of LBs Among the Three Research Approaches

	Value	Df	Asymptotic Significance (2–sided)
Pearson Chi–Square	18.816[a]	14	.172
Likelihood Ratio	19.621	14	.143
Linear–by–Linear Association	.217	1	.642
N of Valid Cases	370		

5. Discussion

The present study was conducted in order to (1) identify the most frequent four–word lexical bundles in the discussion sections of research articles in applied linguistics; (2) to ascertain the structural patterns of these LBs; and (3) to determine the similarities and differences among quantitative, qualitative, and mixed–methods RAs with respect to the frequency and structural patterns of their lexical bundles.

Research paradigms can be delineated in terms of their ontological, epistemological, axiological, and methodological standpoints (Creswell, 2009). In addition to these differences, findings from the current study underline the ways in which paradigms differ in terms of the language features used to describe and discuss them. Specifically, the findings showed that with respect to the discussion sections of research articles in applied linguistics, the LBs used in the quantitative, qualitative, and mixed–methods paradigms were largely different: each of the three paradigms had relatively few LBs in common and the frequencies of the LBs across research approaches were dissimilar. For instance, the quantitative articles under consideration contained a wider range of LB types than did the qualitative and mixed–methods studies.

Knowing which language features a particular paradigm requires puts students in a better position to use language with assurance and to position their work within its correct research paradigm. Pang (2010), commenting on what Ivanic (1998) refers to as a "discoursal self" and Hyland (2004) denominates a "professionally acceptable persona," argues that through explicit focus on lexical bundles, novice writers can learn to be true to themselves "in terms of the content that is expressed and at the same time claim the right to be heard in the academic community by using socio-culturally appropriate language" (p. 5). The author goes on to suggest a number of strategies for the explicit instruction of lexical bundles. These include explicitly discussing model texts and pointing out their salient features; training students to examine the choices that expert writers make in response to their rhetorical purposes and to "mine" texts for rhetorical features that might be profitably employed in their own writing; creating semantic maps, both as a pre- and post-reading activity, in order to highlight the scaffolding function of lexical bundles; and having students write sentences using pre-determined lists of LBs, particularly in response to prompts supplied by the teacher. This latter strategy could be especially useful in practicing writing that conforms to the conventions of different methodological paradigms. In the same vein, Byrd and Coxhead (2010) promote the value of class vocabulary boxes and vocabulary notebooks; of encouraging students to deliberately learn the LBs encountered in their reading; and the pedagogical uses of concordancing programs. Many other activities are certainly possible, of course. For instance, students could complete cloze activities in which they are asked to choose between different LBs and discuss which ones seem most appropriate in terms of meaning, coherence, register, etc. Whichever pedagogical strategy is employed, it is important that teachers choose which LBs to teach in a principled way. Frequency, range, teachability/learnability and usefulness should all be considered when making such decisions (Byrd & Coxhead, 2010).

Although the findings presented evidence that different methodological paradigms call for different sets of LBs, the results of a chi–square test showed that all three research approaches used similar types of structural patterns. Four–word LBs starting with *noun phrases* or *prepositional phrases* accounted for more than 70 percent of the LBs identified in each research approach. These findings are in line with the results of previous studies (see Biber et al., 2004; Cortes, 2004; Hyland, 2008a, 2008b). For example, Hyland (2008b) found that *noun phrases* with *of–phrase fragment* were the most common structure across his corpus of academic texts. Cortes (2004) attributed the high frequency of *noun phrases* and *prepositional phrases* to the fact that "academic writing is structurally more phrasal in nature than conversation" (p. 404). On the other hand, the high frequency of *noun phrases* in RAs could be due to the fact that academic writing tends to be "noun–centric" (Swales, 2008, p. v). The structure in the + noun + of was the most frequent pattern in the prepositional phrase + of structure in the three research approaches. The words case, context, absence, process, and use were shared across the quantitative, qualitative, and mixed–methods corpora. This finding is in line with that of Chen and Baker (2010), who found that the structure in the + noun + of accounted for most of the prepositional phrase + of structures.

Despite the fact that different methodological paradigms call for different sets of LBs, all three research approaches examined in the present study used similar types of structural patterns. It is, of course, as important to apprehend the similarities between paradigms as it is to understand the differences. For one, writing teachers can rest assured that if they teach these predominant patterns, they are imparting information that will prove useful regardless of which paradigm their students are working with. Indeed, a discussion of the structural similarities between paradigms might be a good place for teachers to begin in any pedagogic coverage of lexical bundles.

Lexical bundles are, of course, used to serve different functions. Some LBs found in this study were used to identify the relationship between entities (e.g., *statistically significant difference between, significant difference between the, the difference between the, a significant positive correlation, the differences in the*). Such LBs were mostly found in quantitative RAs. *Prepositional phrases* starting with the preposition *in* (e.g., *in the case of, in the context of, in the present study*) play different functional roles, as well. Some of them were used to set limitations and boundaries (e.g., *in the case of, in light of the*) and others were used to identify locations (e.g., *in the current study, in this study the*). These examples suggest that different research approaches may use the same lexical bundles in different functional roles. This issue is deserving of future investigation.

Given the fact that L2 writers use fewer, less varied (Ädel & Erman, 2012; Chen & Baker, 2010), and/or less perfect LBs (Shin, Cortes, & Yoo, 2018) than L1 writers, the current research may be viewed as an initial step in providing teachers and students with new pedagogic tools. Researchers such as Coxhead (2000) and Mizumoto, et al. (2017) have emphasized the usefulness of word and phrase lists in L2 writing pedagogy. Findings from the current research provide a small sample of lexical bundles that might be included in pedagogical materials and point to the need for further investigation, so that more extensive lists may be drawn up. In short, the identification and study of paradigm–specific sets of LBs can provide both L1 and L2 writers with a larger, more varied, and more perfect stock of LBs and thus help enrich their academic writing.

In sum, the distinctive sets of LBs found in the current study show that the language of academic discourse (Biber et al., 2004; Coxhead, 2000; Schleppegrell, 2004) is to a considerable extent paradigm–specific. Therefore, findings provide new evidence for the need to incorporate a focus on research paradigms in academic writing classes for graduate students (Polio, 2012). Specifically, any pedagogical discussion of the textual conventions of different research approaches should be accompanied by awareness-raising activities that, within a framework of communicative writing practice, focus on the use of lexical bundles.

6. Conclusion

The purpose of this study was to identify the most frequent lexical bundles in the discussion sections of RAs in applied linguistics together with their structural patterns. Furthermore, it aimed to investigate the similarities and differences across three groups of research articles belonging to different methodological paradigms with respect to the frequency and structural patterns of their lexical bundles. The results supported the findings by Biber et al. (2004) and Hyland (2008a, 2008b) in that they demonstrated that LBs in academic discourse are mostly phrasal rather than clausal. The findings obtained from analyzing quantitative, qualitative and mixed–methods approaches indicated that the sets of LBs identified across the three research approaches were different, but that they were often structurally identical.

Mastery of academic writing requires a deep understanding of formulaic language (Simpson–Valch & Ellis, 2010). The findings of the present study may be of interest to L2 and EAP educators, then, as they suggest that expert writers working in different methodological paradigms tend to select different types of lexical bundles. The study provided three sets of lexical bundles, categorized in terms of the frequency of their occurrence in quantitative, qualitative and mixed–methods articles. Lessons on research paradigms are, or should be, an established part of academic writing instruction (Polio, 2012), and the study of lexical bundles should form part of such instruction, since familiarity with paradigm–specific LBs offers learners a wider range of rhetorical options. An understanding of paradigm– and genre–specific sets of LBs positions graduate students to adjust their writings in accordance with the norms of the research paradigm they are working in.

The results of the present study should be treated with caution as more definite statements about the prevalence and use of lexical bundles within different methodological paradigms would necessitate larger corpora. Nonetheless, by providing preliminary evidence concerning lexical differences in quantitative, qualitative, and mixed–methods articles, the present study introduces a number of research topics that could be taken up in future research. For example, further research which delves more deeply into the LBs unique to each research approach is called for. The factors affecting the choice and use of LBs in different paradigms is another area of interest. Furthermore, a better understanding of the roles LBs play in academic discourse could be achieved by investigating their discourse functions.

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Genre Analysis of the Method Sections in Applied Linguistics Research Articles: A Cross-Linguistic Study

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Abstract

The present study aimed to examine the rhetorical structure of the method sections of English and Persian research articles. To this end, 300 method sections were randomly selected from research articles published in established international English, Iranian local English, and Iranian local Persian journals in Applied Linguistics from 2010 to 2016. Following Lim's (2006) model, we analyzed the articles for the generic patterns in the method section. Findings showed that the writers of Persian research articles used a significantly greater number of moves in developing the research method section than those of international and local English articles. Moreover, despite variations, there were similarities between international and Iranian local English journals in terms of utilizing moves and steps.

Keywords: applied linguistics; genre; method sections; research articles; rhetorical structure

Introduction

Writing in general, and writing for academic purposes, is one of the most challenging skills for nonnative authors as well as novice native authors. With the advancement of international research collaboration as well as some universities' obligation to publish research articles as a requirement for doctoral defenses or academic members' job promotion (i.e. Iran), it is suggested that writing courses at tertiary levels be tailored "to meet the needs of students encountering difficulties in associating linguistic features with communicative functions of academic texts" (Lim, 2006, p.286). For success in scholarly writing, both the nonnative speakers of English and native speakers ought to be aware of the conventional rhetorical organization employed in writers' scientific field of interest (Hu & Liu, 2017; Kanoksilapatham, 2015; Loi & Evans, 2010). Just as anywhere else, this is true for Iranian scholars too. As Iranian scholars, we therefore are particularly interested in writing behaviors exhibited by not only Iranian researchers but also international colleagues.

Previous research in English and Persian has shown that authors have cultural preferences for employing certain rhetorical patterns (Farnia & Barati, 2017; Jalilifar & Mohammadi, 2014). There is also evidence that Persian authors' first language rhetorical patterns in research articles and thesis differ from English native structures, e.g. dissertation acknowledgements (Jalilifar & Mohammadi, 2014), introduction and discussion sections of medical journals (Sayfouri, 2010). The reason for the variations in academic publications written by native English and Iranian nonnative speakers of English can be due to writers' cultural and academic background in addition to their English language competency levels (Jalilifar & Mohammadi, 2014).

These research results are certainly informative; however, the evidence available appears to be limited for a fuller understanding of authors' tendencies. More research is required to elucidate similarities and differences between authors from different backgrounds as well as authors writing in different languages. We acknowledge the challenge posed by a formidable task, especially for those seeking to describe research articles as a whole. We believe in the value of the bottom-up approach and suggest analysis of sub-sections in research articles across languages. To this end, we chose to focus on the method section of Applied Linguistics research articles in English and Persian. We chose to focus on this discipline due to our own educational and professional backgrounds. Applied Linguistics has been the focus for this study since English language majors (i.e. English Literature, Translation Studies, Applied Linguistics, English Language Teaching) are the only majors whose medium of instruction are in English language at the tertiary level in Iran.

The method section is in focus since a lack of reasonable well-founded method sections may not convince the audience with the validity of data collection procedures which leads into findings. Moreover, the method section links research article introductions to results, justifying the obtained findings are confirmed by theoretical background. Also, research methodology in Social Science and Humanities (which includes Applied Linguistics) is of particular importance due to the readership's interests (Swales & Feak, 1994).The method section is important because it is used by authors "to strengthen the credibility of their findings to be reported subsequently in the Results section, to stifle potential criticisms, to avoid expected challenges to their research designs, and to ward off possible doubts about both their results and related interpretations" (Lim, 2006, p. 284). In light of these and due to a dearth in studies on the rhetorical patterns of method sections compared to other sections of research articles (Pramoolsook, Li, & Wang, 2015), this study aims to examine the similarities and differences between local Persian, local English and English international research article method sections in terms of the genre structures of moves and steps.

Review of Literature

Genre and Approaches to Genre

Genre, as a communicative event associated with particular settings (Flowerdew, 2013), has received considerable attention in the last decades. Genres can be understood by their community users (Bhatia, 1993, 2004; Swales, 1990, 2004, cited in Flowerdew, 2013), e.g. lectures by teachers and students, news articles by journalists and newspaper readers. Accordingly, mastering professional genres such as writing an academic article requires a greater deal of expertise into specific communities.

There are three approaches to the study of genre. Amore sociological approach to genre has started in North America with a more linguistic approach in Great Britain and Australia, all of which have contributed pedagogically to Applied Linguistics and language education (Flowerdew, 2013). In a classification according to the three approaches, or schools, genre was categorized into the ESP school, the Sydney school and the New Rhetoric (Hyon, 1996).

The ESP (English for Specific Purposes) school was started by Swales (1990) and Bhatia (1993) whose focus was on pedagogic and material development, and was initiated to connect the communicative purposes to properties of texts (Flowerdew, 2013). Swales (1990, p. 58) defines genre as follows:

> A genre comprises a class of communicative events, the members of which share some set of communicative purposes. These purposes are recognized by the expert members of the parent discourse community, and thereby constitute the rationale for the genre. This rationale shapes the schematic structure of the discourse and influences and constrains choice of content and style. Communicative purpose is both a privileged criterion and one that operates to keep the scope of a genre as here conceived narrowly focused on comparable rhetorical action. In addition to purpose, exemplars of a genre exhibit various patterns of similarity in terms of structure, style, content and intended audience.

Derived from Hallidayan systemic functional linguistics, the focus of Sydney school's methodology was to identify the correlation between form and function of a specific linguistic situation. Both the ESP and the Sydney school consider the notion of communicative purposes as an essential part of genre. Pedagogically, however, while the focus of ESP school has been on tertiary level contexts, the focus of the Sydney school has been on primary schools as well as the secondary and indigenous contexts. Despite this difference, the former two have more in common than the Rhetorical school whose focus is more on social purposes within specific situations. Methodologically speaking, the Rhetorical school takes a more ethnographic approach than a linguistic to study genre. Pedagogically, it is mainly confined to genre in academic and professional contexts.

The ESP school is best known by Swales's (1990, 2004) CARS (Create A Research Space) model, posited initially for research articles introduction sections, suggesting stages of sub-moves or steps through which scholars contributed to the field. In other words, the communicative purposes are represented in a stages or sequence manner, technically referred to as moves or steps, which can be either optional or obligatory, vary in sequencing and repetition, or one might be embedded into another (Swales, 1990).Traditionally, studies on move analyses have been used as a means to train novice writers in expanding their knowledge in conventions in scientific and academic writings (Cotos, Huffman, & Link, 2017). As a result, many studies have been conducted to investigate the textual characteristics across different disciplines, cultures and languages. Swales' (1990) renowned study on research article introduction sections prompted further studies on the generic analysis of different sections of academic genres either cross-culturally or cross-disciplinary. There are many empirical international studies on different section of research articles or theses including abstracts (e.g. Friginal & Mustafam, 2017; Kanoksilapatham, 2013; Pho, 2008; Tankó, 2017), introductions (e.g. Hirano, 2009; Kawasee, 2018; Samraj, 2002, 2005; Swales, 2004), methods (e.g. Bruce, 2008; Cotos, Huffman & Link, 2017; Khamkhien, 2015; Lim, 2006; Peacock, 2011; Moreno & Swales, 2018; Zhang & Wannaruk, 2016), results (e.g. Lim, 2010; Yang & Alison, 2003), discussions (e.g. Amnuai & Wannaruk, 2013; Liu & Buckingham, 2018; Peacock, 2002), and conclusions (e.g. Yang & Alison, 2003).

There are a number of studies on different sections of research articles written by Iranian scholars e.g. abstracts (e.g. Behnam & Golpour, 2014; Ghasempour & Farnia, 2017), introductions (e.g. Farnia & Barati, 2017; Behnam & Nikoukhesal, 2017; Jalilifar & Golkar, 2016; Validi, Jalilifar, Shooshtari, & Hayati, 2016; Rahimi & Farnia, 2017), methods (e.g. Ebrahimi, 2016; Mozaheb, 2015), results and discussions (Amirian, Kassaian & Tavakoli, 2008; Atai & Fallah, 2004; Ershadi & Farnia, 2015; Hashemi & Gohari, 2016; Khorramdel & Farnia, 2017), and conclusions (e.g. Najar & Amjadiparvar, 2016; Zamani & Ebadi, 2016).

As is evidenced by the above-mentioned studies, Swales' (1990) genre analysis has had "a tremendous effect on pedagogical writing, particularly in academic and, especially, research-related fields" (Flowerdew, 2015, p. 102), specifically with the rapid growth in the number of academic publications. As such, there has been a need to teach the students the conventions in writing research articles in different disciplines and the communicative moves the writers require to make in order to present their main points in their research articles (Peacock, 2002). For instance, regarding authors' personal observation in analyzing the rhetorical structures in computer science research articles (i.e. Ershadi & Farnia, 2015), it was found that while most articles in Applied Linguistics follow Swales' (1990) IMRD (Introduction-Results-Method-Discussion) sections, articles in computer science mostly lack the discussion section. Also, Graves, Moghaddasi and Hashim (2013) reported that Mathematics research articles do not have method sections.

Swales' motivation in analyzing texts to develop textual schemes was to help advanced non-native English students who wished to read and write research articles in English (Moreno & Swales, 2018). In fact, the prominent aim of these text analyses was to identify moves as "the functional unit in a text, being related to the overall task, which is used to identify the textual regularities in certain genres of writing" (Ding, 2007, p.369-370) and it is the unit which links the author's purposes to the content they aimed to communicate (Dudley Evans & St John, 1998). Steps are the text fragments whose function is to describe the content of the moves it relates to (Biber, Conner & Upton, 2007, p. 24) or "a lower level text unit than the move that provides a detailed perspective on the options open to the writer in setting out the moves in the introductions" (Dudley Evans & St John, 1998, p. 89). In other words, "the moves are essentially options open to the writer who will build his or her argument through the careful choice and ordering of these moves into cycles" (Dudley Evans & St John, 1998, p. 90).

The Method Section of Research Articles

Among studies on different sections of research articles, introduction sections have been extensively studied while there is a dearth of research on the method section (Pramoolsook, Li & Wang, 2015; Lim, 2006) compared to the other sections of the research article. Moreover, there is little investigation of the cross-linguistic type or native/nonnative differences, the results of which could definitely contribute to teaching ESP. Consequently, this study focused on investigating the method sections of Applied Linguistics research articles published in international and local English and Persian journals. So far, different models were created to analyze the method sections of a variety of disciplines such as engineering, chemistry, medical science; management, etc. These are summarized in Table 1.

Table 1: Previous Models to Analyze the Method Section

Authors	Discipline	Moves
Kanoksilapatham, 2005	Biomedical Engineering	**Move 1: Describing research procedures** *Step 1: Announcing objectives* *Step 2: Specifying protocolized procedures* *Step 3: Detailing methodological procedures* *Step 4: Providing background of procedures* *Step 5: Justifying a procedural decision* *Step 6: Declaring ethical statements* **Move 2: Featuring methodological issues** *Step 1: Describing participants, instruments, materials* *Step 2: Setting apparatus* *Step 3: Identifying data sources* **Move 3: Reporting and consolidating findings** *Step 1: Announcing findings* *Step 2: Interpreting findings* *Step 3: Comparing findings* *Step 4: Explaining findings*
Lim, 2006	Management	**Move 1: Describing data collection procedure/s** Step 1: Describing the sample (a) Describing the location of the sample (b) Describing the size of the sample/population

		(c) Describing the characteristics of the sample (d) Describing the sampling technique or criterion Step 2: Recounting steps in data collection Step 3: Justifying the data collection procedure/s (a) Highlighting advantages of using the sample (b) Showing representativity of the sample **Move 2: Delineating procedure/s for measuring variables** Step 1: Presenting an overview of the design Step 2: Explaining method/s of measuring variables (a) Specifying items in questionnaires/databases (b) Defining variables (c) Describing methods of measuring variables Step 3: Justifying the method/s of measuring variables (a) Citing previous research method/s (b) Highlighting acceptability of the method/s **Move 3: Elucidating data analysis procedure/s** Step 1: Relating (or recounting) data analysis procedure/s Step 2: Justifying the data analysis procedure/s Step 3: Previewing results
Nwogu, 1997	Medical	Move 1 : Describing Data Collection Procedure Move 2 : Describing Experimental Procedure Move 3 : Describing Data-Analysis Procedure
Huang, 2014	Medical	**Move 1 : Describe study materials** *Step 1 : Describing type of data collection* Step 2 : *Describing the source for data collection* **Move 2 : Provide inclusion criteria** *Step 1 : Describing the sample* *Step 2 : Describing the characteristics* **Move 3 : Describe procedures** *Step 1 : Taking the measurements* *Step 2 : Justifying the procedures* **Move 4 : Present the analysis of the experiment** *Step 1 : Statistical test techniques*
Peacock, 2011	Biology, Chemistry, and Physics	Move 1 Subjects / materials Move 2 Location Move 3 Procedure Move 4 Data analysis Move 5 Limitations Move 6 Research aims/questions/hypotheses Move 7 Overview

These models were used in the several follow-up studies, a number of which are described below.

In a corpus-based analysis, Musa, Khamis, and Zanariah (2015) examined the method sections of 60 biomedical engineering Scopus-indexed research articles using Huang's (2014) classification. The results showed the occurrence of common moves in both medical and biomedical engineering research articles. Their findings showed that besides the moves presented in Huang's (2014) model (see Table 1), two new steps were found in both medical and biomedical engineering as Move 2 Step3 *describing the preliminary actions* and in Move 3 Step 3*referring to previous studies*. In other words, their findings suggest that no single model can be used to analyze the method section of research articles for different disciplines. Moreover, the most frequent verbs in moves of the method sections were reported, the three most frequent of which were *measured*, *described*, and *assumed*.

Mozaheb (2015) investigated the method and results sections of 40 medical science research articles written in English by Iranian nonnative speakers of English and native speakers of English. Using Nwogu's (1997) model, they found no statistically significant difference in the use of moves and steps in their corpus. In other words, Iranian nonnative speakers and English native speakers followed similar moves and steps in developing method and result sections. In a cross-linguistic cross-disciplinary study, Pramoolsook, Li, and Wang (2015) examined the method sections in marketing and management research articles using Lim's (2006) model. Their findings revealed variations in the two corpora which were attributed to the discipline-related publication requirements. Moreover, the authors reported some discrepancies between the model and texts they analyzed, suggesting that writers in different disciplines may use different patterns of rhetorical structure to write the method section as found in other studies (e.g. Musa, Khamis,& Zanariah, 2015), confirming each discipline has its own characteristics which differentiate it from others (Kanoksilapatham, 2005)

In another study, Khamkhien (2015) examined the rhetorical features of 25 English research article introduction and method sections in the field of Applied Linguistics with reference to Swales' (1990, 2004) revised model for introduction sections. These articles were selected regardless of the authors' first language. Khamkhien's (2015) findings showed variation in the generic pattern and linguistic features in the two corpora under study, in line with the idea that organizational patterns of research article sections are discipline-specific and research in each discipline could provide a different organization of moves. Morales (2016) examined 30 method sections in high- and low- impact Applied Linguistics journals using Peacock's (2011) model. The findings demonstrated variations in number of words and paragraphs used in the corpora. Moreover, no obligatory move was found in low-impact journals. In other words, no moves appeared in every research article in the corpus.

Other related studies include Lim's (2006) study of management research article, Zhang and Wannaruk's (2016) study of education research articles, Li and Ge's (2009) study of medical research article, Hunag’s (2014) study of medical science research articles, and Peacock’s (2011) study of eight disciplines of physics, biology, chemistry, environmental science, business, language and linguistics, law, and public and social administration.

A review of the related research reveals the need for further research on genre analysis across various disciplines and languages, as little is yet known about “the general patterns of discourse organization across a large representative sample of texts from a genre” (Upton & Cohen, 2009, p. 587).Although several investigations have already addressed the method sections of research articles, further examinations of rhetorical organizations of method sections across disciplines seem to be necessary. Taking a genre analysis approach and due to the importance of cross-cultural studies, this study examines the similarities and differences between local Persian, local English and English international research article method sections in terms of the genre structures of moves and steps.

Method

Corpus

The corpus consisted of 300 randomly selected research articles published during 2010-2016 in international English journals. Of these articles, 100 were written by international writers, 100 were by local Iranian English journals, and 100 local Persian journals published in Iran and the authors of which were all Iranian scholars. The size of international corpus was 115,425 words, local Iranian English journal was 87,156 words, and the size of local Persian journals was 104,483 words. The English journals were randomly selected from those published in reputable journals and indexed in Social Science and Humanities index. As ‘a well-established tradition in RA genre analysis’ (Ruiying & Alison, 2004, p. 265), we selected those articles whose organization followed Swales’s (1990, 2004) IMRD (Introduction, Method, Results and Discussion) sections, making sure all articles were empirical-based studies, and have an explicit method section.

Data Analysis

The corpus was analyzed using Lim’s (2006) classification for the method section to examine the rhetorical structures employed in developing method sections in Applied Linguistics. Lim’s model is among the few ones “with a detailed move-and-step analysis linked to linguistic features, following the ESP approach to genre” (Bruce, 2008, p. 39).

The model consists of three major moves, namely, describing data collection/ procedures, delineating procedure(s) for measuring variables, and elucidating data analysis/ procedures (see the description in the Results.). According to Tseng (2018), a move can be a clause, one or more sentences, a paragraph or longer. In this study, the meaning of a move in relation to the context it is used was taken into consideration. Each sentence was read and then coded based on Lim's (2006) model.

In order to minimize the risk of subjectivity and ensure the reliability, two raters the corpora were coded by two raters, yielding an inter-rater reliability coefficient of 0.9. The two raters discussed the cases where there was disagreement on coding. After the data were codified, they were entered into SPSS software package version 19 for further descriptive (i.e. frequency) and inferential (i.e. chi-square) analyses. Moreover, following Kanoksilapatham's (2005) criterion for the classification of the occurrence of moves in research articles into obligatory, conventional, and optional, any move which occurred in 100% of the research articles was considered obligatory, below 60% regarded as optional, and ranges from 60-99% as conventional.

Move1describing data collection/procedure deals with samples/subjects, data sources, participant/corpus selections, data collection, and settings. Lim's (2006) Move1 is similar to Nwogu's (1997) Move 4 in the method section. This move included three major steps, namely, describing the sample, recounting steps in data collection, and justifying the sample.

Step1describing the sample, consists of four subparts, namely: 1) describing the location of the sample, which is often given at the beginning of the method section where "locative adjuncts are used to specify the sites where the samples were collected" (Lim, 2006, p. 287); 2) describing the size of the sample/population; 3) describing the characteristics of the sample, including sex, age, number, level of proficiency, and other significant features; 4) describing the sampling technique or criterion, including information such as how or whether the data were collected randomly, voluntarily, purposively, etc.

In Move 1 Step2 recounting steps in data collection the writer chronologically recounts a series of steps taken in the overall procedures. According to Lim (2006): "[i]n this step, writers do not restrict their description of data collection procedures by merely specifying a sample's characteristics; they may also use the past simple tense to chronologically recount a series of steps taken in the overall procedures" (p.290).To describe this step, procedural verbs such as *was conducted* or *were mailed* are used to explain this step. Passive verbs are used more frequently than active verbs in this section (Deveci & Nunn, 2018; Lim, 2006).

Move1 Step3 justifying the data collection procedure(s) includes statements on (1) highlighting the advantages of using sample, and (2) showing representativity of the sample. In fact, this step explains "the characteristics and acceptability of the procedures" (Lim, 2006, p. 291). Moreover, to indicate the justifiability of the data collection procedure, the researchers refer to the methods in the previous studies. In Move 1 Step 3A highlighting advantages of using the sample the writer highlights the advantages of using the sample in comparison to other samples used in previous studies. To express this move, the writer uses positive connotative words such as 'advantage', 'representative', 'suitable', 'appropriate' to highlight the advantage of the sample. Move 1 Step 3B showing representativity of the sample indicates the extent to which the sample is representative of the population.

In Move2 delineating procedure(s) for measuring variables delineating procedure(s) for measuring variables, writers explain how the dependent and independent variables were measured. The participants in Lim's (2006) study found writing Move 2 the most difficult part of the method section. This move can be found under subheadings such as 'research design', 'measures', and 'measurement of the independent variables' (Lim, 2006). This move is composed of Step1, presenting an overview of the design, Step2, explaining method(s) of measuring variables, and Step3, justifying the method(s) of measuring variables.

In Move3 elucidating the data analysis procedure, the writer adds a description to some statistical techniques to clarify the data. This move has three steps: Step1 relating or recounting data analysis procedure(s), and Step2, justifying the data analysis procedure(s). According to Lim (2006), Move 3 Step1 relating data analysis procedure/s is similar to Move1 Step2 and Move2 Step2 "in the sense that steps taken in the process of data analysis are usually recounted in chronological order (p. 298)".In Move 3 Step2 justifying the data analysis procedures, the rationale behind selecting certain data analysis procedures is explained, the purpose of which is to justify the appropriateness of the data analysis technique (Lim, 2006). Move 3 Step3 previewing results "resembles certain steps found in the subsequent results section in that the data reported appear like preliminary results that can be further interpreted to produce specific findings" (Lim, 2006, p.300).

Results

In this section, the results are presented in light of Lim's (2006) model.

Move 1: Describing Data Collection/ Procedure

This move includes three major steps: Step1 describing the sample, Step2 recounting steps in data collection, and Step3 justifying the sample. The results are presented in Table 3.

Table3: Frequency of Move 1 Describing Data Collection Procedures and its Steps in the Corpus

Steps	Corpus	EIC		PLC		ELC		Df	x2
		F	%	F	%	F	%		
Step 1 Describing the sample	1A Describing the location of the sample	80	80	100	100	80	80	2	.00*
	1B Describing the size of the sample/population	100	100	100	100	100	100	2	--
	1C Describing the characteristics of the sample	100	100	100	100	100	100	2	--
	1D Describing the sampling technique or criterion	55	55	96	96	62	62	2	.00*
Step 2	Recounting steps in data Collection	26	26	25	25	30	30	2	.70
Step 3 Justifying the Data Collection Procedure/s	3A Highlighting advantage of using the sample	50	50	26	26	30	30	2	.00*
	3B Showing representativity of the sample	23	23	37	37	32	32	2	.09
Total number of instances		434		484		434		2	.00*

Note: ELC: English International Corpus, PLC: Persian Local Corpus, ELC: English Local Corpus

Move 1 Step 1: Describing the Sample

Step1describing the sample consists of four substeps: (1) describing the location of the sample, (2) describing the size of the sample/population, (3) describing the characteristics of the sample, and (4) describing the sampling technique or criterion.

A. Describing the Location of the Sample

Table 3 indicates that Step A occurred in 80% of the English native speaker and English nonnative speaker corpora, while it was found in 100% of the Persian corpus. Following Kanoksilapatham's (2005) classification, this step is found as conventional in English native speaker and English nonnative speaker corpus but obligatory in Persian corpus.

As shown in Table 3, there is a statistically significant difference in the use of Move1 Step1 in the corpora ($p= 0.00<0.05$). In other words, this step was used more frequently in the Persian corpus than the other two corpora. Some examples from the English International corpus (henceforth, EIC), Persian local corpus (hence PLC), and English local corpus (henceforth, ELC) are as follows:

[EIC] (1) This study took place over the course of a semester in three topic-based courses for English majors at <u>a university in South Korea</u>.

[ELC](2) The participants include 12 undergraduate students studying English Translation at <u>Payame Noor University of Bonab</u>.

[PLC](3) جامعه آماری دراین پژوهش شامل کلیه دانش آموزان ابتدايي پایه های اول تا ششم نواحی پنجگانه آموزش و پرورش شهر اصفهان بود.

(3)[The population of the study consisted of all levels one to six primary school students in all five districts of <u>Education of Esfahan.]</u>

B. Move 1 Step 1B: Describing the Size of the Sample / Population

According to Table 3, Move1 Step1Bdescribing the size of the sample/population occurred in 100% of the three corpora, and is thus considered as obligatory in the three corpora. In other words, all of the research articles reported the size of the corpus, presenting information such as how many participants or how many texts were analyzed in the study. Examples from the corpus are as follows:

[EIC](4)It comprised <u>42 students</u> in Intermediate English Conversation.

[ELC](5)The study was conducted with <u>30 advance EFL learners</u>.

(6)[PLC] تعداد این شرکت گنندگان <u>329 نفر</u> بوده است.

(6) *The number of <u>participants was 329</u>.*

C. Move 1 Step 1 C: Describing the Characteristics of the Sample

The findings showed that this move occurred in all of three corpora. In other words, this step was found obligatory in the present corpora. Some examples from the corpus are as follows:

> *[EIC] (7) Participant were (<u>64 girls and 66 boys) aged 4.5-5.6</u> (M = 5.0 years, SD =.3). All children were in the second term of their first year of school.*
>
> *[ELC](8) Advanced Iranian learners of English <u>(average age: 29.60 range 21-44),</u> all of whom had been formally educated in English.*
>
> *(9) [PLC].در زمان انجام پژوهش تمامی شرکت کنندگان دانشجوی سال دوم دوره ی کارشناسی بودند*
>
> *(9) At thetime of the study, all participants <u>were second year bachelor students</u>.*

D. Move 1 Step 1 D: Describing the Sampling Technique or Criterion

The findings revealed that writers in 55% of English international research articles, 62% of English local articles, and 96% of Persian local articles reported the sampling technique or criterion. Following Kanoksilapatham's (2005) classification, describing the sampling technique or criterion is found as conventional in local Persian corpus and optional in international and local English corpus. Results of the chi-square test displayed significant differences in the use of this step in the corpus ($p= 0.00< 0.05$).

Examples from the corpus are as follows:

> *[EIC](10) Participation was <u>voluntary</u>.*
>
> *[ELC](11) They took part in this study <u>voluntarily.</u>*
>
> *(12)[PLC].نمونه از طریق نمونه گیری خوشه ای چند مرحله ای انتخاب شد*
>
> *(12) The sample was selected through <u>several cluster sampling.</u>*

Move 1 Step 2: Recounting Steps in Data Collection

The findings showed that this step appeared in 26% of the English international corpus, 30% of the English local corpus, and 25% of the Persian local corpus. In other words, it is found as optional in the three corpora.

Examples from the corpus are as follows:

> *[EIC] (13) The arguments encountered in the present corpus <u>were categorized</u> into strengthening and author's position (categories A, B, and C below)*
>
> *[ELC] (14) The participants in the experimental group <u>were helped</u> to make a mental link between the Kurdish key words and the new English words*
>
> *(15)[PLC]* پژوهشگران براي بررسي اهداف تحقيق، در مرحلة اول، به زبانآموزان در هر سه كلاس در طي 20 جلسه <u>آموزش دادند</u> تا با وضعيت كلي آنها بيشتر آشنا شوند وسپس ميزان مهارت و كيفيت يادگيري آنها را <u>مطالعه كردند</u>.
>
> *[PLC] (15) To investigate the research objectives, first, the researchers taught learners in all three classes during 20 sessions in order to become more familiar with their general situation and then study their skills and quality of learning.*

Move 1 Step 3: Justifying the Data Collection Procedure(s)

This move includes statements on (1) highlighting the advantages of using sample, and (2) showing representativity of the sample.

A. Move1 Step3A: Highlighting Advantages of Using the Sample

The findings showed that this step appeared in 50% of the English international corpus, 30% of the English local corpus, and 26% of the Persian local corpus. According to Kanoksilapatham's (2005) classification, this step is found as optional in the three corpora.

Results of chi-square analyses displayed a statistically significant difference in the use of this step in the corpus, as the p-value is less than α ($p = 0.00 < 0.05$).

Examples from the corpus are as follows:

> *[EIC] (16) <u>While other research specifically addresses the textual elements of the sampled posts</u> (Hunt and Koteyko, 2015), the analysis below is concerned with 72 posts in the sample that represent diabetes multimodally through the combination of images and text.*

[ELC] (17) Every effort was made that only first- and second-year students fill in the survey because the third- and fourth-year students supposedly cope with more specialized credits that might or might not have a focus on learning general English language.

(18) [PLC] جامعه آماري پژوهش، کليه دانشجويان تحصيلات تکميلی دانشـگاه آزاد اسـلامی واحـد سـاري در سـال 1391 به تعداد 2260 نفر می باشند.

[PLC] (18)[The statistical population of the study consists of all graduate students of Islamic Azad University of Sari, which is 2260 people, in 2012.]

B. Move 1 Step 3 B: Showing Representativity of the Sample

Results showed that this step was found in 23% of the English international corpus, 32% of the English local corpus, and 37% of the Persian local corpus. In other words, this step is found to be optional in the three corpora.

Examples from the corpus are as follows:

[ELC] (19) The primary participants in this research were six multilingual doctoral students from a wide range of linguistic and cultural backgrounds. This paper only focuses on four of these participants: Mike, Fang, Jewel and Rice

[EIC](20) There were 12 teachers of PI4 (which is the last term of Pre-Intermediate level in English after that students were supposed to take Cambridge's PET mock exam) from Hermes institute of science and technology in Tehran (this institute was chosen because of its various branches).

(21) [PLC] از بين آنهاو از طريق جدول کرجسی و مورگـان، حجـم نمونـه 331 نفرتعيين شد که به صورت تصادفی ساده، به عنوان نمونه تحقيق انتخـاب شـدند.

(21) [PLC] From the sample and based on Krejcy and Morgan's tables, the sample size was determined as 331 that were selected through simple random sampling.

Move 2: Delineating Procedure(s) for Measuring Variables

This move was composed of Step1presenting an overview of the design, Step2explaining method(s) of measuring variables, and Step 3justifying the method(s) of measuring variables. Table 4 presents the distribution of Move2 and its steps in the corpus.

Table 4: Frequency Distribution of Move2 and its Steps in the Corpus

Steps Corpus		EIC		PLC		ELC		df	X2
		F	%	F	%	F	%		
Step 1	Presenting an overview of the design	72	72	92	92	68	68	2	.00*
Step 2 Explaining Method/s of Measuring Variables	2A Specifying items in questionnaires/ databases	95	95	100	100	95	95	2	.07
	2B Defining variables	80	80	86	86	76	76	2	.19
	2C Describing methods of measuring variables	95	95	98	98	95	95	2	.45
Step 3 Justifying the Method/s of Measuring Variables	3A Citing previous research method/s	62	62	85	85	70	70	2	.00*
	3B Highlighting acceptability of method/s	40	40	70	70	65	65	2	.00*
Total number of instances		444		531		469		2	.00*

Note: ELC: English International Corpus, PLC: Persian Local Corpus, ELC: English Local Corpus

Move 2 Step 1: Presenting an Overview of Design

The findings showed that this move occurred in 72% of the English international corpus, 68% of the English local corpus, and 92% of the Persian local corpus. In other words, this step is found as conventional in the three corpora. Results of chi-square showed statistically significant difference in the use of this step in the corpora, as the p-value is less than α ($p= 0.00<0.05$). Examples from the corpus are as follows:

> *[EIC] (20) Using the mixed-methods approach in this study, both quantitative and qualitative research was conducted and data from both forms of research were analyzed (Creswell, 2014).*
>
> *[ELC] (21) The researchers employed a pre-experimental, one group, and pretest posttest design.*
>
> *(22)[PLC] این پژوهش از نوع توصیفي پیمایشي است.*
>
> *[PLC] (22)The research is of descriptive survey type.*

Move 2 Step 2: Explaining Method(s) of Measuring Variables

This move consists of three statements on: (1) specifying items in questionnaires/databases, (2) defining variables, and (3)describing methods of measuring variables.

A. Move 2 Step 2 A: Specifying Items in Questionnaires/Databases

The findings showed that this step was used in 95% of the English international and local corpus and 100% of the Persian local corpus. This step was present in 95% of the English RAs and Iranian nonnative and 100% in Persian RAs of method sections and is found as conventional in the nonnative and native English and obligatory in the Persian corpus in three groups of corpora.

Examples from the corpus are as follows:

> *[EIC](23) The questionnaire contained four sections of scaled items. The first section included five items to assess the realism of the vignettes (e.g., ''A situation like this could happen in real life.'').*
>
> *[ELC](24) The DCT employed for the present study was adopted from Blum-Kulka and Olshtain (1984). It consisted of 6 situations for the three power status levels of high, low and equal.*

(25) [PLC]. این پرسشنامه یک ابزار خود گزارشی است کـه میـزان تمایل به تفکر نقادانـه را مـیسـنجد. داراي 33 عبـارت و سـه زیـر مقیـاس خلاقیـت (11 عبـارت)، بالندگی (9 عبارت)و تعهد (13عبارت) است.

(25) [PLC] This questionnaire is a self-report tool that measures the inclination of critical thinking. It has 33 items with three sub-scales of creativity (11 words), elevated (9 phrases), and commitment (13 phrases).

B. Move2 Step2B: Defining Variables

This step applied in 80% of the English International corpus, 76% the English local corpus, and 86% of the Persian corpus and hence is found as conventional in the three corpora. Despite the difference, the analyses showed no significant difference in the use of this step in the corpora, i.e. the p-value is more than α (p= 0.19>0.05). Examples from the corpus are as follows:

[EIC](26)We examined the data for <u>common themes</u>, and 12 articles were studied in detail to identify <u>the appropriate voices</u> for <u>illustrative analysis</u>.

[ELC](27) Thematic analysis was employed to identify, analyze and report the main patterns within and across the data

[PLC] (28) در این پژوهش، با استفاده از مقیاس جهتگیریهاي یادگیري زبانـنـولز و همکــاران، (2000)<u>جهـتگیــریهــاي انگیزشــي دانشجویان</u> مورد سنجش قرار گرفت).

(28) [PLC] In this research, using the scale of Noolz and et al.'s (2000) orientations learning scale, students' motivational orientation were measured.

C. Move2 Step2C: Describing Methods of Measuring Variables

The findings showed that this move appeared in 95% of the English International and local corpus and 98% of the Persian corpus. Following Kanoksilapatham's (2005) classification, describing methods of measuring variables is found as conventional in the three corpora.

[EIC] (29) This test comprises 8 pictures with dots (3, 4, 7, 6, 15, 12, 14, 11) and the child was asked to count how many dots are presented on each picture and provide the cardinal value of the number of dots.

[ELC] (30) In this study, the participants are asked to read sets of sentences and report on semantic acceptability of each sentence (processing assessment) and then recall the final word of each sentence when prompted (storage assessment).

(31) [PLC] در این مقیاس، از مشارکت کنندگان خواسته میشود تامیزان اصمینان خود را در انجام موفقیت آمیز هریک از 27 تکلیف دانشگاهی بر اساس یک مقیاس ده درجه ای لیکرت مشخص نمایند.

[PLC](31) In the questionnaire, the participants were asked to identify their level of self-confidence in successful fulfillment on each of the 27 university tasks on a ten-point Likert scale.

Move 2 Step 3: Justifying the Method(s) of Measuring Variables

This step consists of two sub-sections including (1) citing previous research method/s, and (2) highlighting acceptability of method(s).

A. Move 2 Step 3 A: Citing Previous Research Method/s

The findings showed that this step appeared in 62% of the English international corpus, 70% of the English local corpus, and 85% of the Persian corpus and is found as conventional in the three corpora. Chi-square analyses showed a significant difference in the use of this step in the corpora, e.g. the p-value is less than α ($p= 0.00<0.05$).

Examples from the corpus are as follows:

[EIC](32)Following <u>Swales's move analysis framework</u> and the <u>functions that Thompson (1994) found in her study</u>, the data sets for this study were analyzed to identify the recurrent rhetorical moves and the linguistic aspects in the two corpora of lecture introductions.

[ELC](33) Following guidelines of the OPT (Hansen & Lesley, 2005), their OPT scores were used to select 200 intermediate (i.e., 100 high- and 100 low intermediate) EFL learners.

(34) [PLC] این پرسش نامه توسط هرمنس (1976) ساخت شده وطی مطالعات مختلفی در ایران هنجار یابی شده است(هومن و عسگری، 1379)

[PLC] (34) This questionnaire was developed by Hermens (1976) and had already been standardized by several studies in Iran (Hooman and Asgari, 1379).

B. Move 2 Step 3 B: Highlighting Acceptability of the Method/s

Results indicated that this step occurred in 40% of the English international corpus, 65% of the English local corpus, and 70% of the Persian corpus. In other words, it is found as optional in the English international corpus but a conventional move in the other two corpora. Results showed statistically significant differences in the use of this step in the corpora, i.e., the p-value is less than α ($p= 0.00<0.05$).

Examples from the corpus are as follows:

> *[EIC] (35) Cronbach alpha was used to check the reliability of the questionnaire (0.81).*
>
> *[ELC] (36)Validity in this study refers to ‘‘the defensibility of the inferences researchers make from the data collected’’ (Fraenkel&Wallen, 2003, p. 119).*
>
> *(37)([PLC] روايي آن به صورت صوري و محتوايي مورد تأييد استادان با تجربه و متخصص در اين*
> *زمينه قرارگرفت و پايايي آن از طريق ضريب آلفاي كرانباخ با استفاده ازفرمول محاسبه گرديد.0/89*
>
> *[PLC] (37) Its validity was established in terms of form and content by field experts and specialists, and its reliability coefficient was calculated at 0.89 through Cranach alpha coefficient*.

Move 3: Elucidating the Data Analysis Procedure

This move has three steps: Step1 relating or recounting data analysis procedure(s), and Step 2 justifying the data analysis procedure(s). Table 5 present the distribution of this move in the corpus.

Table 5: Frequency Distribution of Move 3 & the Steps in the Corpus

Steps	Corpus	EIC		PLC		ELC		df	X2
		F	%	F	%	F	%		
Step 1	Relating or recounting data analysis procedure/s	93	93	93	93	85	85	2	.08
Step 2	Justifying the data analysis procedure/s	55	55	35	35	50	50	2	.00*
Step 3	Previewing the results	5	5	0	%	0	0%	2	.13
Total number of instances		153		128		135		2	.165

Note: ELC: English International Corpus, PLC: Persian Local Corpus, ELC: English Local Corpus

Move 3 Step 1: Relating Data Analysis Procedure/s

As shown in Table 5, this step appeared in 93% of the English international and the Persian corpus, and 85% of the English local corpus. Following Kanoksilapatham's (2005), this step is found conventional in the three corpora. Despite the differences, however, results of the statistical analysis showed no significant difference between the three corpora, i.e., the p-value is more than α ($p= 0.08<0.05$). Instances in the corpus are as follows:

> *[EIC](38) At all three time-points children were assessed individually. Assessments <u>at t1 and t2 took place</u> in the <u>family's homes</u>; assessments <u>at t3</u> took place in a quiet room at school. The tests were administered in a fixed order by trained members of the project team.*

> *[ELC](39) Teachers' questionnaires <u>were directly given to</u> them, most of which were completed and returned within a one week period. Parents' questionnaires <u>were also either directly handed in to them, or given to</u> their children, who were asked by their teachers to have their parents fill them in, and bring them back to class at their earliest convenience within a month.*

> *[PLC](40)* در بازنگري متمركز فعاليتهاي كلاسی ، يک جلسه از كلاس درس معلمان فيلمبرداري ميشود، سپس در مصاحبه انفرادي محقق با معلم، فيلم كلاس پخش می شود و همزمان ، معلم در مورد آنچه سركلاس به آنها فكر ميكرده صحبت می كند.

> *(40) [PLC] In an overview of the classroom activities, one session of the teacher's classroom activities was filmed. Later, the film was shown to the teacher in an individual interview with the presence of the researcher, and the teacher spoke about what he thought during class activities.*

Move 3 Step 2: Justifying the Data Analysis Procedures

Results showed that this step appeared in 55% of the English international corpus, 50% of the English local corpus, and 35% of the Persian corpus. Therefore, this step is classified as optional in the corpora. Chi-square analysis showed statistically significant differences in the use of this step in the three corpora as the p-value is less than α ($p= 0.00<0.05$)

Examples from the corpus are as follows:

> *[EIC] (41) Following the qualitative analysis of key functional units in the commentary section of manuscript reviews, I performed <u>a quantitative analysis</u> of*

two sets of lexico-grammatical features, which had been selected for their association with the rhetorical purposes of recommendation and negative evaluation.

[ELC] (42) In order to analyze the collected data and answer the research questions, multivariate analysis of variance (MANOVA) was conducted as the dependent variable of the study was measured at three stages.

(43) [PLC] در اين تحقيق به منظور بررسي ارتباط بين انواع جهت گيريهاي انگيزشي يادگيري زبان به عنوان متغيرهاي پيشبين) و يادگيري زبان انگليسي (به عنوان متغير ملاك) از تحليل رگرسيون) چند متغيره استفاده شد .

(43) [PLC] In the present study, in order to examine different types of motivational orientation for language learning (as a predicator variable) and learning English language (as a dependent variable) a multivariate regression analysis was used.

Move 3 Step 3: Previewing Results

The findings showed that this step was present in 5% of the English international corpus and was absent in English local and Persian corpora. In other words, it was found as optional in the corpus. Results showed no significant statistical differences in the three corpora, i.e., the p-value is more than α ($p= 0.13>0.05$)

An instance of this step in international corpus is as follows:

[EIC](44)A close examination of the arguments relying on all three means of persuasion revealed that they were utilized to both substantiate an author's position and undermine criticism.

According to Table 5, this step was found as optional in the three corpora. Overall, despite the differences, there is no statistically significant difference in the overall use of Move 3 in the three corpora (i.e., the p-value is more than α ($p= 0.16>0.05$).

Discussion

The results indicate that despite variation in the use, all moves and steps in Lim's (2006) framework were employed by English international, English local and Persian local writers. However, we found that the authors of the local Persian corpus tended to employ a larger number of moves in developing the method section compared to international and local English writers. Results of chi-square analyses showed statistical significant differences in the use of

Moves 1 and 2 in the three corpora. These findings are different from Mozaheb's (2015) study of the method section of medical research articles, where it was found that international writers employed a greater number of moves in their methods compared to Persian writers. Moreover, the findings of our study of applied linguistics showed some variations in the cuprous, whereas Mozaheb (2015) reported that their corpus of medical science research articles did not show any differences between native and nonnative writers. In other words, these differences confirm the idea that genre use varies not only cross-disciplinary (as found in: Kanoksilapatham, 2003; Nesi & Gardner, 2012; Parodi, 2010a; Parodi, 2010b; Pramoolsook, Li, & Wang, 2015, to name a few), but cross-linguistically (as found in: Al-Khasawneh, 2017; Amirian, Kassaian & Tavakoli, 2008; Farnia & Barati, 2017; Marefat & Mohammadzadeh, 2013; Niu, 2018; to name a few). In other words, linguistics variations can offer uniqueness in the way a pattern is organized. However, Khamkhien (2015) who reported that his corpus study of applied linguistics could not comply with the existing models for method sections and the corpus of their study, we found no such discrepancies in our corpus with Lim's model. As mentioned earlier, many researchers reported that their study of method sections in different disciplines did not comply with already developed models (e.g. Musa, Khamis, & Zanariah 2015, Pramoolsook, Li, & Wang, 2015)

Regarding the subcategories of Move1 *describing the sample* the findings are similar to a number of previous studies in which *describing the sample* was found in all corpora (e.g. Lim, 2006; Pramoolsook, Li & Wang, 2015; Zhang & Wannaruk, 2016; Uzun, 2016). In other words, this move was found obligatory in all these studies. We interpret this as evidence for extent to which the results pertaining to description of the sample can be generalizable to at least some other contexts (Mackey & Gass, 2016).Moreover, the results showed that writers of local Persian research articles tended to employ significantly larger number of moves in *describing the location of the sample* and *describing the sampling techniques* compared to international and local English writers. A possible reason could be that many articles published in Iranian local journals are based on master's theses or doctoral dissertation without substantial changes. It is often observed that the method sections in theses and dissertations are written in greater details. Authors may have been urged to copy big sections of their graduate work into journal publications.

The frequency of Move1 Step 2 *recounting data collection procedure* and Steps 3 *justifying data collection procedure* were lower compared to other subcategories of Move1.The findings are in line with Lim's (2006) study of management research articles which showed that the occurrence of Move1 Step3 depends on the occurrence of Move1 Step2. These moves were found optional in the three corpora and the writers showed no preference in elaborating on these steps in the method sections. This is in line with Pramoolsook, Li and Wang's (2015) corpus of marketing. According to these researchers, only 30% of their corpus fit Lim's model, since the journal requirements for publishing in the journals under the study were different.

The results of the present study suggest that, except Move1 Step 3A, *highlighting the advantage of using the sample*, where the international English corpus showed a significantly greater number of moves, the international and local English writers were similar in applying the subcategories of Move1 in developing the method section in the field of Applied Linguistics. These findings suggest that Iranian authors and international authors had similar tendencies regarding this particular move.

In Move2 *delineating procedure(s) for research variables* local Persian research articles employed significantly more moves compared to the other two corpora. In other words, Persian research articles used significantly more strategies to present an overview of the design, to cite previous research method(s), and to highlight acceptability of method(s). Moreover, except *specifying items in questionnaires/database*, which is found to be an obligatory move in the local Persian corpus and *highlighting the acceptability of method,* which was found to be an optional move in the international English corpus, other steps in Move2 were found to be optional in the method sections of Applied Linguistics research articles. The findings showed that local Persian journal elaborated the method section by employing more moves than local English corpus. Two possible reasons can be adduced for this frequency: Firstly, writing in the author's first language may provide them more power in elaborating the methodology. Secondly, it is possible that the local Iranian journal referees put more emphasis on the details of the method section. Further studies with author' attitudes are required to examine what really urge the authors to develop each section of the article the way it is published.

With regard to Move3 *elucidating data analysis procedures* the frequency of occurrence of Move3 Step1*recounting the data analysis procedure* in the method section showed that it was a conventional move in all the three corpora; however, the writers showed less tendency to *justify the data analysis procedures* or *preview the results* in the method sections and therefore these steps were found as optional. The absence of Move3 Step3 *previewing the results* in the corpus which, as opposed to other studies in marketing (e.g. Lim, 2006; Pramoolsook, Li &Wang, 2015), suggests that writers may use various research article rhetorical organization to get published in journals and it varies across languages and disciplines. In other words, the journals under the study may require the writers to discuss their findings in other sections such as results and discussion sections. Thus, unlike disciplines such as management and marketing (e.g. Lim, 2006, Pramoolsook, Li & Wang, 2015), where discussing an *overview of the results* can be a part of the method sections, journals in Applied Linguistics normally require the authors to describe their findings in the proceeding sections. This resonates with Cotos, Huffman and Link's (2017) observation that the rhetorical convention in the method section is discipline specific.

Although it is not easy to explain the differences in the corpus, the findings suggest cross-linguistic differences in moves. That is, authors of different languages utilize different patterns in the organization of the method sections. For instance, some steps are found obligatory in local Persian corpus, while they were either conventional or optional in international and local English corpus. In other words, not only does the employment of moves vary cross-disciplinary (Hyland, 1999; Peacock, 2011), but also the findings of the present study showed that the norms in writing could vary cross-linguistically. Previous studies showed that the issue of cross-linguistic difference appeared in the other sections of Persian research articles. According to Hasrati, Gheitury and Hooti (2010), "the abstract moves [in Persian] often seemed incongruent with the overall communicative moves often referred to in the English tradition of academic writing" (p.66). Their studies on research articles abstract written in Persian on a number of disciplines in both hard (i.e. Chemical Engineering, Power Engineering) and soft sciences (i.e. Linguistics and Persian Language and Literature) showed that they do not conform that of traditionally written English abstract. In other words, the writers' social and cultural background might influence their choice in language use (Hatipoğlu, 2007).

Pedagogical Implications

Studies on genre analysis could have pedagogical implications for students, especially novice writers and non-native writers. These studies can provide novice writers with valuable information about the conventions of a particular genre and the reasons underlying such conventions in the social practice of a given community (Bhatia, 1997).

For instance, the findings of the present study displayed variation in the use of moves in the three corpora as some steps were found to be obligatory while others optional or conventional. In other words, authors writing for the same disciplines in different languages (i.e. in their first language or the target language) may prefer their own linguistic-specific patterns to organize the method section of their articles. Our research like many others (e.g. Ghasempour & Farnia, 2017; Farnia & Barati, 2017; Marefat & Mohammadzadeh, 2013; to name a few) which studied sections of published research articles in top quality local and international journals and found differences between native and nonnative writers suggests that nonnative English writers did not seemingly feel obliged to follow identical patterns utilized by either international writers or native speaker to get published ; as far as a writer can elaborate a manuscript in a scholarly way acceptable for publication, it is adequate. For classroom use, we suggest that the students can be encouraged to examine the texts published in different journals analytically to recognize the variations rather than following blindly the models to develop each section. Following Swales' (1990) 'genre awareness' and 'rhetorical consciousness-raising', students can be asked to collect text samples written in their L1 and the target language from their disciplines, analyze the collected corpus for the rhetorical structures, and then compare how the texts are written cross-linguistically. It is through such awareness development that a more complex genre could become possible for novice writers (Loi & Evans, 2010).

This could be practically implemented in Iranian postgraduate classes in courses where writing assignments is as a requirements of course assessment, such as academic writing, seminar, or research methodology. The language instructor may teach students how to organize the sections with a focus on moves and subsequent steps to develop each section. Students can be informed of the conventions of discourse community, for the purpose of which explicit teaching seems to be necessary.

The findings of this study with a large corpus can be useful for the English language major students. The moves can be introduced to the students, the differences between the three corpora can be discussed, and examples can be provided for the purpose of clarification. However, teachers may acknowledge the fact that "it is the nature of research, not the rhetorical conventions that determine how the students should articulate aspects of their methodology" (Cotos, Huffman & Link, 2017, p. 104).

This becomes even more important when researchers are pressured to publish and might get rejected for not following the discipline conventions (Peacock, 2011). Since getting published can lead to "an enhanced reputation, prestige, peer acceptance, and research grants (Kanoksilapatham, 2007, p.173), it can turn into a frustrating and challenging task for a novice or non-native researcher who is unable to express themselves scientifically adequately. Therefore, as Hyland (2007) states, “Genre-based writing instruction offers students an explicit understanding of how target texts are structured and why they are written in the ways they are (p. 151).”

In other words, “[b]y categorizing and analyzing the texts they ask their students to write, teachers become more attuned to the ways meaning is created and more sensitive to the specific communicative needs of their students (Hyland, 2007, p.151).

Conclusion

The present study was an attempt to determine the rhetorical moves utilized by international and local English and Persian local academic writers in the method section of Applied Linguistic research articles. The findings showed that Iranian writers of Persian research articles have a tendency towards presenting the process in the method sections, hence with more extensive application of moves in the Persian corpus. Results also showed there were no statistically significant differences between Iranian English research articles and the international corpus.

This study has embarked on the rhetorical organization of the method section in English and Persian Applied Linguistics research articles. Despite the attempt to identify cross-linguistic differences between method sections in Applied Linguistics, it is recommended to carry out further studies on various disciplines and languages to understand the rhetorical organizations used in various written discourse. For example, other studies are recommended to analyze the rhetorical differences in other sections of Applied Linguistic written by writers of different L1 background cross-linguistically. Moreover, it is recommended that other studies interview the authors to learn about their justifications the way they organized their research articles.

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How Do Chinese Novice Academic Writers Approach Tasks in a Genre-Based Classroom? A Case Study of Genre Knowledge Uptake

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Abstract

Extensive research has been conducted on genre analysis and approaches to teach them, but still relatively little attention is paid to learner uptake of genre knowledge in different pedagogical settings (e.g. Cheng, 2019; Tardy, 2009). This study is a supplementary project to an intervention study on genre-based (GB) approach to teaching EFL novice writers academic English for publication in China. It looks at two individuals' (with distinct starting proficiency) engagement in classroom genre tasks throughout a whole semester (15 weeks). From the grounded analysis of students' retrospective interviews, several prominent themes emerged. Learning style and general English proficiency stand out as one of the most important influences that may lead to distinct learning trajectories. Top-down learners seem to adapt to genre pedagogy more efficiently. In addition, there are several Chinese EFL learner characteristics that affect genre knowledge uptake, such as paying too much attention to grammar and vocabulary, which makes the learners unable to juggle between form, function and meaning in reading; or seeing genre task as reading comprehension quiz with definite

answers. Finally, developmental stages of genre awareness are also observed in these learners: that is, from template "acquisition" to re-contextualization of prototypical genre structure and finally, to critical awareness of flexibility in genre.

Keywords: genre awareness; genre uptake; genre-based classroom; task; individual learner differences

1. Introduction

With the increase of complexity of writing in the academy and classrooms becoming more diverse culturally, socially, and linguistically than ever before, genre-based (GB) approaches emerged as the result of the changing views of discourse and writing which emphasizes how language is structured in the particular social context. Genre approaches provide an effective writing pedagogy, by "making explicit what is to be learnt, providing a coherent framework for studying both language and contexts" (Hyland, 2007, p. 149). According to Hyon (1996), the impact of genre in educational contexts is evident primarily in three major traditions of research studies: 1) the English for Specific/Academic Purposes (ESP/EAP) School, 2) the Sydney School, and 3) the New Rhetoric (NR) approach. A fairly new direction would be critical EAP (e.g. Pennycook, 1997) and Academic Literacies (e.g., Lillis & Scott, 2007). Coffin and Donohue (2012) categorized these various traditions of research into a continuum. Placement along this continuum will depend on the starting point of analysis in instruction, namely whether the work is text-focused or writer-focused. The ESP School and the Sydney School are more text-focused in that students are directed to explicitly analyze well selected "genre exemplars" to understand common practices in the discourse community (e.g. Bhatia, 1993; J. Flowerdew, 1993; Swales, 1990). Considering the Chinese EFL context where students are more familiar with linguistic/textual analysis as the emphasis in language teaching, the ESP approach was the primary framework adopted in the instructional design of the present study.

Swales' ground-breaking work (1990, 2004) is seminal in shaping the genre theory in ESP. He defined genre as "a recognizable communicative event characterized by a set of communicative purpose(s) and formal properties identified and mutually understood by the members of the professional or academic community in which it regularly occurs" (Swales, 1981, cited in Bhatia, 1993, p. 13). His research centers on genre in academic settings, with an emphasis on the genre analysis (GA) of the Introduction sections in the research article genre. The "move structure" analysis (e.g. Swales, 2004) of "creating a research space" has later informed numerous studies in ESP with descriptions and analysis of various disciplinary-specific genres and part-genres.

Ideally, the ESP GB approach is driven by learner-centeredness (but see also Hutchinson & Waters, 1987, for a critique of ESP's learner focus), as ESP is by definition one that attempts to give learners access to the language they need to accomplish their own academic or occupational goals. However, "whether or not ESP is always as sensitive to learners' needs and successful at meeting them as it should be is another matter" (Belcher, 2004, p. 166). Despite numerous studies on the teaching and linguistic analysis of academic genres, ESP research has focused primarily on ''products rather than processes'' (Belcher, 2006, p. 149). Hyland (2009) also pointed out that although GB approaches are widely adopted in academic writing courses, in this area ''linguistic research has probably outstripped pedagogic practice'' (p. 103). While many of the genre descriptive studies have been translated into L2 writing pedagogical proposals or models (Chen, 2015; Jacoby, Leech, & Christine, 1995; Henry & Roseberry, 1998; Flowerdew, 2000; Huang, 2012; Tribble & Wingate, 2013; among others), few of them provided substantial discussions on how students learn in the ESP GB framework. Cheng (2005) identified this crucial issue and discussed in great length in his PhD thesis. He noted that the ESP GB approach to writing instruction still remains "a regrettably lopsided approach that privileges the analysis of learners' target genre needs and the preparation of teaching materials but neglects the actual learning by the learners who are consigned to learn in such a framework" (p. 35).

Cheng conducted a series of case studies (Cheng, 2006b; 2007; 2008a; 2008b; 2011) containing in-depth descriptions of individual L2 writers' learning process of genre knowledge. His works have been focusing on students' exploration of rhetorical organizations after class in genre analysis, while less information of what actually happened *in class* was provided to inform the ESP GB pedagogy. There are some other follow-up studies on learners in ESP GB classroom. Tardy's study (2009) tracked individual learners' genre knowledge development throughout their graduate studies, with GB classroom instruction as one of the sources of "genre network" building mentioned in Chapter 8. Yasuda's (2011) research looks at Japanese EFL students' genre awareness development in one semester. She used pre- and post-tests (writing tasks) to investigate their improvement in genre awareness quantitatively, and interviews further probed into their general attitude towards the pedagogical tasksow different learners react to these tasks in class. As an extension of Cheng, Kuteeva's (2013) study is by far the most comprehensive one, for it compares learners' responses to GA task across four disciplines, adding one dimension (the epistemological dimension) to Tardy's (2009) genre knowledge model (including formal, subject matter, process and rhetorical knowledge). It was found that learners' approaches to genre analysis tasks fall into two categories: descriptive and analytical. However, strictly speaking, the tasks he used were not pedagogical tasks students discussed in class, but rather assignments on online fora. In summary, most studies in the literature provided learner perceptions of genre and task in a general way, through their writing and GA assignment performance (not on the pedagogical tasks), but hardly any study has followed students' actual "microgenetic" response to the in-class pedagogical tasks week by week. This study thus sets out to explore how students receive the GB pedagogy and their incremental and staged genre knowledge development throughout the instructional period.

In the present study, the definition of *task* in the ESP tradition is adopted. Different from the SLA tradition which emphasizes the linguistic outcome and communicative language use in tasks, according to Swales (1990, p. 74), task in the ESP tradition refers to "sequenceable goal-oriented activities drawing upon a range of cognitive and communicative procedures relatable to the acquisition of pre-genre and genre skills appropriate to a foreseen or emerging sociorhetorical situation''.

1.1 Research Questions

The following two research questions guided the study:

1. How do the two case-study learners of different starting levels approach tasks in the genre-based classroom? And how is their genre knowledge uptake?
2. What are the major themes emerged from the retrospective study of the two case students over 15 weeks of instruction concerning tasks, language, and genre awareness in the genre-based classroom?

2. Methodology

2.1. The Genre-Based Academic Writing Course

This research project was carried out in an academic writing course designed for graduate students majoring in Applied Linguistics. It generally followed the ESP GB framework (Swalesian tradition) in terms of syllabus and task design. This course was built into the key compulsory course of "Second Language Acquisition" and was offered by the same professor as an adjunct course. All the first year students were eligible to enroll in the course. Each lesson lasted for 70 minutes each week over a period of 15 weeks. The name of the course was "Writing Research Article in the Field of Applied linguistics". The tasks in the curriculum basically followed the principles, format and key points in the pioneering resource books on ESP GB pedagogy by Swales and Feak (2004, 2009, & 2011). The reference materials which guided the GA task discussion in class and the assignment after class may come from journal publications like Journal of ESP/EAP. I, the researcher, played dual roles as both an insider and an outsider: I designed the intervention and the course materials with comments and insights from the professor (the instructor of the course); during the instructional period, I was the observer who monitored the implementation of this approach and collected relevant data for evaluation.

I would like to use the third week of teaching as a detailed illustration of the instructional procedure. The main teaching goals in Week 3 included introducing the prototypical structure of the Introduction section of research articles (CARS model) and the language features of Move 1 Step a. Before the students set out to read the genre exemplar (model paper selected from a specialized corpus with research papers in the subject field), the teacher prepared students for reading by adopting the ideas from Swales and Feak's book (2004, pp. 242-243), and showed them on the PowerPoint slides to guide students to think about the fundamental purposes of an Introduction section of an RA and the reasons why the scholars in the research community often need to "create a research space". After the general introduction of the CARS model, students were guided to understand the general topic and meaning in the major genre exemplar for detailed reading. The Introduction section of the paper (three pages long) generally follows the CARS model but not strictly, as the teacher did not want to "prescribe" that all introductions look the same, leaving the learners a static impression of the genre structure. There were two tasks embedded in the detailed reading process. The first task was a discovery-based activity of the three moves following Swales and Feak's task format (2004, p.

244), but the difference was that during this task, the teacher would guide the students into the detailed reading line by line (Rose & Martin, 2012) instead of focusing on completing the task and finding out the right answers only. He would guide students to analyse the moves and steps, ponder on the rhetorical purposes and reasons for such organization and also drew students' attention to the prototypical language features while reading. After a top-down overview of the text, in Task 2, special attention was directed to Move 1 in particular, and a detailed reading was carried out with awareness-raising of the specific language features of the move. Some content-based questions were also asked such as the information mentioned in Move 1 Step b (a brief review of the literature). In order to enlarge students' repertoire of lexical phrases, they were further directed to the collaborative learning and rewriting of language features for the important Step a "claiming centrality" (in the "language focus" section (p. 250) of Swales and Feak's book), with more examples collected from the specialized corpus and the "phrasebank" online. Due to limited space, the detailed lesson plan and complete syllabus will be provided upon request.

There were four types of pedagogical tasks. The first type is oriented for the identification of rhetorical structure of moves, the second type is language focused (exploring the linguistic realizations of moves), and the third type may involve "content-based and language-aware" tasks of the genre exemplar. There were two types of assignment tasks, including the independent GA task (resembling the ones done in class) and the rewriting task. Following Cheng's (2005) study, the purpose of the GA task was to evaluate how much students had learned in class and to further train them in conducting self-directed genre analysis. The purpose of the rewriting task was to evaluate students' application of genre knowledge in writing. In this guided rewriting assignment, the students need to rewrite a poorly written research paper (could be their own or provided by the teacher) into a more appropriate and publishable piece of work, from the discourse level to the word level.

2.2 Rationale for Case Studies

Case study investigates and reports the complex dynamics and unfolding interactions of events, human relationships and other factors, with the recognition that every context is unique and dynamic (Cohen, et al., 2011). This study combines individual case studies with long-term on-site ethnographic observation of the whole class, attempting to provide a natural, holistic, and in-depth evaluation of the instruction on students' genre knowledge development. In addition, it aims to provide theoretical insights into the prominent issues in GB pedagogy that are derived and interpreted from students' weekly retrospective interviews and report. In this sense, the case studies fall into the interpretive type (McDonough & McDonough, 1997) , because a) it tries to achieve contextualised understanding of phenomena, b) the data will be used to derive constructs, themes & patterns ('theory' grounded in data), and c) it adopts an emergent analytic research design. It aims to describe and then explain students' behavior and how their in-class uptake and approaches to genre conceptually relate to other theoretical issues like genre awareness, language and writing.

2.3 Selection of Cases

Two case study students were selected from the participants who enrolled in the academic writing course and agreed to participate in the intervention study (the larger project involving test-taking, allowing access to all their assignments, which is not covered in this paper). Beyond this, they were further selected based on their pre-test scores (a genre test and an academic lexical test). Students who had attended the pre-tests were divided into two starting levels based on their Standard Deviation (SD) scores and rankings: those who scored above SD 0.5 were grouped into high starting proficiency, while those who scored below SD -0.5 were grouped into the low starting (or basic) proficiency. Looking at these cases will provide rich and valuable information on designing a more well-rounded pedagogy in order to suit the minority group of students whom are often ignored. The profiles of the two cases are presented in Table 1.

Table 1: Profiles of the Case Study Students (pseudonyms used)

Name		Raw score	Standard Deviation(SD)	Ranking (out of 66 students)
Long	Pre-test in academic lexical knowledge	30/43 (69.77%)	0.55	21
	Pre-test in genre knowledge	39/72 (54.17%)	0.72	20
Xiao	Pre-test in academic lexical knowledge	17/43 (39.53%)	-1.61	61
	Pre-test in genre knowledge	2/72 (2.78%)	-1.47	56

2.4 Methods of Data Collection

(A) Retrospective Interviews

I arranged retrospective interviews (one-to-one) with the two individuals each week after class, before the next lesson, in a quiet classroom. It was a semi-structured interview with prompts. The prompts were generally divided into two sections. In the first section, students were asked to recall and comment on the teaching activities and materials of the lesson they had just attended, whether they were understandable and effective. Then in the second section, I would ask questions which directed informants to retrospect on what they had learned in class, especially the genre structure and the language features. The weekly interviews with the case study students were mostly done in Chinese and they were fully transcribed.

(B) Stimulated Recalls

Stimulated recall is an introspective method in which participants recall their processes of conducting certain tasks with prompts or stimulus (visual, oral or other tangible reminder such as the composition drafts). According to Gass & Mackey (2000), the method is considered superior to a simple post hoc interview because it could allow participants to provide more details in situ based on the tangible prompts rather than relying solely on memory. The purpose of conducting stimulated recalls is to investigate the selected individuals' thinking process in doing GA tasks in class and the assignments (i.e. other GA tasks and the rewriting task), so that their noticing, acquisition and their improvement in language features and genre awareness would be better understood. The recalls were conducted after the retrospective interview. The stimulus for the recall was the GA tasks handouts and submitted assignments. They had to look at the material at hand while reporting the process of doing the genre analysis or assignment tasks.

(C) Classroom Observation

The major purpose of the observation was to help the teacher/professor monitor the course and make necessary adjustments. It also provided detailed information on the instructional environment where the case study students were situated. I audio-recorded each class and took extensive observation notes on the spot. An observation protocol was developed in which notes were taken on students' general responses to and participation in the classroom activities conducted, and teacher's delivery and explanation of knowledge. Some critical episodes of the recording were transcribed in order to supplement and support the individual case students' description of what happened in class.

(D) Other Ethnographic Data

In addition to the major data sources, other ethnographic data on site was also collected as supplementary information, including informal chats with the teacher and students after class in a face-to-face manner or via online discussion groups like the “QQ group”. The informal chats were conducted in a random and casual way, for example, when we happened to meet on campus or during a lunch. Sometimes some students would approach me voluntarily after class and gave some compliments or comments on the course.

2.5 Data Analysis

Two major data analysis techniques were used in analysing the data sources. They are descriptive content analysis and grounded microgenetic analysis. Nvivo 10 was used for organizing the different sources of qualitative data and the coding of the 15 weeks of follow-up interviews and several sessions of recalls.

For the in-class uptake and engagement, the grounded microgenetic analysis (following Siegler & Crowley, 1991) generated themes from three perspectives: the first is the weekly changes in the participants’ uptake of genre knowledge; second, the pedagogical issues in the ESP GB classroom (which will not be reported specifically in this paper, such as the design of instruction on genre structure which concerns the balance between inductive and deductive task, between variation and depth in reading/highlighting generic features, the macro and micro level scaffolding, and the integration of content and language, etc.). The last perspective is the learners’ own perceptions on “task-in-process” in the GB classroom: i.e. development in the noticing of generic features, in genre knowledge and language awareness. These themes reveal: a) their learning stages and learning processes, b) what they actually learned and internalized, and c) what they considered important and worthy of learning over the period of instruction. These themes lead to the theoretical discussions on learner characteristics in GB studies in the next Results and Discussion section.

3. Results and Discussion

This section contains two parts. First of all, I will present a summary of each learner’s learning trajectories within the 15 weeks of instruction. In the second section, I will try to discuss the major themes emerged from the data (with reference to the findings) in relation to other prominent theoretical issues in GB research and pedagogy.

3.1 Xiao's Engagement and Uptake in Class throughout a Semester

In terms of percentage of uptake in class, Figure 1 shows a graph indicating Xiao's development in the instruction of each section on RA paper writing. At the very beginning, Xiao was lost and could not catch the routines and common themes in class. Till the instruction on Method, no noticeable progress was observed, as Xiao had limited previous knowledge about research method. Xiao's uptake reached its peak in the instruction on Results section where she started to pay special attention to the moves, and the language features and relate them to her previous knowledge about reporting data with statistics and tables. She could pick up most instructional contents by then. The percentage of uptake went down again when the understanding of content was integrated into the genre analysis where Xiao could only pick up the prototypical phrases out of context.

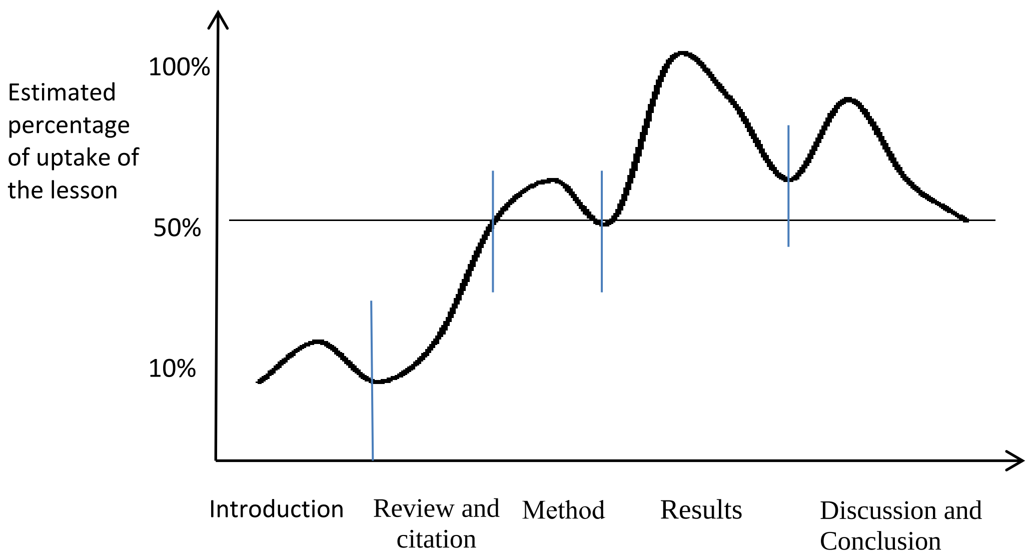

Fig. 1. Summary of Estimated Percentage of Uptake in Class by Xiao throughout the Course

Xiao, one of the basic proficiency learners in the class, was very hard-working. I could see her improvement and progress throughout the semester, from knowing nothing about academic writing in English (she did not major in English, therefore had never read or written a research report before), to being able to understand a long research paper and interpret the results in an appropriate manner. In terms of learning style, Xiao paid little attention to the entirety of the content of each lesson or the complete article as she tended to focus on trivial details in language features. Xiao's hard work compensated for many of her "disadvantages" in learning, such as relying on rote learning and a special focus on vocabulary. She was always the one who noticed the most lexical items in class and after class. She became “a big fan of lexical bundles” at the end of the course.

On the other hand, she tends to have a fixed understanding about the rhetorical structures as if the teacher was prescribing the right structure to them (the teacher had actually mentioned the flexibility of genre). She later gradually realized in her independent reading that “research papers were not always organized in an ideal prototypical structure” (from week 12 report). In terms of the understanding of genre structure, she developed from a “form reader”[3] to a “rhetorically aware-language reader[4]” (based on Hirvela, 2004) both in class and through the rewriting task. Her development of genre awareness in GA tasks is illustrated in Figure 2. In the earlier weeks’ of genre analysis in class, Xiao focused on vocabulary and lexical items only. Towards the middle of the course, she picked up more and more move-specific language features, and came to realize the functions of moves. At the end of the course, she could bring all these aspects together, but remained at the superficial level of understanding genre.

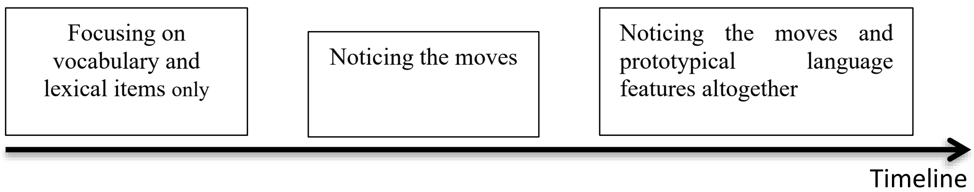

Fig. 2. Xiao’s Development Process during Genre Exemplar Analysis in Class: Increasing Awareness of Generic Features by Xiao

Based on the longitudinal and detailed record of classroom uptake, to scaffold a basic proficiency learner like Xiao, an EAP course designer should probably take into consideration the following aspects: a) the learner’s limited proficiency in academic language (the need for Chinese explanation) and bottom-up learning style such as the special attention to vocabulary rather than discursive level genre structure; b) the need for constant reminders on instructional themes and coherence in class; c) a better planning of micro-level scaffolding (Bloome et al., 2004) of teacher-student interaction, including “boundary-making”--which refers to the way

[3] Form (or Language) reader is a new term in the current study defined as: a specific type of reader who reads an academic text for learning about language only. These learners like to focus on form, and they are typically found among EFL learners in China due their previous intensive L2 training on grammar and vocabulary. This term is used in comparison to the other two terms used by Cheng (2005) and Hirvela (2004) “information reader” and “rhetorical reader”.

[4] This term is developed from Hirvela’s term “rhetorical reader” (p. 121), a reader who is more focused on “purpose”: *why* the author writes in this way. A rhetorically-aware language reader is fundamentally a language reader whose major purpose is to learn the linguistic expression, but this language reader pays attention to the rhetorical purposes of the text as well.

the instructor signals a change of event or activity in class --and “thematic coherence”—making the logical links between the themes explicit in the GB classroom.

3.2 A Summary of Long’s Engagement and Uptake in Class throughout the Course

Long’s experience and recall pointed to the fact that a self-motivating and competent student is often not liable to the amount of scaffolding they received. Long had always exhibited high percentage of uptake in class and accuracy in recall. The percentage of uptake in class was estimated to be above 50% throughout the course (see Figure 3). She kept a steady progress in the uptake of the course, while she experienced the most difficulty in the Results section of RA. Even in the later weeks when she was more concerned about the content, she could recall the basic moves and language features without much difficulty. Long was a learner with top-down learning style, who often engaged in a task by starting from the overall structure of the course (syllabus), of a lesson (flow of themes and topics), and of a text (genre structure), before attending to details. This was evidenced by her well-sequenced recall interviews each week. She was constantly conducting self-reflection and synthesis of knowledge from different lessons and courses, which was lacking in the low starter. On the other hand, she was extremely competent as well in noticing and memorizing the details, as reflected in her accuracy in reporting the prototypical phrases she learned in class. In other words, this course provided an opportunity for the “top-down” learner (often good at abstraction with clear logic) to attend to bottom-up process, the lexico-grammatical linguistic features. However, as proficient as she was, the previous style of instruction she had received, that is, the grammar drilling and the use of bilingual dictionaries, had some negative influence on her efficiency of improving academic literacy. For example, she tends to initiate one-to-one mapping of Chinese and English words to understand important concepts, which was less accurate due to the different connotations in the words. In addition, the use of Chinese in other content courses (i.e. the Research Method and Statistics courses) without integration in content with the current writing course may contribute to Long’s less satisfactory uptake in the weeks on Method and Results section.

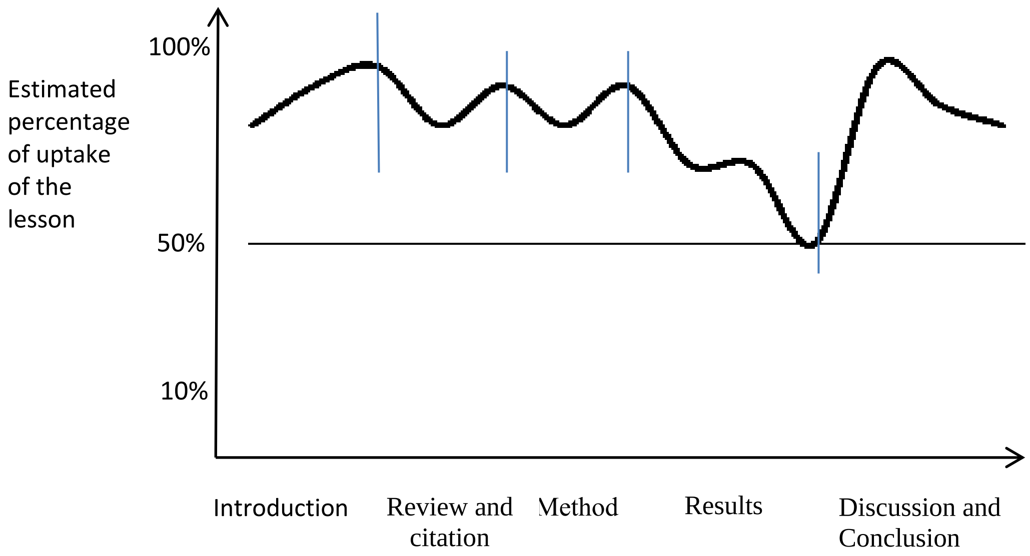

Fig. 3. Summary of Estimated Percentage of Uptake in Class by Long throughout the Course

For this type of learners, through the EAP GB course, the instructors might need to consider helping them to integrate content and language for more sophisticated understanding of genre, as they possess the capability to conduct independent learning of academic language after class. This course would be less attractive to them once they have spotted the routine and the pattern of instruction. Nonetheless, the current form of the course had already provided various learning opportunities for this learner, as it was never considered as "too easy" by Long, especially when the content and research skills were integrated into the language-based instruction. More input in the form of classroom discussion and reading would be more beneficial if time permits.

In the next section, the results will be mingled with the theoretical discussion for better understanding of the learners in the GB classroom. The concepts brought up and discussion of themes were all grounded in the data, abstracted and interpreted from it. Data may be presented as support for discussion.

3.3 Connecting "Learner-Centeredness" with Task in the GB Framework

This study proposes to bring "task" into the GB theoretical framework in relation to other theoretical issues about learner and learning, as *task* can be conceptualized as the central junction and end goal that links together other important issues that are constantly discussed within the GB framework.

The nature of tasks in the ESP GB classroom has yet to be fully discussed. Many questions are left unanswered, such as how learners approach GA tasks in class (but see Tardy, 2009); what type of task is effective for what type of learners; whether a task reached its original teaching goal for the students in the interaction or not. To put it simply, there are two interrelated theoretical issues in the ESP GB framework that contribute to task effectiveness in the classroom environment: conceptualization of the "learners" (based on the learner characteristics), as well as the learners' own perceptions towards genre, learning and the pedagogical tasks.

3.3.1 Learners in the ESP GB Framework

Examining learners in the GB classroom in part means to examine the learner characteristics that have been taken for granted or given little remarked on, such as "advancedness". Oftentimes, these seemingly "advanced" students who possess similar attributes often develop genre awareness to distinctively different levels. Researchers have been uncertain about the reason why some of these "advanced students" are better at receiving the ESP GB approach than others. In fact, the learning context of these students before they are initiated into the GB classroom may vary to drastically different degrees. Variables include discipline heterogeneity, different learning histories and L1 background, professional expertise and the understanding of professional discourse (how knowledge is constructed in their discipline), and most importantly, genre awareness and genre knowledge (which is also connected to certain areas of subject-matter knowledge and professional expertise).

Of all these learner characteristics, several seem to stand out as the most influential to how learners approach task in the GB classroom (especially in the EFL context), as outlined by Kuteeva (2013)[5] and the current study. These important variables include students' "knowledge of disciplinary practices", "their understanding of academic genres", and "individual histories and agendas" (Kuteeva, 2013, p. 94). They have an impact on "learners' sensitivity and attention towards genre features in relation to purpose, audience and disciplinary practices" (Kuteeva, 2013, p. 94), and to some extent, determine whether the learner could be "analytical" in the GA tasks, and the ability of becoming a "writerly reader". Kuteeva's study looked at four groups of students with across four disciplines (archaeology, history, literature, and media studies) in the humanities faculty. Under the circumstance that students shared the same

[5] It should be noted that Kuteeva's study did not deal with tasks in the classroom but genre analysis assignment tasks.

discipline, the present study further sift out genre awareness, learning styles and also general linguistic proficiency as the most distinctive initial parameters that influence the reception of tasks in the GB classroom.

The current study presents a tightly homogenous group of students of the same discipline, which is not the common scenario in the ESP tradition. Even so, their real learning experience in the classroom shows that they are more different than we think they are. First of all, they may have distinctive basic genre knowledge. For example, the pre-test scores showed that Long and Xiao were among the "top" and "bottom" students in the knowledge of the prototypical genre structure and lexical level generic features. Xiao's accuracy in the pre-tests was much lower than Long's, achieving 40% (versus 70%) and 3% (versus 54%) in the lexical and genre test, respectively. Xiao also emphasized in her recall interview that she "had not seriously read a full version of or written any research paper in English before". Secondly, "advanced" as they are (postgraduate students majoring in English), they may possess different general linguistic proficiency as well. This was attested by Xiao's report of her learning history, and her constant struggles with basic comprehension of academic papers at the word level. These, however, were never mentioned by the other case-study learner Long, who started off with relatively high proficiency and seemed to be confident about her English and understanding of linguistic features throughout the course.

Learning styles also played a central role. Xiao can possibly be described as a more "bottom-up" learner (bottom-up cognitive processing style in Ehrman & Leaver, 2003) who was sensitive to details and particulars rather than the structure and system. This often resulted in her weakness to noticing the system and synthesizing knowledge, and her difficulty in finding the "internal logic linking the lessons together". She needed more repetition and constant reminders of the whole picture when the parts were focused on, or she would have problems positioning them. Xiao, although very attentive and hardworking, was most of the time unable to catch the major points in class concerning generic features. Her learning outcome was profoundly influenced by her previous learning style and limited proficiency in academic English: rote learning, memorizing new vocabulary, and bottom-up focus. These took her analytical energy to attend to the more sophisticated level of genre awareness and rhetorical context. Long, in contrast, was relatively more "global" (top-down) in cognitive processing style. With more prior knowledge of genre, higher English proficiency and a top-down learning style, she found it much easier to pick up the teacher's major teaching points, classroom routines and the macro genre structure. Her synthesis of knowledge enabled her to gain a much deeper and more sophisticated understanding of genre structure than Xiao. Similar to the case described in Cheng (2008a), she even had time to "free up some analytic energies that led to her magnified attention to other features that she may have only been implicitly aware of or even unconsciously used in the past" (p. 408) .

It is important, at this point, to address some special features of EFL learners which have been under-researched in the ESP literature where the focus was usually on the ESL context. For this group of EFL learners, their basic linguistic problems centred on their weakness in applying the words/phrases already in their repertoire into appropriate academic generic contexts. They did not even know "where to start writing" with ideas ready in their mind, as constantly reported by many students in the class. Similarly, in Yasuda's (2011) study, the GB pedagogical tasks were reported to have "created a salient link between form and function and gave the students an initial framework for production" (p. 125). Students in her study commented that "they had 'general knowledge,'' but their 'local knowledge' that could be used in a specific domain had not been substantially developed at the very beginning of the semester" (Yasuda, 2011, p. 125). This amplifies the need for pedagogical tasks to particularly focus on the linguistic realizations of rhetorical functions in the form of certain words or phrases which learners may not realize or notice. As suggested by Yasuda (2011, p. 125), "A deliberate effort to teach and expand these linguistic resources explicitly, particularly in GB tasks, is meaningful in FL instructional contexts".

Furthermore, the history of English education in China (may as well be in other EFL contexts) has led to an over-emphasis on grammar and reading comprehension (focusing on content). As shown in Xiao's weekly report, she constantly struggled to familiarize herself with the analysis of generic features and rhetorical parameters, but was used to focusing on comprehending the *meaning* of the text by looking up new words. Unlike second language writers in the ESL context, novice writers in the FL context tend to experience writing only within the confines of the classroom. Due to the features of academic discourse in schooling and the exam-oriented culture, materials in textbooks and tests are mostly inauthentic, and written for reiteration of content information. FL writers are likely to approach writing tasks as if such texts are autonomous and context free. This belief may "prevent them from seeing writing as a social action that is performed through interactions of purpose, audience, and linguistic choice" (Yasuda, 2011, p. 112). In addition, their English learning history also contributes to their proficient skill in vocabulary drills, which was exhibited in the relative ease in learning lexical items for both case students through corpus-based exercises, compared with the learning of genre structure through rhetorically oriented GA tasks. As pointed out by Long, they seemed to be particularly familiar with the learning of "phrases, phrasal verbs and verb phrases since high school" (week 4 report).

In summary, EFL learners in the Chinese context are distinctly characterized by their pronounced needs to attend to form-function relationship in pedagogical tasks, because they tend to have (a) learning histories of focusing on new vocabulary, grammar and information when they read, (b) a misconception that language is all about sentence grammar and vocabulary, and (c) difficulty in attending to both form, information and function at the same time (in line with Yasuda, 2011). Teachers in this context have to gradually switch their primary focus on form and information to genre, linguistic features and rhetorical context when these novice writers are first introduced into an ESP GB classroom.

3.3.2 Learners' Perceptions

When it comes to the actual interaction with the task, not only the learners' general characteristics, but also their specific perceptions, orientations and goals affect their approaches. These perceptions include perceptions of genre and of task itself.

3.3.2.1 Learners' Perceptions of the Nature and Purpose of Task

Tardy (2009) noted that she had almost overlooked the "central importance of task", that is, how a classroom task is presented to and perceived by learners. She observed the learners' learning process in class, which "has not been the major area of study within research of the writing classroom" (p. 101). In a similar vein, Seedhouse (2005) questioned the construct validity of the predominantly conceived "task-as-workplan" perspective. He points out that the research focus should shift from "task-as-workplan" to "task-in-process", because it is worthwhile to study task from an emic perspective of what happened during the task interactions and what the students are actually focusing on, rather than relying on an overwhelmingly etic one for quantitative analysis of outcomes.

According to the classroom observation notes in the current EFL context, there are several ways in which students perceived the pedagogical GA task (see Table 2): (a) GA task as "question and answer" quizzes similar to "reading comprehension" in exams; (b) GA task as a way to learn linguistic features (e.g. "academic language" and new vocabulary); (c) GA task as a guidance to their own exploration of genre and therefore helpful to analysing genre features in the assignments and the assessment; (d) GA task as a platform to develop generic skills that can be transferred to other contexts of learning in their later stages of academic life. The first two perspectives were observed in the elementary stage of working with tasks in this course, where students were still accommodating themselves to the new approach of looking at academic writing. Xiao and Long, as most other students in the class, have experienced the transition from the first two perspectives to the third, while only very few students (even seldom for Long) might be able to reach the advanced perspective on task as in (d). Long mentioned that the pedagogical tasks were useful as a guide for completing the assessment task of the course. She could successfully fulfil the teaching goals and internalize the knowledge the teacher wanted them to know, but she seldom went beyond that. Xiao, even though it looked as if she missed a lot of points in class due to various reasons (memory, low proficiency in academic language, processing style), she could always pick up something useful for her own learning, such as new academic vocabulary and bundles she was "fond of". She seemed to have her own agenda in working with tasks. If the majority of students could shift their perspectives on task, they would be able to attend to the components more useful and relevant to their own level of development than being confined by the teacher's instruction, and to gradually learn to develop more autonomy in learning.

Table 2: Illustration of Ways of Approaching GA Tasks

Ways of approaching task	Example of extracts from retrospective reports
a) GA task as "question and answer" test items similar to reading comprehension in exams	"I didn't get the right answer for Task 1". My division between the second and the third move was not the same as the teacher's, and I don't quite understand why" (From Xiao's report in week 4)
b) GA task as a way to learn linguistic features (e.g. "academic language" and new vocabulary)	When I saw the word "qualitative study", I was like, wow, that's the word for "Zhixing Yanjiu" (质性研究)！I thought I knew many English words, but I didn't know how to use them in academic context. I cannot map them with my Chinese academic knowledge. They are not in my productive vocabulary list. I am still struggling with the understanding of the meaning of the text, not paying attention to other things yet…like the "purposes" the teacher mentioned. I could only sense a bit. (from Xiao's report in week 6)
c) GA task as a guidance to their own exploration of genre (such as in assignments and assessments)	This (referring to the text in the genre exemplar) is similar to the analysis I did after class describing the subjects. First of all, it talks about sampling, and then the demographic information about the subjects, and the instruments and the validity and reliability. I think many papers are organized in such a way. I can make use of these expressions to describe participants in my own paper too. (from Long's report in week 7)
d) GA task as a platform to develop generic skills that can be transferred to other contexts of learning in their later stages of academic life	I like this discovery-based experiential learning. The genre analysis task in this writing course is very effective by making us to find out the purposes and prototypical features of research papers by ourselves with some guidance. I think this is complementary to the research method and statistics course where we focus on the data and skills in research. The rhetorical aspect is the one we often ignore while reading a paper. (from Long's report in week 15)

3.3.2.2 Learners' Perceptions of Genre Knowledge

According to the findings of the weekly recall interviews and the classroom observation notes in this study, there are three aspects that learners paid attention to in their genre analysis: information and content (sometimes with focus on literal meaning or dictionary semantic meaning only), language pattern, and rhetorical purposes. These three aspects are intertwined and realized in a single coherent text as a whole. These are not three levels of comprehension in reading, but three perspectives to see a text. Using Hirvela's (2004) analogy of "mining" (p.

115), a "miner" can be mindful of different aspects in writing during reading, just like "exploring the source text for the input being sought" (p. 115). The input for identification or the "goals" are to be set up and labelled ahead of time before reading, such as the three aspects of reading mentioned above: mining for information, language features and rhetorical purposes. Information reader/miner seems to focus more on information, meaning, or "content", the "what". The rhetorical reader/miner focuses more on "purpose", "why" the author writes in this way. Writerly reader is the highest level of reading to write, who syncs with the writer, and is "continually trying to be the writer" (p. 119). Chinese students in the EFL context are typical of linguistic or language readers--who are used to "focus on form" only. The *primary focus* a learner brings to the reading determines which type of reader a person is, i.e. which aspect in the text is foregrounded or backgrounded. In this study, I found that for both information readers and rhetorical readers, they can also be a language reader at the same time. A quote from Tardy (2009) well illustrates the point being made here:

> When students first approach genre tasks, they tend to think of form and content as separate entities, that distinct from the rhetorical context or procedures… As they have multiple encounters, the linguistic elements gradually became of "second nature", or automatized… With practice, boundaries between dimensions of knowledge become fuzzier. And writers may find themselves foregrounding or backgrounding different knowledge dimensions when responding to different tasks. (p. 23)

From previous description of Xiao, one can probably speculate that she was a language reader for most of the time and, to be exact, a general language reader. She tended to pay more attention to the general language features such as lexical bundles and academic vocabulary which she considered as contributing to making the text more scholarly, instead of analysing the specific language features in generic context. She screened out most of the "content-based" tasks, taking the GA tasks as language exercises. Long was, for most of the time, a rhetorically-aware language reader. She paid attention to the language features that help express certain rhetorical functions, and even try to link them with the professional subject-matter knowledge. An example is shown below:

> In this limitation section of the article, the wording was a bit tricky. After stating the common limitation of self-report, it says that "calculation of noticing in the context of opportunities to notice *mitigated the likelihood* of overstating the occurrence of noticing in this study". Is that a self-defence?

> Because at the end, the author still admits that "the analysis was clearly unable to capture the full extent of…" (extracted from Long's report in week 14)

The ultimate goal of the course was to help them become a free independent reader who can switch between the different ***positionings*** as a reader depending on their needs, and eventually transfer the knowledge gained in reading to writing. Using Cheng's (2006) terms, the benefit of the course was to build meaningful connections between "*noticing* genre and *performing* genre, or *writerly* reading of genre and *readerly* writing of genre" (2007, p. 304; emphasis in original). Yet the language-based component might have been misleading to weaker students like Xiao, who had been used to grammar drilling, and almost considered it as a grammar and vocabulary course. This means that we have to be cautious about the possibility that what students are intended to read might be different from what they are actually reading.

Nonetheless, by the end of the course, these case study students reported that they gradually learned to "read for different purposes" according to their needs, but due to limited cognitive processing capacity, they probably "need to read multiple times in order to attend to multidimensional genre knowledge".

In pedagogical design, I would like to argue that there is no need to take "genre acquisition" or "genre awareness"[6] (Johns, 2008) as contradictory pedagogical goals being distinct from each other. They are probably different stages of genre knowledge development. Students can "reproduce" the genre first in a basic and rather restricted form with the help of the instructor; when they have gained a certain understanding of the form of a genre, their "awareness" towards a more advanced level of genre knowledge would then be raised. For example, it was found that in the first several weeks of instruction and rewriting, the two featured students saw genre as static templates (the shared schematic organization of text in the discourse community), which, as apprentices, have to be "conformed to". This understanding was reflected in the participants' mechanical insertion of "templates" into rewriting or mapping the template with every piece of reading they encountered. At this stage, what was involved might be some sort of "acquisition" of a template and prototypical linguistic features including lexical phrases. The intermediate level is the ability of "recontextualization", which Cheng (2007, p. 303) defined as "to use the generic feature with a keen awareness of the rhetorical context...see every writing

[6] GENRE ACQUISITION focuses upon the students' ability to reproduce an instance of a text type, often from a template, that is organized, or 'staged' in a predictable way. GENRE AWARENESS is "realized in a course designed to assist students in developing the rhetorical flexibility necessary for adapting their socio-cognitive genre knowledge to ever-evolving contexts." (Johns, 2008, p. 238).

task as representing a new rhetorical context". At this level, learners were able to recontextualize what they have "acquired" into a different situated rhetorical context. Both learners Xiao and Long did not reach this stage until near the end of the course, as reflected in their rewriting assignments for the Results and Discussion sections. The highest level is critical awareness of the variability, complexity and flexibility of the genre structure as a result of the different specific knowledge construction conventions of the field. Long only slightly touched the third level from the perspective of subject knowledge and content, not rhetorically.

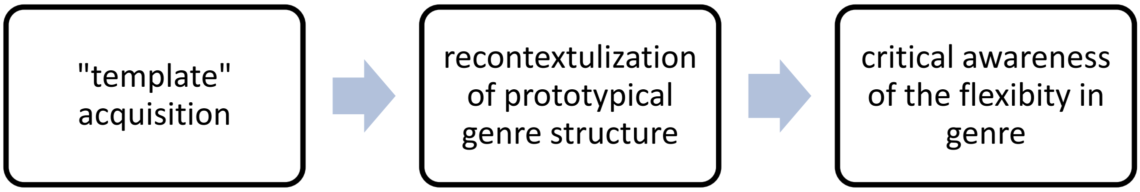

Fig. 4. Developmental Process of Genre Awareness through Rewriting

An unsuccessful case under the academic literacies approach described in Tardy's (2009) book implicitly supports the argument above. She commented that "examining the complexity of a genre that is unfamiliar may be somewhat daunting or even counter-productive for novice writers" (p. 128). She further suggested that "sustained analysis of genres—analysis that takes place in cycles over an entire semester rather than covering all dimensions of genre at once--would allow teachers to break down the quite sophisticated task of multi-dimensional genre analysis" (p. 128). In other words, scaffolding the "learning of genre" may be more beneficial. The findings of this study also suggest that, learners could first examine the formal features of a text. After they have gained familiarity with the form and subject matter, they may return to analyse other dimensions, such as the rhetorical and process dimension--procedures of production, distribution, and reception (with reference to Tardy's (2009) model of four dimensions of genre knowledge). What they learn in the later analyses is likely to re-inform and restructure their understanding of generic forms. Using a relatively more explicit text-analysis approach (instead of "rhetorical composition" approach) at the initial stage is also shown to be effective for novice writers Long and Xiao in this EFL context, who have even less linguistic exposure to academic genres than those in the ESL context.

4. Conclusion

This study looks at how learners in the same class respond differently to tasks in the GB classroom throughout a semester. With two students of distinctively different starting proficiency as cases, it was found from their retrospective reports that their learning trajectories are influenced by many intertwined variables. The major factors that influence how well they received the tasks in class were learner characteristics they brought to the class, including their level of genre knowledge, learning style, and general language proficiency. More importantly, Chinese EFL learners have other characteristics that local EAP teachers have to seriously take into account, including the emphasis on grammar drilling and reading comprehension (instead of rhetorical reading).

Apart from learner characteristics, which are more related to the background they brought to the class, their perceptions of learning, tasks, and genre are more specific factors that influence how they received the pedagogy. Specifically, in terms of perceptions of task, there may be several levels: from merely seeing it as "question and reference answer" like reading comprehension exams, to seeing task as a platform to develop generic skills that can be transferred to other contexts of learning in their later stages of academic life. Finally, and more linguistically, it was found that no matter how "advanced" in general language proficiency, learners may experience stages of genre knowledge development while doing the genre analysis: they seemed to start from seeing genre as static template to recontextualizing the prototypical structure and finally to critical awareness of the prototypes. These stages might be unavoidable in the learning process of genre (at least for the cases in this study) and EAP teachers may consider how to integrate them for curriculum design.

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The Relationship among EFL Learners' Collaborative Writing, Critical Thinking, and Writing Anxiety

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Abstract

Involving the learners in collaborative writing (CW) can increase the interaction among learners in the writing class (Haji Jalili & Shahrokhi, 2017). Moreover, students need to develop their critical thinking (CT) skills (Simpson & Courtney, 2002). Taking these issues into account, this study aimed at finding the relationship between collaborative writing, critical thinking and writing anxiety. Thus, 80 intermediate female learners in 4 intact classes were selected through Iran Language Institute Placement Test (ILI) and participated in this study. Before administering the questionnaires, the researchers asked the learners to write 8 compositions in pairs to get familiar with concept of collaborative writing. Then, the researchers used three questionnaires, namely, Second Language Writing Anxiety Inventory (SLWAI), Collaborative Writing Questionnaire (CWQ), and Cornell Critical Thinking Test for data collection. Learners were asked to fill out the questionnaires in 3 sessions. Having collected the data, the researchers analyzed them using Pearson Product correlation coefficient. The results indicated a positive correlation between collaborative writing and critical thinking; however, a negative relationship between collaborative writing and writing anxiety and between critical thinking and writing anxiety. The implications are discussed in terms of importance of CW, learners' CT and their writing anxiety in EFL classes.

Keywords: collaborative writing, critical thinking, writing anxiety, EFL learners

Introduction

Being able to write effectively is an important aspect of both communication and academic setting (Fardadmehr & Khalaji, 2017). As a result, training effective writers is a significant purpose in L2 language education (Ghoorchaei, Tavakoli, & Nejad Ansari, 2010). One of the methods that enable learners to enhance second language writing skill is through collaborative writing (CW) (Adams & Hamm, 1996). CW has been defined as “the production of a single text by co-authors or group authors” (Ede & Lunsford, 1985, p.14).

Peer feedback in writing classes is an effective means of improving L2 learners’ writing skill. As Lantof (2000) states, the talk generated during the co-construction and revision of a piece of writing helps researchers to access the learners’ cognitive processes and investigate the effect of that talk on language learning as reflected in the students’ writing (Swain, 2000). One of the advantages of CL in general and CW in particular is developing critical thinking (CT) skill which is possible through different viewpoints that are provided during collaboration (Barnes & Todd, 1977; Slavin, 1990).

According to Hashemi, Behrooznia,and Mohaghegh Mahjoobi (2014), "since higher-order thinking skills are reasonably required for success in a knowledge-based society, college students need to develop critical thinking skills in order to analyze, argue and make judgments about what they confront in their daily lives" (p. 72). Chafee (1992) suggests that, CT is "our active, purposeful, and organized efforts to make sense of our world by carefully examining our thinking, and the thinking of others, in order to clarify and improve our understanding" (p. 29). It also encompasses interpretation, analysis, evaluation, inference, explanation, and self-regulation (Facione, 2006).

Writing skill can affect learners' academic life as well as their professional careers (Geiser & Studley, 2002; Light, 2001). Without appropriate writing skills at school, students will probably fail to express their ideas and opinions, interact effectively with peers, colleagues, co-workers, and the community in general (Connor, 1987; Crowhurst, 1990). This fact confirms the importance of CT since it entails critical reading and writing skills (Browne & Keeley, 1981; Paul & Nosich, 1991). Accordingly, learners need to develop their CT skill in order to improve their writing skill (Simpson & Courtney, 2002).

Unlike CT which can positively affect writing skill, (Simpson & Courtney, 2002), writing anxiety has negative effects on writing outcomes (Bloom, 1980; Leki, 1990). There are different definitions for writing anxiety, which is sometimes called writing apprehension. According to Bline, Lowe, Meixner, Nouri, and Pearce (2001), writing anxiety is a kind of anxiety which is specific to writing skill. Writing anxiety can cause a fear of writing in learner which is stronger than advantages of writing ability. This anxiety may lead to relatively enduring hate or fear of writing (Haji Jalili & Shahrokhi, 2017). According to McLeod (1987), writing anxiety is a negative feeling that interferes with some parts of writing process. Daly and Miller (1975) suggest that writing anxiety is related to people's tendency to accept or reject writing activity.

To summarize, in spite of recommendations for the use of CW (Barron, 2003; Fardadmehr & Khalaji, 2017; Lee, 2011; Storch & Wigglesworth, 2007, 2010), most of the learners do not know how to write collaboratively since it is not applied in the classes at all. Moreover, according to Johnson, Johnson and Smith (1991), collaborative learning can enhance students' cognition and decrease students' anxiety in the area of content learning. Since research studies on L2 writing anxiety are dearth, further research on L2 writing anxiety is necessary in order to understand its nature and its detrimental effects on students' writing performance. In other words, collaboration and interaction during writing might facilitate students' development in L2 writing ability and reduce students' anxious feelings about L2 writing (Cheng, 2004; Haji Jalili & Shahrokhi, 2017). Thus the purpose of this study was to investigate the relationship among collaborative writing, critical thinking and writing anxiety.

Review of the Literature

Collaborative Writing

CW has been paid much attention since early 1970's as Bruffee (1973) argued that students were able to produce better work when they worked collaboratively. With the advent of communicative approach, collaborative learning (CL) such as pair and group work grew more popular. As a consequence, a considerable number of studies tried to investigate the effectiveness of CL situations on L2 learning (e.g., Dobao, 2012; Storch, 2005; Swain & Lapkin, 1998, among others). CL, grounded in Vygotsky's Socio-Cultural Theory (SCT), is a social activity in which the development of learners' knowledge depends on the interaction with others (Vygotsky, 1978). From among the language skills, writing skill appears to be the skill at an advantage in this regard since the needed collaboration between the novice (the students) and the expert (either the classmates or the teacher can easily shape in the classroom (Vygotsky, 1978). As L2 learners mostly appear to be lagging behind in this skill, the amount and the type of scaffolding or peer feedback provided can be very important (Aljaafreh & Lantolf, 1994). Liu and Hansen (2002) defined peer feedback as:

> The use of learners as sources of information and interactions for each other in such a way that learners assume roles and responsibilities normally taken on by formally trained teacher, tutor, or editor in commenting on and critiquing each other's drafts in both written and oral formats in the process of writing. (p.75)

One of the most influential theories in the realm of education is Vygotsky's SCT which suggests that human cognitive function can be mediated by cultural artifacts, activities and concepts (Lantolf, 2000). According to SCT, learning occurs in interaction (Ellis, 2000). One of the concepts of SCT is the zone of proximal development (ZPD) which suggests that an individual's performance will be different while he acts individually, and when he is supported by more knowledgeable or capable peers (Vygotsky, 1978). From Vygotsky's point of view, "what the child is able to do in collaboration today he will be able to do independently tomorrow" (Vygotsky, 1978, p. 211).

CW emphasizes active interaction between students with different skills and background knowledge (Tsai, 1998, as cited in Fardadmehr & Khalaji, 2017). Peer interaction can be an effective way to help learners improve their L2 skill (Ahangari, 2014; Maarof, Yamat, & Li Li, 2011; Behin & Hamidi, 2011; Farrah, 2012). Lowry, Aaron and Rene (2004) give a more complete definition for CW:

> An interactive and social process that involves a team focused on a common objective that negotiates, coordinates, and communicates during the creation of a common document. The potential scope of [Collaborative Writing] goes beyond the more basic act of joint composition to include the likelihood of pre- and post-task activities, team formation, and planning. Furthermore, based on the desired writing task, [Collaborative Writing] includes the possibility of many different control approaches, team roles, and work modes. (pp. 72-74)

CW refers to the process which provides participants the opportunity to explore, discuss, cooperate and develop learning capabilities (Dobao, 2012; Heidar, 2016). Practically too, researchers have reported numbers of advantages of the use of collaboration in wiring. For example it can enhance students' interaction in the EFL classroom, lower the anxiety associated with completing tasks alone and raise students' self-confidence (Raimes, 1998; Reid & Powers, 1993; Rollinson, 2005). According to Ghufron and Hawa (2016):

> In collaborative writing, students in pairs or triads write a formal paper together. Each student contributes at each stage of the writing process: brainstorming ideas, gathering and organizing information, drafting, revising, and editing the writing. It means that in pairs or triads, students will produce better work than when they work alone. Collaborative writing will improve document quality by pooling the strengths of group members. At the same time, individual weaknesses are caught by the group. (p. 428)

Swain (2000) suggests that CW can "encourage students to reflect on language form while still being oriented to meaning making" (p. 112). According to Reid (1993), CW can increase learners' motivation and helps them be more risk taking. Other positive effects of CW on overall writing performance can be producing pieces of writings that are more grammatically accurate

(Storch, 1999; Storch, 2005; Wigglesworth & Storch, 2009), more linguistically complex (Storch, 2005), better content, organization and vocabulary (Shehadeh, 2011). Moreover, CW has a significant effect on fluency of writing (Fardadmehr & Khalaji, 2017.

Soleimani, Modirkhamaneh and Sadeghi (2015) reported that the performance of the students in the collaborative group was significantly better than those in the individual group in terms of fluency and accuracy but not complexity. Regarding learners attitude toward CW, the students had positive perceptions of CW in general. Storch (2005) suggests that CW can make opportunities for pooling of resources and comparing ideas, perceived academic and social benefits (Brown, 2007), and a sense of accomplishment from editing each other's work (Chao & Lo, 2011).

Critical Thinking and Writing

Without any doubt "the ability to think critically is one of the primary goals of education in the 21st century that has direct connection with language teaching and learning as well as with our daily life" (Stefanova & Bobkina, 2017, p. 252). According to Ennis (1985), CT is a reflective thinking with the aim of believing and doing things which needs various proficiencies, abilities and tendencies that result in reasonable reflective thinking. CT is defined by Nickerson, Perkin and Smith (1985) as "understanding what to trust in various contexts reasonably and requires the ability to judge the truth value of some assertions, to measure the proof available, to evaluate the dependability of inferences, to build arguments and alternative hypothesis" (p. 58).

In many ways, writing skill can affect a learners' life (Light, 2001) and the positive role that CT plays in improving this important skill cannot be ignored (Golpour, 2014). In the path of learning a language, the ability to write a cohesive, understandable, meaningful and extended piece of writing can be challenging for learners. A good piece of writing should be a reflection of the writer's CT. For this, a writer should generate some content and arguments that he/she can then defend and from which he/she can draw conclusions (Kurland, 2000, as cited in Golpour, 2014). Since the important role of CT on learning is obvious today, puzzling out the students' CT ability seems to be crucial in this rapidly changing world (Sheykhi Behdani & Rashtchi, 2016; Stupple, Maratos, Elander, Hunt, Cheung, Aubeeluck, 2017).

Writing Anxiety

Anxiety as an effective factor on language learning has drawn much attention recently (Kurt & Atay, 2007). Tsui (1996) suggests that like learning other skills, learning to write can cause anxiety as well. Learners may be challenged by “distress associated with writing” and develop “a profound distaste for the process” (Madigan, Linton, & Johnson, 1996, p. 295). According to Thompson (1980), writing anxiety is a “fear of the writing process that outweighs the projected gain from the ability to write” (p.121). Thus, low apprehensive writers tend to enjoy writing frequently, and are more confident in their abilities to write (Faigley, Daly & Witte, 1981).

Different levels of anxiety can affect writing performance of EFL learner (Jebreila, Azizifara & Gowhary, 2015). According to Na (2007) successful outcomes of writing is affected by the factor of anxiety. However, for most people writing is less anxiety provoking in comparison to speaking because of more time they have to decide about the content and listening because of greater control over the content and language of the message (Cheng, 2004). However, for many people writing is a difficult, tiring and anxiety rising activity not only in L2 but also in L1 (Bloom, 1980; Leki, 1999). According to research negative effects of anxiety are obvious on writing (Aida 1994; Kitano, 2001; MacIntyre, Noels & Clément, 1997; Lee, 2002; Lee & Krashen, 1997; Shang, 2012) and CW can be used as one of effective techniques to reduce writing anxiety (Johnson, Johnson & Smith, 1991).

Since getting involved in writing activities is anxiety rising, the learners show a tendency to avoid writing situations (Haji Jalili & Shahrokhi, 2017). As a result L2 learners writing products are shorter and contain fewer intense words (Daly & Miller, 1975). According to Challob, Abu Bakar and Latif (2016), due to the complexity of writing and its various requirements, both novice and advanced EFL learners usually have negative perceptions towards writing which is generally known as writing apprehension or writing anxiety.

In order to confirm positive effects of peer feedback, Topping (2000) suggests that peer feedback can increase motivation through the sense of personal responsibility and can improve self-confidence. It can also reduce anxiety and help the students understand the fact that all learners face the same problems and weaknesses as they do (Grabe & Kaplan, 1996). Accordingly, findings of some studies (e.g., Challob, Abu Bakar & Latif, 2016; Haji Jalili & Shahrokhi, 2017), show that the students have positive perceptions toward collaboration. They suggest that collaborative writing can help them reduce writing anxiety and improve their writing performance.

Among learners that acquire writing skill professionally, some can write more analytically and evaluate some texts more critically (Stefanova & Bobkina, 2017). There are some studies conducted in the area of reading comprehension and CT. However, as Wingate (2011, as cited in Vynke, 2012) points out, that there has not been more research on students' perceptions and experiences of the challenges in implementing CT in academic writing. Writing as an important skill in learning a foreign language, which has an influential effect in academic communication, has not been attended a lot. Moreover, having a higher CT ability can enable learners to write in a subtle way and transmit their intentions appropriately. In this regard, becoming aware of learners' critical abilities, teachers can find some ways to help learners improve their critical mind to higher levels. Thus, it is thought that investigating these issues would help language teachers to be aware of the effectiveness of CW in an EFL context. Moreover, the relationship among CW, CT and writing anxiety rests on limited empirical research. Thus, the present study aimed to fill in this gap in the literature by investigating the relationship among these three variables. The following research questions were put forward:

1) Is there a relationship between EFL learners' collaborative writing and critical thinking?
2) Is there a relationship between EFL learners' collaborative writing and writing anxiety?
3) Is there a relationship between EFL learners' critical thinking and writing anxiety?

Method

Participants

Eighty female EFL learners in 4 intact intermediate classes in an English institute called Iran Language Institute (ILI), which is one of the most famous and popular English institutes in Iran, West Azerbayjan, Urmia, participated in the study. The learners were selected through ILI Placement Test which includes questions on grammar, vocabulary, reading and interview. The learners were within the age range of 16 to 22 (mean=19) and had different native languages including Turkish, Kurdish and Farsi.

Instruments

The following instruments were utilized in this study.

Iran Language Institute (ILI) Placement Test

The ILI placement test (i.e., r = .90 determined by the institute itself) including questions on grammar, vocabulary followed by an interview was used in the study. It served the purpose of homogenizing the participants in terms of language proficiency at the outset of the study.

Second Language Writing Anxiety Inventory (SLWAI)

Students' writing anxiety was measured through the SLWAI designed by Cheng (2004). The items that require reverse scoring are 1, 4, 7, 17, 18, 21, and 22. The scale ranges from 22 to 110. Lower scores indicate lower writing anxiety and higher scores indicate higher writing anxiety. The participants responded to a 5-point Likert scale for each item with 1, 2, 3, 4, and 5 signifying strongly disagree, disagree, neither agree nor disagree, agree, and strongly agree respectively. The questionnaire was piloted before the study with a sample similar to the main population and the reliability of it was 0.79.

Collaborative Writing Questionnaire (CWQ)

This study used the CWQ designed by Wu (2015). The questionnaire contains 12 questions measuring participants' perceptions of collaborative writing. A 5-point Likert scale is used in this questionnaire. In order to investigate the reliability of the questionnaire, the researchers piloted the questionnaire with a sample similar to the main population. The results of Cronbach's coefficient indicated the reliability value of 0.82.

Cornell Critical Thinking Test

CCTT, developed by Ennis (1985) was used to assess learners' critical thinking. It includes 52 items, all of which are in a multiple-choice format. The questionnaire was piloted before the main study and its reliability was .80.

Design

This study had a correlational design and explored the relationship among EFL learners' collaborative writing, critical thinking and writing anxiety.

Procedure

Before the study, by means of the ILI placement test in the beginning of the term, the researcher selected 4 female intact intermediate classes including 20 learners in each class. In order to make students familiar with collaborative writing, the researchers asked the students to write 8 compositions in pairs on the topics covered in their students' book in 8 sessions. Before starting the compositions, the researchers asked the learners to think on the topic carefully, share ideas, negotiate and interact with each other, and try to be more creative. During the writing of compositions, teacher monitored them and provided comments and guidance whenever needed. Having collected the papers, the researchers provided comments (e.g., good, ok, acceptable, etc.) and handed in the papers the next session. After the 8th composition, the researchers conducted the questionnaires. However, before administering the questionnaires to the main population, the researchers piloted them on a similar sample to check their reliability. Having made certain of their reliability to be used in the study, the researcher conducted them on the targeted population. Before distributing the questionnaire to the participants, the researcher told the participants that their identities would be kept confidential and that no information would be revealed. The questionnaires were distributed among the learners in three sessions. Regarding Collaborative Writing Questionnaire, the researchers explored the learners' perception and attitude toward collaborative writing. By means of Cornell Critical Thinking Test, the researchers analyzed the learners' critical thinking level and through Second Language Writing Anxiety Inventory, learners' level of anxiety was investigated. Having collected the data, the researchers analyzed them to answer the research questions.

Data Analysis

In this study, first of all, to ensure the homogeneity of the sample, one-Sample Kolmogorov-Smirnov Test was used on the ILI placement test. Moreover, after coding and scoring the items in the questionnaires and obtaining interval data, the researchers used Pearson Product correlation coefficient to discover the relationship among EFL learners' collaborative writing, critical thinking and writing anxiety.

Results

This section outlines and elaborates on the findings of the investigation pertinent to the preceding research questions.

Quantitative Data Analysis for the ILI Placement Test and Normality of the Population

At first, the researcher administered the ILI placement test to the learners. To ensure that the subjects were at the same level of proficiency, that is, to ensure the homogeneity of the subjects, the researcher checked the normality of the sample (Table 1).

Table 1: One-Sample Kolmogorov-Smirnov Test

		ILI Placement Test
N		80
Normal Parameters[a]	Mean	40.6455
	Std. Deviation	3.63917
Most Extreme Differences	Absolute	.078
	Positive	.078
	Negative	-.075
Kolmogorov-Smirnov Z		1.151
Asymp. Sig. (2-tailed)		.141

a. Test distribution is normal.

Kolmogorove-Smirnov indicated that the sample was normally distributed (i.e., $p=.14 > .05$)

Quantitative Data Analysis for the First Null Hypothesis

In order to test the first and second hypotheses, the researcher conducted Pearson product-moment correlation coefficient to explore the correlation between critical thinking and vocabulary learning strategies (Table 2).

Table 2: Descriptive Statistics for the Relationship between Collaborative Writing and Critical Thinking

	Mean	Std. Deviation	N
Collaborative writing	85.89	5.490	80
Critical Thinking	85.26	5.705	80

According to Table 2, the mean score of collaborative writing was (M=85.89) and critical thinking was (M=85.26). The results of Pearson product-moment correlation are presented in Table 3.

Table 3: Pearson Product-Moment Correlation Coefficient for the Relationship between Collaborative Writing and Critical Thinking

		Collaborative Writing	Critical Thinking
Collaborative Writing	Pearson Correlation	1	.975*
	Sig. (2-tailed)		.000
	N	80	80
Critical Thinking	Pearson Correlation	.975*	1
	Sig. (2-tailed)	.000	
	N	80	80

*. Correlation is significant at the 0.05 level (2-tailed).

Table 3 shows that there was a significant strong and positive association between collaborative writing and critical thinking [r = .97, n=80, Sig= 0.00<0.05].

Quantitative Data Analysis for the Second Null Hypothesis

Moreover, the researcher conducted Pearson product-moment correlation coefficient to explore the correlation between collaborative writing and writing anxiety (Table 4).

Table 4: Descriptive Statistics for the Relationship between Collaborative Writing and Writing Anxiety

	Mean	Std. Deviation	N
Collaborative Writing	85.89	5.490	80
Writing Anxiety	57.94	4.274	80

As Table 4 shows, the mean score of collaborative writing was (M=85.89) and writing anxiety was (M=57.94). The results of Pearson product-moment correlation are presented in Table 5.

Table 5: Pearson Product-Moment Correlation Coefficient for the Relationship between Collaborative Writing and Writing Anxiety

		Collaborative Writing	Writing Anxiety
Collaborative Writing	Pearson Correlation	1	-.244*
	Sig. (2-tailed)		.035
	N	80	80
Writing Anxiety	Pearson Correlation	-.244*	1
	Sig. (2-tailed)	.035	
	N	80	80

*. Correlation is significant at the 0.05 level (2-tailed).

Table 5 shows that there was a weak and negative significant association between collaborative writing and writing anxiety [r= -.24, n=80, Sig= 0.03< 0.05]

Quantitative Data Analysis for the Third Null Hypothesis

Moreover, the researcher conducted Pearson product-moment correlation coefficient to explore the correlation between critical thinking and writing anxiety (Table 6).

Table 6: ***Descriptive Statistics for the Relationship between Critical Thinking and Writing Anxiety***

	Mean	Std. Deviation	N
Critical Thinking	85.26	5.705	80
Writing Anxiety	57.94	4.274	80

According to Table 6, the mean score of critical thinking was (M=85.26) and writing anxiety was (M=57.94). The results of Pearson product-moment correlation are presented in Table 7.

Table 7: Pearson Product-Moment Correlation Coefficient for the Relationship between Critical Thinking and Writing Anxiety

		Critical Thinking	Writing Anxiety
Critical Thinking	Pearson Correlation	1	-.225*
	Sig. (2-tailed)		.042
	N	80	80
Writing Anxiety	Pearson Correlation	-.225*	1
	Sig. (2-tailed)	.042	
	N	80	80

*. Correlation is significant at the 0.05 level (2-tailed).

Table 7 shows that there was a weak and negative significant association between critical thinking and writing anxiety [$r= -.22$, $n=80$, $Sig= 0.04< 0.05$].

Discussion and Conclusion

The present study investigated relationship among EFL learners' collaborative writing, critical thinking and writing anxiety. The findings of the study indicated a positive relationship between collaborative writing and critical thinking. However, there was a negative relationship between collaborative writing and writing anxiety and between critical thinking and writing anxiety as well.

Regarding the positive relationship between writing and critical thinking, the findings are in line with the study conducted by Golpour (2014) which revealed a significant difference between the writing of high and low critical thinkers. It was found that the high critical thinkers' writing was better compared to the other ones. Moreover, the findings support the results of the studies conducted by Rezaei Fard and Talebinezhad (2018) and Hashemi, Behrooznia and Mahjoobi (2014) in that there was a positive correlation between learners' critical thinking ability and their writing. Similarly, this finding is consistent with Brookfield (1987), McPeck (1990), and Watson and Glaser's (1980) contention maintaining that argumentation plays an important role in critical thinking. In other words, through involving students in collaborative writing and scaffolding, along with encouraging them to go beyond texts, students can gain command over their thinking, and reach the lifelong ability in critical thinking. Critical teaching is an effective approach for improving learners' autonomy and their social skills. Moreover, critical teaching can help to enhance students' motivation toward learning English (Huang, 2004; Liang, 2002 as cited in Rezaei Fard & Talebinezhad, 2018).

Moreover, the findings are in line with Corcelles Seuba and Castello (2015) who looked at how collaborative argumentative writing contributes to the practice of philosophical thinking.

Results showed that students used philosophical concepts in their own discourse. Furthermore, all the students stated that CW improved the quality of their texts and their learning the philosophical genres and philosophical discourse. In line with the previous research on the relationship between collaborative learning and critical knowledge construction (e.g., Storch, 2002), this study offered evidence on the relationship between collaborative writing and creating new meaning. In addition, the findings support the studies which indicated that collaborative writing improved learners' higher-level thinking skills, and critical thinking (Neumann & McDonough, 2015; Wong, Lin, Sung, & Lin, 2011). In fact, this collaborative writing process promoted active reflection (Latawiec, Anderson, Ma, & Nguyen-Jahiel, 2016).

Regarding the relationship between collaborative writing and writing anxiety, the findings are consistent with Haji Jalili and Shahrokhi's (2017) and Erdogan's (2017) studies which disclosed that collaboration led to the reduction of learners’ and teachers' writing anxiety rates. Moreover, findings of this study support Jahin's (2012) study which aimed to assess the impact of peer reviewing on their writing apprehension level and essay writing ability. Results of data analysis showed positive impacts of peer reviewing on experimental group participants' writing apprehension and essay writing ability. In addition, Wu (2015) found that collaborative writing seems to be more effective in decreasing the writing anxiety of the EFL college students.

Challob, Abu Bakar and Latif (2016) perceived that the collaborative learning activities helped students reduce their writing apprehension and improve their writing. Moreover, Balta (2018) determined that students with low writing anxiety were more successful in writing texts. The findings are in line with the findings of Berg (1999), Kastra (1987), and Zheng (2008), who pointed out that peer feedback makes the learning environment less anxious and stressful since they interact with each other, try to help their friends find out with their mistakes and help them correct their mistakes in a non-judgmental environment.

Regarding the negative correlation between critical thinking and writing anxiety, the findings were compatible with Anthony, Othman and Ismail's (2017) study showing that students with high critical thinking level felt less anxious in debate than those who were of moderate and low critical thinking levels. Moreover, the results are in line with Fahim and Nilforooshan's (2014) study which indicated a significant negative correlation between foreign language anxiety and critical thinking. Despite the importance of critical thinking and writing anxiety, the relationship between these two has not examined excessively in language education and previous studies conducted showed the beneficial impact of critical thinking and detrimental effect of anxiety in language learning. Since writing is one of the most important skills in English language learning in general and ESP in particular, reducing writing anxiety among them is of great importance. According to the findings of this study, highly critical learners were less anxious in writing which indicates the importance of enhancing learners' critical thinking in order to reduce their writing anxiety.

Conclusions and Recommendations

Findings of the present study clearly show that CW can be an important pedagogical tool in the learning and teaching of writing in EFL contexts, increasing their CT and reducing their writing anxiety. Writing teachers can provide opportunities for students to interact and work collaboratively in small groups. In this way, students can become more autonomous and critical thinkers as they exchange knowledge, skills, and strategies. In this learning environment, every student's contribution is valued, self-confidence can be built up and students can feel less nervous, less apprehensive, close to each other, and safe.

Since critical thinking level of the students is very important in their writing ability, the results of this study can be helpful to the language teachers in that they can consider the role of CW in enhancing CT among students. The enhancement of critical thinking ability depends on the nature of the curriculum. Thus, educational settings should provide a very wide range of opportunities (e.g., CW) for both teachers and learners to increase critical thinking in learners. Furthermore, teachers should provide any chance for the students to think about learning second/foreign language and boost a sense of problem solving to develop their ability to select the best and easiest way to get their goals. In fact, instructors can increase the logic of selecting the most appropriate strategies for language learning by promoting and emphasizing the ability of critical thinking skill.

Moreover, the findings can be helpful in the way of helping teachers to give students more responsibility in CW and cultivate positive attitudes and guide reflection so that learners take more responsibility for their learning English in general and writing in particular. Therefore, it is important to inform the students of the importance of CW and CT and increase their awareness of learner autonomy in order to facilitate the language learning process. Thus, teachers should provide students with a range of collaborative activities, such as collaborative planning, peer editing or peer response, among other things. Moreover, ESP teachers can enhance the writing skill in the professional or academic fields such as the writing of business letters, e-mails and reports through collaborative writing. Educators in any context will be able to discover the different aspects that could help collaborative writing to be part of the curriculum and teaching pedagogy all across the world.

In addition, technology is a powerful tool that could help make learning more engaging. Therefore, educators should use web tools as part of their instruction. Some studies demonstrated that technology has enhanced collaborative writing tasks through the usage of a software that combines “a word processor, a chat facility, access to a private notepad and online information sources” (Ballard & Ballard, 2013; Hafner, 2013). Teachers can use technological tools, such as wikis, could help students work together, share ideas and clarify thoughts (Wollscheid, Sjaastad, Tomte & Løver, 2016), resulting an increase in critical thinking throughout the collaborative writing process (Suwantarathip & Wichadee, 2014; Teow, 2014). Thus, computer-supported collaborative writing studies have demonstrated that collaborative writing environment incorporating critical thinking instruction has improved students’ thinking skills and higher levels of interaction with debates and clarifications made throughout the writing process (Aydin & Yildiz, 2014).

Another implication is for the wider world of national policymakers and curriculum developers of teacher education programs. Those programs should increase novice teachers’ awareness of the importance of CW and how to enhance learners’ critical thinking through learner-centered tasks.

As any human production, this study has some limitations. Catering for these limitations may also provide some applicable insights for conducting further studies. A serious limitation of this study was the gender of the participants who were limited to female learners. Hence, the results of the present study may be different with male learners. In addition, the results of this study may be unique to this particular population under investigation. In order to gain much more reliable information, other studies should be carried out with more participants in different contexts. The tools used in this study were the questionnaires, and the other useful tools such as observations, diaries, and think-aloud protocols which can add to the reliability of the findings were not used.

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The Development of a Needs-Based Curriculum to Teach Medical English

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Abstract

This study elucidates a four-year longitudinal study of developing a needs-based curriculum to teach medical English as a foreign language. Following Benesch (2001, 1996), a critical needs analysis was conducted to identify medical students' needs to develop a needs-based curriculum. One of the salient themes in the needs analysis was that to most of the medical students learning, medical English was challenging while they were acquiring sub-technical vocabulary and because of their unfamiliarity with the genre of medical research articles given that they had little formal instructional support in content courses in the Faculty of Medicine to improve their medical English competency. Thus, in this study, in light of a critical needs analysis, we aim to develop needs-based curriculum with medical students' involvement in the learning process by adopting critical pedagogy and enact through the following four stages for a medical English course: preparation, curriculum development, curriculum implementation and curriculum evaluation. To evaluate the curriculum and understand how well the learners gain the intended outcomes with the planned activities, we carried out a formative evaluation. We also conducted a summative evaluation to investigate learners' perceptions on their learning experience and to determine at which level the students achieved the learning outcomes in the following aspects: course content, teaching process, ESP practitioner and student relationship, teaching style and attitudes towards assessments of medical English course.

Keywords

Needs-based curriculum development, medical English, higher education, English for specific purposes

Introduction

Teaching English for specific purposes (ESP) aims to meet the specified needs of learners. In ESP courses, the learning process is considered a 'complete cycle', and the goal is to leave students with a feeling of fulfilment and satisfaction that they have learned something significant and beneficial to them. ESP courses focus on tailoring and satisfying the needs of learners by providing appropriate teaching materials to carry out a manageable task within a reasonable time and with a reasonable amount of effort. For example, ESP courses, such as medical English, should help students develop specific reading strategies, understand academic rhetoric and learn discipline-specific vocabulary to increase their competence (Chia et al., 1999). There is a consensus that an ESP course curriculum should be designed in light of a needs analysis (Brown, 2016; Author1, 2018). However, surprisingly, there are very few discussions in light of data on the curriculum development and evaluation of the curriculum in ESP. To contribute to the literature, we used both a formative and summative evaluations to answer the following two research questions regarding the medical English curriculum we developed with the collaboration of medical students and medical specialists:

Research Question 1: How well do the learners gain the intended outcomes with the planned activities in the curriculum?

Research Question 2: What are learners' perceptions on their learning experience and to determine at which level the students achieved the learning outcomes in the following aspects: course content, teaching process, ESP practitioner and student relationship, teaching style and attitudes towards assessments of medical English course?

Literature Review

In the relevant literature, many studies have focused on analysing the needs of learners, including medical students, and needs analysis is accepted as a vital prerequisite in creating effective course curricula and materials in higher education (Bocanegra-Valle, 2016; Author1, 2014; Author1, 2018). For example, Chia, et al. (1999) criticised the available English courses in Taiwan with the explanation that the courses were developed without carrying out a needs analysis. They investigated the English needs of college students in a medical context in Taiwan. Their study set out to describe the perceptions of medical students and faculty members to reveal the language needs of the students. The survey covered questions, which would reveal the importance of English, both in the students' study and in their future careers and their needs concerning English skills, and their suggestions to develop an English programme based on the results to satisfy the specific needs of the medical students. In another research, Blumenfeld and Miller (1991) aimed to identify requests expressed during clinical teaching in settings, including residents' work rounds, attending rounds, morning report and interns' clinic in a university-based general medicine service. The participants were physicians, medical house staff and medical students in a general medicine training programme. To reveal the objective needs, the researchers collected their data from various sources, including an ethnographic observation about the communication practice among the participants, field notes about their expressions and also a coding system that was developed to categorise the information requested as part of their study.

ESP curricula, syllabus design and content have been widely discussed across disciplines, such as medicine, engineering, industry and business. There are many obstacles to developing an effective ESP curriculum, particularly in developing countries. Yogman and Kaylani (1996) note that there may be barriers to performing a timely and comprehensive needs analysis, and there is flawed communication between content-area and language instructors during the development, planning and implementation of a curriculum. Another potential problem may arise from the hectic work schedules of content teachers across disciplines or their unwillingness to collaborate, and their limited participation in the curriculum development. Thus, obtaining the necessary information to realise aims could be a lengthy and uncertain process.

As Gashi and Jusufi (2017) clearly stated while ESP teachers have different roles, they may critically analyze and evaluate the situation of the target learners and after identification of their needs, setting the course goals and objectives towards achievable learning outcomes are easier, which is likely to lead to the development of an effective curriculum for ESP.

The needs-based curriculum has been a milestone in language teaching to increase the effectiveness of the English language courses for decades thanks to its effectiveness. A curriculum should efficiently identify and prioritise student needs considering students' cultures and expectations in the English language learning process. Curriculum development includes goal setting, syllabus design, materials design, assessment of learning and curriculum evaluation and also perceiving needs analysis as a political and situated process to focus on social and cultural inequality in education. Benesch (1996) conducted a critical needs analysis as a guide to EAP curriculum development for a paired ESL/psychology course. The target situation presented many contradictory demands on students from different levels of the academic hierarchy, including university, college, departmental (Psychology) and classroom (ESL) levels.

Benesch notes that this hierarchy complicates the development of curricula for teachers. However, when we reviewed the literature, surprisingly, the assessments of the needs-based curriculum have been under-researched. To contribute to this gap in the relevant literature concerning the development of a needs-based curriculum, we tried to consider all potential challenges, and we conducted a needs analysis for curriculum development as a longitudinal inquiry to draw a reliable picture (see Author 1). In the present study, we asked Turkish medical students to evaluate the needs-based curriculum that was developed for medical English in light of a longitudinal critical needs analysis (Author, 2014, 2018). The data were collected using surveys, ESP practitioner's reflective journal and observations.

Method

Theoretical Framework

This research is grounded in learner-centred approaches as theoretical framework following Berwick (1989) and Brindley (1989). In learner-centred approaches, language needs (i.e. perceived versus felt needs; product versus process oriented interpretations; and objective versus subjective needs) and also learners' attitudes, feelings and opinions are highlighted and considered while developing a curriculum. In the product-oriented interpretation in the curriculum design, learner needs are considered as the language that students need in target situations. In the process-oriented interpretation, the focus is on how students respond to their learning situation. Objective needs (e.g. their real-life language use, language proficiency) are identified before a course; however, subjective needs (e.g. expectations, attitudes) are identified when the course starts (Kaewpet, 2009).

Research Setting

In Turkey, medicine is taught in Turkish or English in higher education. Hence, when the instruction is provided in Turkish, students tend not to receive adequate academic English support to enable them to read medical journals and other resources in English because of their intensive programmes. This study reported the development of a needs-based curriculum with its assessment of the medical English courses at a Turkish state university where content courses in medicine were in Turkish. The main contribution of the present study is its focus on a humanistic approach and critical pedagogy in a peripheral higher education context, which is under-researched possibly due to the challenges it brings in a peripheral context. The critical pedagogical principle that is referred in this study is about the learning atmosphere that allows students to have their rights to express themselves and make their decisions in the process of curriculum development. In alignment with our aim, Benesch (1996) demystifies power relations while discussing critical needs analysis in an academic context that fosters democratic participation. Following Benesch (2001; 1996) to question and shape the curriculum and syllabus offered for medical English courses in a peripheral teaching milieu, the overarching aim of the present study is to encourage Turkish medical students to become actively involved in the course planning and learning process to raise their competence in medical English and thus make the learning process voluntary and purposeful.

Teaching Context

Medical school requires six years to complete: three years for pre-clinical education and three years for clinical education in Turkey. Pre-clinical medical courses tend to occur in lecture halls, and undergraduate medical students take both elective and compulsory courses. The clinical education component is based on practice in the university hospital. Medical English was taught and coordinated by an ESP practitioner in the pre-clinical years (years 1, 2, and 3). The language of instruction is Turkish, but some other elective content courses in medicine were in English in the pre-clinical years, such as Emerging Parasites in Turkey (year 1) and Advanced Research Techniques in Medical Sciences (year 2). To take the elective medical English courses, medical students must pass a university-prepared English language proficiency examination with a score of at least 70 out of 100 points, or they must have valid IELTS or TOEFL IBT scores or scores on other national English examinations. Hence, undergraduate medical students were expected to have a general English language background as a prerequisite to take the medical English course.

Results and Discussion

Curriculum Development Stages

In the present study, our focus is the four-stage needs-based curriculum development to teach medical English, as presented in Figure 1.

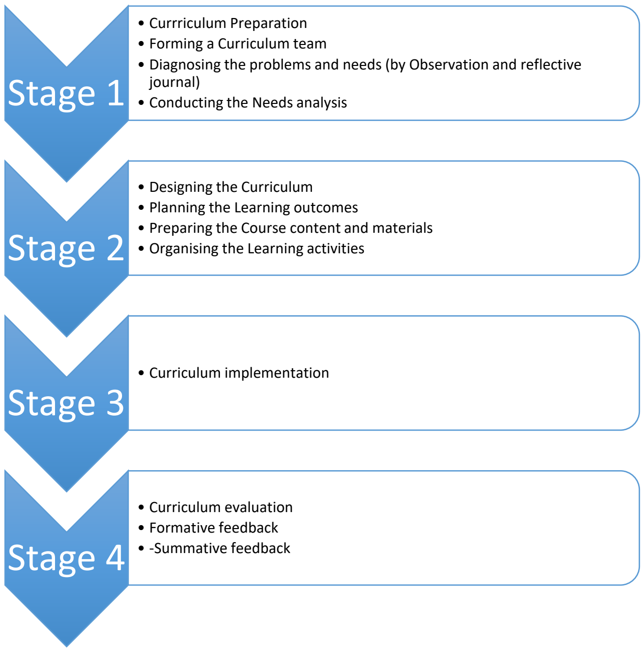

Figure 1. Curriculum Development Stages

Stage 1- Preparation for the Curriculum

Curriculum Development Team

The team consisted of more than 1,000 medical students and four medical specialists in the Basic Sciences units of the Faculty of Medicine and an ESP practitioner in the language department (see Zhang, 2016, for team teaching). As a course coordinator, the ESP practitioner- the first author- was an intermediary between students and medical instructors to support the teaching of medical English.

Diagnosing the Problems and Challenges

To gain a comprehensive view of the student's language challenges in medical English, we observed medical students and their interactions both inside and outside the classroom. In Turkey, medical students tend to be very open, critical and hardworking. They expect high marks from examinations they take. During medical English courses, we observed that most students preferred to memorise both technical and sub-technical English academic words through finding the meanings in Turkish rather than using learning strategies. Our observation showed that instead of using vocabulary-learning strategies, such as guessing from the context, medical students tend to look up unknown words. Because of this observed problem, the ESP practitioner collected feedback from students regarding the problems students highlighted during teaching while they were reading research articles in the medical English courses. Our observations revealed that most of the medical students focused on looking up medical words in English with which they were not familiar rather than trying to guess from the context, as shown by the written feedback from a first-year medical student below:

> "*…I am afraid, but reading in medicine [in English] is becoming a big burden when I see an unknown academic medical word in English or when I cannot remember the meaning of a word in Turkish or when I hesitate even if it is only a single word in the research article. I have a prejudice that I should know all the vocabulary to understand a paragraph, which hinders my comprehension and concentration* […] *fortunately, the dictionaries are partially helpful because translation of English medical terms are very similar to the original word that I look it up, such as the translation of the medical word 'prognosis' as 'prognoz' in Turkish* […]"

The ESP practitioner's observations and the reflective journal also revealed medical students' problems concerning learning strategies. The following extracts are from the ESP practitioner's reflective journal:

> *"Some of the keywords from the course today were 'morbidity and mortality' and also 'pandemic and epidemic'. I focused on cognitive strategies and presented the new medical terms by guessing the meaning from the context. At first, medical students found it difficult, but later, they said that these strategies could work, and it made the passages easy to understand. I said to my students that these are highly frequent words in medicine. They were very attentive while I was explaining the definition and highlighting the differences, which had a noticeable effect on students, particularly when I said that it can be an examination question, and all of them took notes."*

Our finding suggests that lack of awareness on learning strategies among medical students seems to be a salient problem that hinders learning medical English, which sould be highlighted in the curriculum in ESP. Also, this finding calls for learning strategy training in ESP courses.

The second observed problem was medical students' unfamiliarity with medical genres, which seems to discourage them from skimming research articles. An extract is below from the ESP practitioner's reflective journal:

> *"When I opened a medical journal website, students were watchful and they were all ears. They said that they were not courageous enough to download an article to read because they had a bias that their English knowledge would be inadequate, and they were very afraid of not understanding. When I downloaded a research article that was written by their content course lecturers in Anatomy, they were excited and happy. I saw some of the medical students downloading articles in the lecture halls [in the break times] and talked to them about their interests and willingness."*

After the common problems most of the medical students expressed and we observed were identified, the ESP practitioner and medical students regularly contacted the content instructors for collaboration and guidance to find a remedy for efficient curriculum development, particularly for the second- and third-year students, because of the ESP practitioner's paucity of content knowledge in medicine (see Ferguson, 1997). This process helped us diagnose the problems with a specific focus on the problems that the students expressed that they had:

- a lack of use of vocabulary learning strategies,
- a tendency to translate texts into L1,

- a common belief that if they did not know one or two words in a text, it was difficult to grasp the main idea, and
- bias and feelings of discouragement due to unfamiliarity with medical genres.

Needs Analysis

In the previously published study with the same group of medical students, a longitudinal critical needs analysis was conducted to diagnose the English for academic purposes (EAP) needs of 525 Turkish medical students (see Author1). In contrast to previous literature, the findings in the published study, which was conducted in the same research setting, revealed that the qualifications of the ESP instructor were the most salient item, which suggests the need for scaffolding help and guidance medical students may need while learning medical English andalso the need for affective-humanistic approach. Foreign language teaching in Turkey tends to be criticised because of its emphasis on teaching grammar, particularly in state schools. Indeed, we observed that grammar translation method affected most of the learners negatively and decreased their confidence in their proficiency of English. The needs analysis conducted in 2014 within the same research setting revealed five remaining important issues as needs, in descending order as follows: the learning methods and strategies used by medical students, medical students' negative attitudes towards English, the settings in which English is used, medical students' English competency goals and their self-perceived shortcomings and problems. Medical students' self-perceived shortcomings included the challenges they faced in understanding medical articles, their difficulty expressing themselves while talking in English, an inadequate level of English learned in the classroom, problems understanding English expressions and statements, and difficulty translating texts from English into Turkish. Regarding problems in the medical English learning process, students expressed the difficulty of attending English courses without preparation, being unable to benefit from the course materials presented, having problems understanding English expressions and statements, having problems linking words/connectives, and their positive and negative opinions/prejudices toward learning English because of people or events in their previous education. It is worth highlighting that these outcomes may mirror the education system in Turkey by reflecting both learning and humanistic needs. Based on the needs analysis results previously conducted (see Author 1), observations and a reflective journal, we started to develop the curriculum, which is detailed below.

Stage 2 - Curriculum development

Learning Outcomes

After collecting data concerning the problems medical students and the ESP practitioner faced, we devised a plan that aimed to foster the development of effective vocabulary learning strategies and promote learner autonomy with real-life activities as learning outcomes. The following actions were taken:

- training students on vocabulary learning strategies, including a cognitive strategy (guessing the meaning from the context), an activation strategy (using target words in different contexts), and learning collocations, derivations, synonyms and antonyms of the target words in medical English,
- raising awareness of the significance of medical English through activities, such as exchanging opinions on the importance of health, discussing in English recent developments in the field and identifying medical journals to read and journal websites to visit,
- encouraging medical students to attend national and international academic activities to use their knowledge and competency in medical discourse outside the classroom.

In-House Course Material Preparation

The curriculum development process started with the draft programme, which was based on a published course book on medical English. However, we should note that because of medical students' dissatisfaction and unfavourable written and spoken feedback concerning the authenticity of course materials and topics that were chosen to teach medical discourse, in-house course materials were produced to meet learners' needs. Feedback both from medical students and medical specialists was collected to improve the course materials to teach medical English, which was updated each year to keep up with the current literature in medicine and to include texts that foster engagement with the subject to be taught in content courses regarding medicine in Turkish. For example, a research article in English in medicine on 'BRCA1 and BRCA2 mutations in Turkish patients suffering from breast and/or ovarian cancer' was written by the students' own Turkish lecturers as medical specialists in the basic sciences in the Faculty of Medicine, and the medical topic was studied as a subject in the scope of the Medical Biology course in Turkish, which motivated students a lot.

We observed that this link between medical English and content courses in medicine increased medical students' motivation and active participation because of their familiarity with the topic from Turkish content courses in medicine. The ESP practitioner openly stated her unfamiliarity with BRCA1 and BRCA2 mutations and expressed that she had to study the topic because of her paucity in content knowledge and even talked to the medical specialists, who were the authors. She talked to the co-authors of the publication for more specific information on the medical subject the medical English course included before coming to the course to encourage medical students to contribute to teaching to share the roles and contribute to her professional development. Indeed, this approach was highly successful. Students welcomed the topic and provided their background knowledge in Turkish, but they used and taught medical terms in English as well, such as truncating mutation and polymorphism. During break time, medical students even provided additional information and shared their course notes with the ESP practitioner to guide her, which seems an effective collaboration. It is worth highlighting that the collaboration between content teachers and ESP practitioner are emphasized in the literature. However, our findings suggest that reaching to medical students were easier and more effective to collaborate for ESP teaching.

Medical students participated in medical English course more actively during weeks when the current published research in prestigious journals was the target reading, which could be explained by the efficacy of the in-house course material tailored to the learners' needs. The ESP practitioner, medical students and medical specialists, as content specialists, teamed together to discuss the medical English teaching process and the production of in-house course materials to tailor students' needs. The ESP practitioner derived the in-house course material from the content course activities as part of the language curriculum (Flowerdew, 1993). The motivation for this collaboration was that in line with the literature, ESP practitioners' paucity of content knowledge and specialised vocabulary in medicine may have created challenges for the course design. However, as our activity showed with a humanistic approach and learner-centred teaching in the curriculum development, the paucity of content knowledge turned out to foster effective collaboration among ESP practitioners, content specialists and medical students as a real-life success story. However, the challenge may be that in the first year of medical English teaching, the ESP practitioner usually spent more than four hours of self-study to teach the target text for an hour of medical English course, but our experience showed that this amount of time may decrease with experience within years and the familiarity with the students' needs and nature.

The consensus among the stakeholders in this research setting was as follows for the production of in-house course materials as an outcome of needs analysis:

1- Preparation stage: This stage was the basis of the medical English course. Course notes were prepared to prepare medical students to read medical research articles from medical journals with a high impact factor, such as the New England Journal of Medicine, BMJ, LANCET or JAMA. The in-house material in the preparation stage included the following three contents:

i. The most frequent semi-technical academic words in medicine- a small academic medical dictionary (English to English) was prepared,
ii. Linking words were presented through highlighting the linking words in the scope of 'but', such as however, while, whereas, and so, including thus, therefore and hence.
iii. Academic texts in medicine on general topics in medicine, such as antibiotic resistance, were among target readings.

2- Professional stage: After the preparation stage, the main stage focused on using medical English for professional purposes, which medical students expressed that they needed:

i. The most frequent significant words were provided to familiarise medical students with terminology related to the medical paper publication process, such as cover letter, submissions, and impact factors, and also key academic terminology in international medical journals, such as peer review, review, reviewer, editorial, retraction, withdrawal, review article, comment and correspondence, which were defined in the in-house course material.
ii. Current published medical research papers in different genres, such as update review articles, case studies, original research articles, comments, and patient pages, were collected from online journals with high impact factors to which the university had subscribed.

Genre Awareness about Medical Discourse

Through the in-house material production stages above, our aim was to elucidate the structure of each target genre with a focus on a communicative purpose to enable students to acquire proficiency and awareness in different medical genres and to familiarise them with scientific research genres, which was also assessed in the mid-term and final examination (see Askehave & Swales, 2001). The significance of hedging with different taxonomies in scientific writing was intensively discussed to show the use of language in science. Based on the genre-based contextual analysis, the structure of the empirical research/original research—Introduction-

Methods-Results and Discussion (I-M-R-D)—was introduced through focusing on the communicative purpose of each section and highlighting hedging in medical discourse before reading medical articles in English (Salager-Meyer, 1994). Current various published medical texts (i.e., original research, review articles, comments, and case studies) were chosen to guide medical students to develop academic writing skills associated with various genres in medicine.

Assessment

Due to the high number of medical students in the elective course (for example, in an academic year, 229 first-year medical students enrolled in Medical English I), a multiple choice test was prepared to assess the learning outcomes with 25 questions. The examination had the following four subsections: assessment of academic vocabulary in medicine (including technical and sub-technical vocabulary), assessment of connectives/linking words, assessment of the genre of medical research articles and assessment of academic reading in medicine. The validity of the assessment was determined. These subsections were determined considering the findings of the longitudinal critical needs analysis and ongoing feedback collected during curriculum development observations, which revealed medical students' learning needs, the results of which were consistent with our longitudinal observation.

Of the 229 medical students enrolled in the medical English course, 15 were unsuccessful and had to take a make-up examination. Before they took the make-up examination, their self-perceived reasons for being unsuccessful were investigated through an anonymous report to understand their case. The salient themes in medical students' written reports were mainly related to the hectic examination week, their reliance on general English knowledge, and problems with the learning strategies/study skills, as the following quotes indicate:

> P.1: I did not have time to study for the medical English exam because of two exams on the same date. Thus, I left medical English for the make-up exam.
>
> P.2: The exam week was too heavy for me—this is the main reason that I had to attend the make-up exam.
>
> P.3: The medical English exam was after the most challenging exams, and I fell asleep and could not revise the course notes for the final examinations. Now, I am taking the make-up exam.
>
> P.6: I relied on my general English background and knowledge and put on airs. Thus, my unsuccessful exam results are because of my ego.

> P.7: I do not know how to study and get prepared for medical English exams, and also, I have a low self-confidence to learn English, which affected my success and exam results.

This finding may explain the potential negative effects of of education system in Turkey, such as busy examination weeks when students may take more than eight examinations in two weeks.

Stage 3- Curriculum Implementation

The present needs-based curriculum was produced in around four years, as described above, because medical students' needs may change, and current discussions in medicine lead to different subject focuses. For example, Ebola virus was prevalent in 2014. We added to the curriculum current publications from high-impact journals, such as New England Journal of Medicine, to discuss the vital worldwide problem in lectures and equip medical students with scientific knowledge on the relevant medical research. Notably, because the language of science is English, students are unlikely to engage in worldwide discussions and keep up with the current literature in their native language, Turkish.

Stage 4- Curriculum Evaluation

Both written and oral feedback was collected from medical students before, during and after the curriculum development process to test and revise the curriculum. This was an active process as medical students tend to like to discuss and openly criticise their learning needs and express their satisfaction and dissatisfactions. The curriculum was revised in light of the medical students' feedback and evaluations. To measure and report on the outcomes of the curriculum and learn whether the learners achieved the intended outcomes through the planned activities, we performed a formative evaluation through collecting feedback during the process of developing the curriculum for a medical English course. We also conducted a summative evaluation to explore learners' perceptions of their learning experience in medical English at the end of the year to determine whether their learning had met their expectations. We thought that these instruments could offer us more direct and reliable information.

i. Formative evaluation: To reveal medical students' perceptions of their learning and learn their responses to the teaching, we asked 23 medical students to evaluate the medical English courses anonymously under six sections: course content, teaching process, the relationship between learners and the ESP practitioner, the personality of the ESP practitioner, opinions about examinations and other aspects. Our aim was to collect feedback during the process of developing the curriculum to determine the improvements but also weaknesses we might have missed.

ii. Summative evaluation: To gain valid and reliable information, the evaluation team consisted of 23 medical students. Based on the questionnaire in Shi, Corcos and Storey's study (2001, pp. 289-290), medical students' evaluation of the curriculum was conducted in Turkish and translated into English. Twelve statements were provided.

Summative Evaluation Results

After the needs-based curriculum was implemented, to evaluate the effectiveness of the programme and to identify whether the curriculum produced the desired outcomes, medical students were asked to carry out summative evaluations. Table 1 below shows 23 medical students' summative evaluations regarding the medical English instructional period to provide insight into the curriculum development in ESP.

The other highest agreements above 90% were for learning academic words in English through their meanings, synonyms and collocations (95.7%), the course covering the appropriate topics (91.3%), receiving information concerning the format of mid-term and final examinations (91.3%), and reading research articles in medical journals with high impact factors (91.3%). These strong agreements and outcomes are also in line with the expectations and needs the medical students reported in the needs analysis (see Author 1). There was a high consensus for the other three items: the course taught the knowledge and skills it intended to teach, revising course notes before examinations, receiving information regarding national and international medical congresses and collaborating to share academic experience as undergraduate medical students (87%); learning what the teacher taught (73.9%); and reiteration of knowledge on linking words (78.3%). The lowest agreement was on the enjoyment of the course (60.9%) and the appropriate time spent on each topic (60.9%). The 60.9% agreement may arise from the individual differences and subject knowledge background of students, which needs further investigation.

Table 1. Summative Evaluation Results

	1. Strongly Agree	2. Agree	3. Not Sure	4. Disagree	5. Strongly Disagree
1. I enjoyed the course.	60.9	34.8	0	4.3	0

2. The course covered the right topics.	91.3	8.7	0	0	0
3. The time spent for each topic was right.	60.9	34.8	4.3	0	0
4. I have learned what the teacher taught.	73.9	26.1	0	0	0
5. The course taught the knowledge and skills it intended to teach.	87.0	13.0	0	0	0
6. The course is useful.	100	0	0	0	0
The following activities are useful					
7. Learning academic words in English through their meanings, synonyms and collocations.	95.7	4.3	0	0	0
8. Reiteration of our knowledge on linking words.	78.3	22.7	0	0	0
9. Reading research articles in medical journals that have high impact factors.	91.3	8.7	0	0	0
10. Revision of course notes before the examinations.	87.0	8.7	4.3	0	0
11. Receiving some information concerning the format of mid-term and final examinations.	91.3	8.7	0	0	0
12. Receiving some information regarding national and international medical congresses and our collaboration to share the academic experiences as under-graduate medical students.	87.0	13.0	0	0	0

Formative Evaluation Results

Twenty-three medical students' written formative evaluations were collected during the curriculum development process under six sections, i.e., course content, teaching process, the relationship between learners and ESP practitioner, ESP practitioner's personality, opinions about mid-term and final examinations and other aspects**.** Our aim here was to evaluate the curriculum and to reveal the potential effects of the two main approaches we used: the humanistic approach and critical thinking. The six sections were determined accordingly.

Course Content: Regarding course content, medical students focused on their perceptions of reading current medical texts, learning academic vocabulary and the benefits of the current medical texts to their personal and professional development:

> P.2: Learning target medical vocabulary with the most significant aspects and collocations made the course interesting and not boring. Given that the medical research articles we read in English are current and include medical literature, particularly in the introduction part of the articles, significantly contributes to our medical education and knowledge.

> P.11: I am very satisfied with the content of the medical English courses. I think that the lectures are very fruitful thanks to the ESP practitioner's knowledge and

experience. Thanks to medical English and the vocabulary we studied, now, I can read articles and follow the publications of the medical specialists in our faculty. The current research articles that our ESP practitioner brings to the lectures contribute to our individual development regarding medicine and broaden our horizon.

One of the students expressed interest in reading medical discussions from updated articles in line with the topics they learned in content courses in Turkish:

P.5: The subjects of the medical articles in the course are very good. All of them are very good. Discussing the same topics with the world of medicine at the same time is great. However, I think, reading updated texts must be in the background. We are more interested in the subjects in medicine, in line with our content courses in Turkish. Thus, not only updated articles but also 'articles compatible with the content courses in the same week with the most updated publication' could be more beneficial. Apart from this, I think the systematic procedure of teaching style is very effective.

We should note that some evaluations focused on the teaching environment and the effects of the relaxing milieu that allowed medical students to ask questions without any fear or hesitation. These evaluations suggest that the use of humanistic and critical thinking approaches that enabled medical students' voice to be heard by encouraging their participation and thus helping them meet their learning needs:

P.13: Firstly, I am very satisfied regarding the course content, learning words with their collocations, the ESP practitioner's explanations, and the relaxing [teaching] milieu, where we can ask [our] questions easily. Now, I can understand while reading an article [in English], but I feel myself weak in writing—maybe the reason for this weakness is me.

P.18: We learn with current research articles [in English] about the current medical topics and have a chance to keep up with the medical literature. The target vocabulary we are learning is present in almost all of the articles we read, which facilitates our comprehension. The free teaching atmosphere the ESP practitioner created to encourage us to raise questions provides me with an opportunity to ask my questions. Normally, I am not used to speaking in front of people, but she [the ESP practitioner] encourages me.

There were some recommendations from medical students regarding course content, such as including a short video for each lecture, giving short quizzes and using visuals:

P.20: I think that your course note preparation and teaching techniques are almost perfect. However, all of the research articles could be accompanied by videos to make the course more enjoyable and attractive.

P.17: Updated course content is very attractive.

P.21: The research articles could be accompanied by visuals or the other relevant research articles, and the author's background because sometimes very long articles become boring. I really appreciate the additional time you spare for our questions after the lectures.

The findings regarding medical students' recommendation may provide us with valuable insights how learners' needs may shape and differ within time.

Teaching Process

Students have different learning styles, and we need to address these differences. Medical students' evaluations of the teaching process suggest that they were satisfied with the teaching. They tended to associate teaching process with the ESP practitioner's approach and strategies she used, emphasising their needs as medical students:

P.3: We like her emphasis on meeting our course expectations and emphasis on vocabulary learning. Repetitions and revision notes help the information stick in our mind easily, and we remember quickly when we prepare ourselves for examinations. Moreover, ESP practitioner's updated knowledge concerning national and international English exams and the sample questions she brings to lectures encourage us to prepare for the English examination we must take to have a speciality in the following years.

P.6: I think it is very beneficial when ESP practitioner teaches in English, paraphrases paragraphs with different words, explains the target words in English and tells us how she learnt the vocabulary, with the explanation that "I learnt this word like this", which sticks in our mind.

P.19: While teaching the academic words, her indication of context for the use of the words makes the learning permanent. The revisions she makes helps the knowledge regarding medical English we gained to be permanent.

P.20: Her teaching style is effective. Her teaching use of academic vocabulary within context and removal of the target vocabulary in the sentence really helped me a lot to develop learning skills to understand unknown words.

The Relationship between Learners and ESP Practitioner

Good communication is one of the key aspects of building an effective rapport for understanding, intimacy and mutual valuing. Notably, teachers and students' personal characteristics may play a large role in building dialogue during teaching. The medical students appeared to be happy with the ESP practitioner's nature, attitude and approach:

P.1: The ESP practitioner's attitude and approach towards us are highly natural and sincere, and her effort to teach and learn is great. We can ask about whatever we cannot understand or wonder without any hesitation.

P.5: Our ESP practitioner is highly interested in our learning and the factors that affect our learning. Although she never asks for a signature for classroom attendance, her approach motivates us to attend the courses regularly.

P.18: When we are tired or when we are distracted, her effort to capture our attention through short memories and stories always reached their aims. She put a huge effort to reach and teach all of us. She never leaves the discipline behind, but she also never shows a despot attitude. I appreciate this a lot.

P.23: Although we focus on having high marks on the examinations (apart from some of us), her approach to making us successful on the target subjects is very good. She wants all of us to learn the subjects she teaches, and she teaches accordingly. Moreover, she wants students who do not understand ask questions, which is also very good. Her choice of topics consistent with our level to make us successful is also very good.

ESP Practitioner's Personality

Personality is difficult to describe, but the data we collected showed the potential positive effects of the ESP practitioner's personality on students' motivation to learn medical English:

P.3: Her lectures are lively and full of fun, maybe because of her personality. She is the youngest lecturer in the department. She is very open to learning, which we a class observe in how she teaches and manages. She loves her profession a lot, which is affecting our learning process a lot, and we even talk among our friends and families about her.

P.6: Because the ESP practitioner is meticulous, aims at complete success, and understands students, the education is becoming more beneficial for us.

P.7: Of course, the teacher's personality affects the teaching and learning process. The courses are going very well.

P.8: I find the personality of the ESP practitioner awesome. I sometimes get bored of the courses. I even think of not attending the course sometimes. However, her personality makes me motivated to attend the medical English courses. I mean, sometimes, I attend the course just for her.

P.9: The very successful personality of the ESP practitioner changes my outlook on life very positively.

P.12: The ESP practitioner's sincerity and her student-centred approach make the course effective.

P.23: She is creative, focused on success, confident, lovely, and affectionate and even more. She has all of the characteristics that a good lecturer should have, and this affects our attendance at your lectures.

Opinions about Mid-Term and Final Examinations

The final specific section was the evaluation regarding examinations. The medical students' comments below revealed the extent to which the test measured what it intended to measure, which may demonstrate the validity of the examinations. Medical students appeared to be satisfied with the assessment of their medical English knowledge:

P.1: The questions in the examination we took were to assess what we studied during the lectures.

P.3: The examination content with updated self-reading was good so far and beneficial to see how we learnt compared to the beginning of learning. Everyone in the department knows that you cannot pass her examinations if you are a lazy student. The negative side can be the fact that ESP practitioner never adds marks, such as plus 1 or 2, even if the student only needs one point. I know this from my retake examination the summer that I got very upset and sent her email. She said if she could have given plus 1 to me, what about the students who need plus 2, 3 and 4, 5. Thus, she seems against this.

P.5: I was not very stressed regarding examinations. I think the examination questions were very good and high quality and measured what we were supposed to learn and what we learnt.

P.6: The knowledge that we learn in the courses is useful, and having examination questions in this context is very good.

P.20: In the examinations, you asked questions about the subjects you gave a lot of focus and effort. Thus, I think that is why there was not any part that we could object. That is why although my mark was lower than the average of my classmates' marks; I never had a suspicion in my mind regarding examinations. The degree of the examination questions was normal. There were some easy questions and some difficult questions.

P.22: The course content and teaching were in line with the examination questions.

P.23: Indeed, the questions were what we expected. The questions were always on the topics you explained, and there were no questions about topics we did not study. Of course, our course marks were high because as she always says, we are "nerds".

Students highlighted how the compatibility between course content and examination questions reduced their stress:

P.17: The consistency between course content and examination questions is very good, and this reduces our examination stress.

Students seemed to be happy to be assessed on what they studied. However, they also voiced concerns, such as challenging academic reading texts, in the examination:

P.8: I think the vocabulary section in the examination is easy, but academic reading is challenging. I study very hard to prepare myself for each section, but because my English education background is not good enough, I have difficulty dealing with the reading questions and understanding the texts.

Further recommendations and criticisms were as follows:

> P.11: The academic vocabulary section includes the most significant and frequent technical and sub-technical words. In the academic reading section, the articles could be from general medical topics.

> P.14: I thought that I studied hard for the examination, but I ran into various contradictions while answering the questions, though I was successful in the examination. I felt that the exam was partially based on memorisation. Apart from this, I think the examination questions were well prepared and to the point.

> P.18: For me, the examinations were easy because we were assessed on what we learnt. Although we were very nervous before the examination, you asked what we learnt. I am aware that the final examination will be more challenging, but I am aware that you never ask what you do not teach or highlight, so I am not very stressed. I attend your course regularly with preparation and revise the course notes. I feel that I understand during the lectures. I want to enrol in the course in the following terms, too.

Other

Under this section, the most highlighted topic was on the foreign language examination, which is a prerequisite for medical students to pass for the Examination for Specialty in Medicine (abbreviated as TUS in Turkish) in Turkey. Students reported that this curriculum also supported their preparation for the language examination:

> P.8: I think that [medical English] course is significant, particularly for foreign language examination [in English]. In addition, this course prevents us from forgetting general English. Reading medical research articles contributes to our education because we learn about sub-specialism with different medical topics.

> P.15: I am very grateful to her [the ESP practitioner] thanks to her encouragement for each examination preparation we have to attend, for example, foreign language examination. I am thankful to her for her encouraging words for the foreign language examination preparation.

The signs of development of learner autonomy were apparent in the following comment given that medical students appeared to take charge of his/her learning responsibility outside the classroom:

> P.4: I read and hear the words in English that we studied in the course while I am reading texts or watching video on other subjects apart from medicine. Thus, the contribution of medical English is considerable in my daily life.

The ‘other’ section included evaluations from other sections, with a focus on the satisfaction with the medical English course and the personality of the ESP practitioner. It is notable that this result is consistent with the needs analysis outcomes on the same research setting in which medical students reported their expectations and needs from medical English course (see Author 1). The findings suggest that the personality of the teaching staff may have a significant effect on learners, possibly even more of an effect than the knowledge acquired (see Rushton, Morgan & Richard, 2007):

> P.6: Because the ESP practitioner is enthusiastic, she affects us as medical students, making us enthusiastic not only for medical English courses but also for other courses in medical education stages.

> P.7: Always reading medical research articles and learning new information are very good. Medical English courses help us in both reviewing the international publications and understanding their effects on our content courses in medicine. Also, this can pave the way for discussions among us.

> P.10: The ESP practitioner’s announcements concerning national and international academic activities and her encouragement and supportive attitude make us more active participants in the medical school.

> P.11: The ESP practitioner’s support and recommendations for education and training abroad affect me very positively. I aim to go broad with the Erasmus programme and am thinking of consulting her for her opinion. In addition, her encouragement to write an article and her writing projects to make us familiar with academic writing make me happy.

> P.13: I am very happy with the course. Reading medical articles improves my reading skills, and its positive effects are unarguable. However, I want to improve my writing skills.

> P.14: It is my first year, but starting at the beginning of the term, I identified a number of positive approaches she has, which helped me to improve myself and deal with the problems I encountered.

The salient themes of the recommendations and criticisms are below, which may lead to brainstorming during teaching:

> P.3: I strongly agree that I enjoyed the course, the course covered the right topics, I have learned what she taught, the course taught the knowledge it intended to teach, and the course is useful, but I agree (not strongly agree) that "the time spent for each topic" was right because I think that I still do not know grammar. Thus, I feel that grammar should be a part of medical English. Apart from this, the course is enjoyable and very good.

> P.8: The course is useful, indeed. However, sometimes, some of the students ask for Turkish explanations, and I wish Turkish explanations would be removed during teaching and that each minute of the lecture could be in English.

Pedagogical and Practical Implications

Our aim in this study was to develop a needs-based curriculum to teach medical English and carry out an assessment of the curriculum in higher education. Through tailoring the programme to the needs of medical students and the promoting humanistic approach and critical thinking, we planned each stage for an effective curriculum implementation to meet the specific needs of the teaching context to be updated regularly. As the data analysis suggests students' satisfaction with ESP courses is highly likely to be realized if critical needs analysis and needs-based curriculum are implemented properly. Notably, all activities in each stage of needs analysis, development of needs-based curriculum and assessment of the curriculum reported are doable. Hence, the curriculum development process described in this study could be adaptable to various teaching contexts in mainstream ESP and ELT classrooms. We argued that this needs-based curriculum is highly likely to help students in non-English-speaking countries develop their linguistic abilities in their speciality and may increase students' motivation, satisfaction and success in ESP education.

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