



เรียนรู้เพื่อรับใช้สังคม

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ในวารสารภาษาอังกฤษเฉพาะด้าน
(พ.ศ. 2529-2560)

**KEYWORD ANALYSIS: A CASE STUDY OF RESEARCH TOPICS
TRENDS IN THE ENGLISH FOR SPECIFIC PURPOSES JOURNAL
(1986-2017)**

YANG YU YUAN

**A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF MASTER OF ARTS PROGRAM
(ENGLISH FOR PROFESSIONAL COMMUNICATION)
GRADUATE SCHOOL HUACHIEW CHALERM PRAKIET UNIVERSITY
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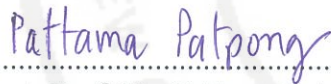
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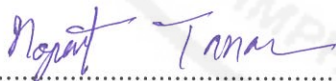
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Asst. Prof. Dr. Pattama Patpong
Chairman



Dr. Jonathan Rante Carreon
Thesis Advisor



Asst. Prof. Dr. Noparat Tananuraksakul
Member



Dr. Jonathan Rante Carreon
Member



Asst. Prof. Dr. Noparat Tananuraksakul
Program Director Master of Arts
(English for Professional Communication)



Assoc. Prof. Isaya Janwittayanuchit
Dean of the Graduate School



Asst. Prof. Nick Soonthornchai
Dean of Faculty of Liberal Arts

**การวิเคราะห์คำสำคัญ: กรณีศึกษา แนวโน้มหัวข้องานวิจัยในวารสารภาษาอังกฤษเฉพาะด้าน
(พ.ศ. 2529-2560)**

YANG YU YUAN 576027

ศิลปศาสตรมหาบัณฑิต (ภาษาอังกฤษระดับสูงเพื่อการสื่อสาร)

คณะกรรมการที่ปรึกษาวิทยานิพนธ์: JONATHAN RANTE CARREON, Ph.D.

(APPLIED LINGUISTICS AND LINGUISTICS)

บทคัดย่อ

การกำเนิดโลกาภิวัตน์และการศึกษาข้ามพรมแดนได้กระตุ้นการเปลี่ยนแปลงแนวโน้มการวิจัย การเปลี่ยนแปลงแนวโน้มการวิจัยนี้ได้เกิดขึ้นกับสาขาภาษาอังกฤษเฉพาะด้าน (ESP) ด้วย ซึ่งอาจแสดงให้เห็นถึงแนวโน้มที่กำลังเปลี่ยนแปลงในการพัฒนางานวิจัยทางภาษาอังกฤษเฉพาะด้าน รวมทั้งแนวโน้มความต้องการการทำวิจัยในหัวข้อใหม่ ๆ จากการอ้างอิงกรอบวิจัยของ Crawford et al. (2006) การวิจัยนี้เป็นการศึกษาแนวโน้มหัวข้อการวิจัยในบทคัดย่อของวารสารภาษาอังกฤษเฉพาะด้าน ในช่วงเวลาต่างกัน ดังนี้ ระหว่าง ปี ค.ศ. 1986-1995 ระหว่าง ปี ค.ศ. 1996-2005 และระหว่าง ปี ค.ศ. 2006-2017 และลักษณะโดยรวมของวารสารตั้งแต่ช่วง ปี ค.ศ. 1986-2017

การศึกษานี้เป็นการวิเคราะห์ข้อมูลเชิงปริมาณและเชิงคุณภาพ โดยใช้ซอฟต์แวร์คลังข้อมูลภาษาศาสตร์ ชื่อ *AntConc 3.5.7* (Anthony, 2017) ตรวจสอบบทคัดย่อจำนวน 628 ชิ้น เพื่อดูความถี่สัมพัทธ์และเปรียบเทียบค่าที่มีความถี่สูงกับเกณฑ์มาตรฐานสองเกณฑ์ดังนี้ (1) คลังข้อมูลภาษาอังกฤษแบบอังกฤษแห่งชาติ (British National Corpus) และ (2) ข้อมูลจากช่วงเวลาแต่ละช่วง และผลลัพธ์ของการเปรียบเทียบแสดงเป็นค่า log-likelihood (LL)

ผลการศึกษาพบว่า แนวโน้มการวิจัยมีทั้งหมดสี่ประเด็น คือ (1) แนวโน้มของหัวข้อวิจัยที่ต่อเนื่อง (2) ความสำคัญที่ลดลงหรือแนวโน้มที่ปรากฏอยู่ในระยะเริ่มต้นของวารสาร แต่ความสนใจของนักวิจัยลดลง หรือจำนวนงานวิจัยในหัวข้อเหล่านี้ผกผันกับอายุของวารสาร - แนวโน้มของหัวข้อการวิจัยที่ลดลง (3) แนวโน้มช่วงเวลาที่ยอมรับหรือช่วงเวลาหนึ่งที่ได้รับการนิยม การศึกษานี้ชี้ให้เห็นว่าการวิเคราะห์ด้วยคลังข้อมูลสามารถตรวจสอบแนวโน้มหัวข้อการทำวิจัยในสิ่งตีพิมพ์วารสารได้

คำสำคัญ: วารสารภาษาอังกฤษเฉพาะด้าน แนวโน้มหัวข้องานวิจัยภาษาอังกฤษเฉพาะด้าน คำสำคัญ

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THESIS ADVISORY COMMITTEE: JONATHAN RANTE CARREON, Ph.D.

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ABSTRACT

The advents of globalization and transborder education have been catalyzing changes in research trends. The field of English for Specific Purposes (ESP) is not exempted and may have demonstrated its own trends in response to changing emphasis in ESP for covering new demands of research development. Informed by the framework of Crawford *et al.* (2006), this research study investigates research topics trends in the abstracts of the English for Specific Purposes Journal in different time periods: 1986-1995, 1996-2005, 2006-2017, and the overall characteristic features of the Journal from 1986-2017.

Using both quantitative and qualitative analyses, this study employed the corpus linguistic software *AntConc 3.5.7* (Anthony, 2017) to examine a total of 628 abstracts for their relative frequencies by comparing high frequency words with two benchmarks: (1) British National Corpus (BNC) and the (2) data from each period, and the results of the comparisons expressed as log-likelihood (LL) values.

Four issues of research trends were found: (1) the continuing research topics trends, (2) decreasing significance or it appeared at the onset of the journal, but interests among researchers faded or the number of research studies on these topics was inversely proportional to the age of the journal - the decreased research topics trends, (3) intermittently popular or one-time period trend. This investigation shed some light on how corpus-based analysis can be used in examining topic trends in journal publications.

Keywords: English for Specific Purposes Journal, ESP research topics trends, keywords

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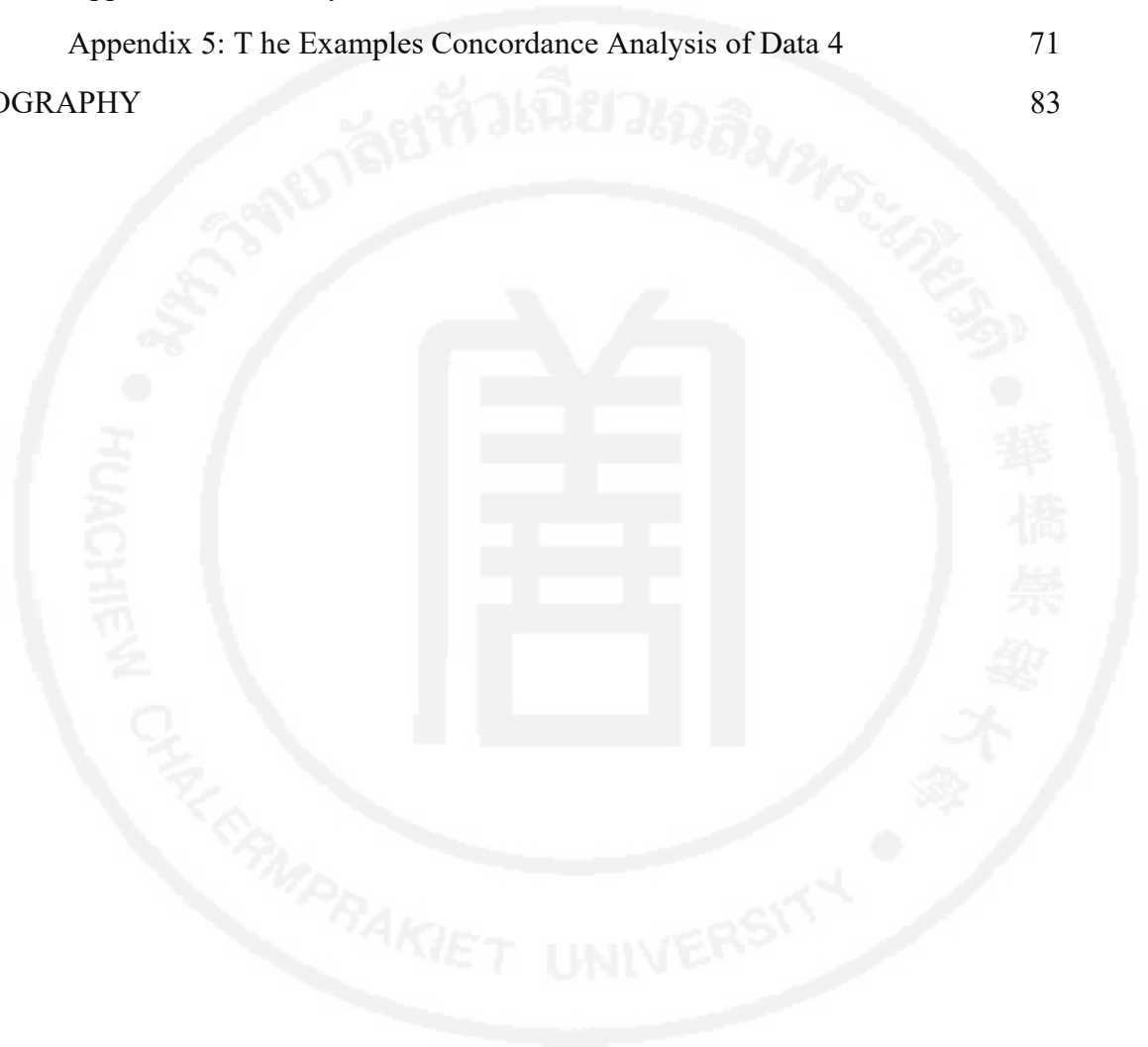
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CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Globalization has prompted a greater demand for past, present and future information not only to cope with developments and to respond to the challenges of this rapidly changing society and environment (e.g. Steger. 2010; Bresser Pereira. 2010), but also because information from different periods of time may be useful in indicating trends. Generally, a trend is a conception of what is currently appropriate. It is a process of social acceptance related to the fashion, education, and economics. In other words, people could notice what items are needed to be improved or advanced for covering the needs of daily life. A more succinct definition of trend is that it is the general movement over time of a statistically detectable change (Merriam-Webster Dictionary, 2017). The definitions indicate that trends are important since they show the dynamics of information from one period of time to another. In other words, trends are useful as they reflect a pattern of gradual change in condition, output, or process, or general tendency of a series of data points to move in a certain direction over time. While it is commonly used in business and fashion industries to indicate what is hip or popular at a certain point in time, trend can also be seen in more academic settings such as gradual changes in the topics published in academic journals (Vocabulary. 2018).

1.2 Importance of English for Specific Purposes trends

English for Specific Purposes (or also known as ESP) refers to the teaching of a specific genre of mainly scientific or technical English for students with specific goals, careers or fields of study. ESP meets the needs of mostly adult learners who need to learn a foreign language for use in their specific fields, such as science, technology, medicine or academic learning. Mackay & Mountford (1978 : 2) write that “ESP is generally used to refer to the teaching of English for a clearly utilitarian purpose.” The point is that learners should be taught English in a way that enables them to read textbooks written in English relevant to their specialist field, or to use English in their future career. As Johns & Dudley-Evans (1991) state students study English not because they are interested in the English language or English culture as such, but because they need English for studying or work purposes.

English for Specific Purposes (ESP) has a long development history as a branch of English language teaching for covering learners’ specific needs. Based on the theory of Hutchinson & Waters (1987) learners have diverse needs and interests, which influence their motivation to learn. With the development of globalization, the ESP areas need to adjust and adapt to the needs of learners. One way to do this is to identify topic trends in ESP publication journals. To identify the trends of ESP is an important mission since it provides an account of what really has been done in its various areas and branches. ESP research trends also provide information as to what

direction research in ESP is heading to. There are several popular journals mainly for publishing research in English for Specific Purposes such as *English for Specific Purposes Journal*, *Asian ESP Journal*, *ESP Today*, *ESP Journal* and *College ESP Journal*. The choice of *English for Specific Purposes Journal* is purposive due to several reasons. Firstly, the history of *English for Specific Purposes Journal* is longer than the other three journals. Secondly, the *English for Specific Purposes Journal* is widely recognized because it includes papers from all over the world. Moreover, it covers broader fields which do not only focus on teaching, but also on academic purposes and tertiary education. In other words, the *English for Specific Purposes Journal* is an international research journal that provides a detailed account of research studies carried out in the field of ESP. In brief, the *English for Specific Purposes Journal* has been one of the premier archival research publications in ESP and has significant impact on the world of ESP.

1.3 Trends Studies in Different Academic Contexts

In the social science field, for example, as recently as the 1980s, many researchers were still debating whether quantitative or qualitative methods were superior, until recent years, when some social science researchers argued that mixed methods research is now common in many fields in sociology, such as education, organizations, movements, health, and social policy (Collins. 1984; George & Bennett. 2005; Franzosi. 2004; England & Edin. 2007; Clark. 2010; Teddlie & Tashakkori. 2010; Teddlie & Tashakkori. 2011; Small. 2011; Gunasekare. 2015). Based on the discussions of these research studies, it is evident that using mixed methods in social science is popular among researchers in the field.

In tourism business, there has been significant growth in the business travel sector of tourism, which includes both individual travel and organized group arrangements, such as conferences, conventions and exhibitions and value and extent of business tourism has changed significantly in recent years which is business travelers are more cost conscious than they were (Lawson. 1982; Owen. 1992). Over the past decade there was a shift in trend from regular tourism to medical tourism, with tourists targeting specifically Asian countries due to cheap medical services (Cohen. 2008; Bookman. 2007; Whittaker. 2008; Gupta. 2008; Yu & Ko. 2012; Wongkit & McKercher. 2013). Those trends are examined through a series of trends study of tourism to develop Asia tourism industry as far as possible.

In education, trend shows that more and more people are traveling outside their home countries to enroll in degree and non-degree course offerings of (higher) educational institutions in foreign nations (see Altbach, Philip & Knight. 2007). For instance, in language learning, the trend is that students from non-English native speaking countries travel to English native or near native speaking countries to study or even master the language (Crystal. 2012; Pennycook. 2017). There is also an attempt to shift from teaching general English to teaching English for Specific Purpose (ESP) due to the growth in professional, technical and vocational training (Basturkmen.

2012). This trend has led to the creation of subjects such as English for Tourism, English for Nurses, English for Engineers, English for Medical Practitioners, English for Lawyers and others. On other hand, with the increasing interest in applying augmented reality in education, there is a trend towards documenting the application and success technologies in education systems (Castro, Colmenar & Martin. 2010; Martin *et al.* 2011; Wu *et al.* 2013; Radu. 2014).

In the field of English for Specific Purposes research, there was a shift towards identifying learners' needs and describing problems of specific learners in specific contextual learning processes and situations (e.g. Hyland. 2005; Belcher. 2004; Bawarshi. 2003; Connor & Upton. 2004; Swales. 2004; Flowerdew. 2004; Flowerdew. 2005) until recently when corpus-based research approaches that look at macro-structures have become the trend (e.g. Boulton, Carter-Thomas & Rowley-Jolivet. 2012; Pérez-Paredes. 2014; Boulton. 2016). These observations of trends can be confirmed partly by comparing them against the journals where these academic papers are published. For example, these observations can be compared with the information included on the website of the ESP Journal. On its website, the ESP Journal wrote that topics such as those related to second language acquisition in specialized contexts, needs assessment, curriculum development and evaluation, materials preparation, discourse analysis, descriptions of specialized varieties of English, teaching and testing techniques, the effectiveness of various approaches to language learning and language teaching, and the training or retraining of teachers for the teaching of ESP may be considered as part of ESP research.

Starfield & Paltridge (2014) claimed that the corpus-based studies have helped better understand the nature of specific purposes language use and how research can be carried out in this field. Hunston (2002) believes that the corpora and a study of corpora have been expanding the ways to explore the language, and fully developed the advantage of corpora in the applications of language in last decades. In the field of applied linguistics, it always plays a significant role to discover and improve the development environment of ESP area through looking for a solution for practical problems (Bhatia. 2014). Thus, in this research study, i investigated topics and trends in ESP Journal using the tool of corpus linguistics.

1.4 Significance of Study

This study examined research topics trends of *English for Specific Purposes Journal* applying corpus-based analysis and using diachronic data from 1986 - 2017. It means that the results show a bigger picture of ESP research history than any other other past studies. Compared with previous studies, it has a longer research time period and used corpus analysis as a research method. Thus, the results reflect a longer history of research topics trends of ESP than other past studies. Otherwise, few past studies used corpus analysis to identify topics trends on *English for Specific Purposes* journal. To sum up, the study may provide a new way to examine topics trends in ESP by using Corpus analysis. The implications of the study are discussed in Chapter 5.

1.5 Research Objectives

This study analyzes the trends presented in the ESP Journal from 1986 to 2016 with the following objectives:

1. To identify research topics that characterize the abstracts of the English for Specific Purposes Journal from 1986- 2017
2. To identify research topics in the abstracts of the English for Specific Purposes Journal in different time periods: 1986-1995, 1996-2005, and 2006-2017
3. To identify topic trends in the abstracts of the English for Specific Purposes Journal that can be found in different time periods: 1986-1995, 1996-2005, and 2006-2017

1.6 Research Questions

This study analyzes the trends presented in the English for Specific Purposes journal. The abstracts of each journal article published throughout from 1986 to 2017 of existence are examined to shed light on the following research questions:

1. What research topics characterize the abstracts of the English for Specific Purposes journal from 1986- 2017?
2. What research topics in the abstracts of the English for Specific Purposes journal can be found in different time periods: 1986-1995, 1996-2005 and 2006-2017?
3. What topic trends in the abstracts of the English for Specific Purposes journal can be found in different time periods: 1986-1995, 1996-2005 and 2006-2017?

1.7 Scope of the Study

In this study, the corpus is composed of the titles, abstracts and articles appearing in different papers of the *English for Specific Purposes Journal*. Keywords of abstracts were not included, since they were not available for download and they were not included by the publisher in the abstracts. The research study looked at abstracts partly because of their manageable length and compact presentation of information, but mainly because this is generally highly indicative of the content of articles (Hyland. 2005). It was found that using full text which includes exceptional length of articles could have possibly skewed the result of analysis (Crawford *et al.* 2006).

1.8 Definition of Terms

1.8.1 Corpus analysis

Corpus analysis refers to the examination of a data set known as corpus using corpus tools and software such as *AntiConc* (Anthony. 2017). The tools allow the quantitative and qualitative analysis of large volumes of data.

1.8.2 British National Corpus (BNC)

The British National Corpus (or BNC) is a 100 million words collection of samples of written and spoken language from a wide range of sources; for example, it includes newspapers, different kinds of journals, academic books and other genre

contexts, designed to represent a general English language from the later part of 20th century. In the study, BNC is a reference corpus (general corpus) to compare with target corpus (special corpus) to highlight the entire special words of ESP from 1986 to 2016.

1.8.3 Log-likelihood (LL)

The statistical measure of log-likelihood can be used for corpus comparison using relative frequencies. The log-likelihood value indicates overuse or underused, respectively, in corpus 1 relative to corpus 2 by using plus or minus symbol.

1.8.4 Trend

A trend is a general direction in which something is developing or changing, which may indicate how popular that particular thing is.

1.8.5 Keywords

The keywords are the result of comparison between two different corpora and are identified by looking at the relative frequencies of words expressed as log-likelihood values. Keyness is the actual frequency of a word in a text in comparison to the expected frequency based upon its frequency in a reference. It is different from keywords which form part of abstracts in a research paper.

1.8.6 Keyword analysis

Keyword analysis is a technique developed in the field of Corpus Linguistics, a branch of Applied Linguistics focusing on the computational analysis of corpora. In this research study, keyword analysis involves the identification of words with relative frequencies of 15.00 and above.

1.8.7 Iterative Thematic Analysis

Iterative Thematic analysis is a widely-used method of qualitative data analysis that focuses on identifying patterned meaning across a dataset through a rigorous process of data familiarization, data coding, and theme development and revision. In this research, those processes were done by examining the concordance of each keyword.

1.8.8 Concordance analysis

A concordance is a bank for specific instances of how a keyword is used and its frequency of use in context, providing useful patterns for a more accurate categorization of keywords. In this study, it was used to identify the keywords related to English for Specific Purposes Journal and provided a simple way to collect the same research topics and categorize them into one set.

1.8.9 List Abbreviations

Table 1 List Abbreviations

Abbreviations	Full Form
rp	research papers
cr	case research
est	english for science technology or english for science teaching
lsp	language for science purpose
esl	english for science language
efl	english for foreign language
ac	academic conflict
wst	writing for science and technology
nns	non-native speaker

CHAPTER 2

LITERATURE REVIEW

2.1 Investigating Previous Studies into Trends in Research

There are a series of trends studies to show research interest topics in science settings. In an early time, Gil-Pérez (1996) aimed to review main contributions based on the impressive development made in science education study during the last decades. In education, it is argued that in both the domains of science learning and science training are the contemporary trends in science education research. For example, White (1997) counts keywords from analysis of articles from 1975 to 1985, and from analysis of volumes of research in science education from 1965 to 1995. The paper summarizes articles in ERIC database to show shifts in trends from brief well-designed and controlled laboratory style experiments to lengthy observations and descriptions in the topics of science education from 1965 to 1995.

Tsai & Wen (2005) examined the trends of three journals: *International Journal of Science Education*, *Science Education*, and *Journal of Research in Science Teaching* from 1998 to 2002. They found that researchers in four major English-speaking countries, including the US, the UK, Australia, and Canada, contributed to a majority of the publications, and they investigated research topics related to student learning contexts, and social, cultural and gender issues.

In a follow-up study, Lee, Wu & Tsai (2009) examined the same journals but in a different time period (2003-2007). Their findings also showed a trend that science educators had relatively more interest in research topics involving the context of student learning. It was also observed that science educators have changed some of their research interests during 1998-2007, from student conception learning and conceptual change (1998-2002) to student learning contexts (2003-2007). Those science scholars obtained two different findings based on data collected in different time periods. To design a trend study, a time period is an important factor which may affect the research results (Crwford *et al.* 2006).

Shih, Feng & Tsai (2008) also provide a content analysis of articles in a field of cognition study in e-learning that were published in five social citation journal indexes from 2001 to 2005. From the analysis of 444 articles, a clear trend was found indicating that more and more studies were utilizing learners' log files or online messages as data sources for analysis. The results of the analysis provide insights for educators and researchers into research trends and patterns of cognition in e-learning.

Chang, Chun & Tseng (2010) designed a scientometric method to conduct an automatic content analysis on the development trends of science education from the published articles in the four journals: Trends in Science education, Journal of Research in Science Teaching, Research in Science Education, and Science Education from 1990 to 2007. The paper found the most popular topics were conceptual change & concept mapping, the increasing interest themes of professional development, nature of science and socio-scientific issues, and conceptual change and analogy in past years. The most cited references include constructivist learning, cognitive psychology, pedagogy and philosophy of science. Those findings show the developmental trends to science field from the journal publications. Those papers highlight the current research trends and emphasize research shift for new research studies to explore.

Lin, Lin & Tsai (2014) presented a systematic content analysis of trends in science education as well. In this study, 990 papers were published in the international journals from 2008 to 2012 were analyzed. The results made a contribution to science education by indicating the top three topics in the published papers which were those regarding the contexts of students' learning, science teaching, and students' conceptual learning. The changes in the most popular research topics show shifts in the journals' preferences and researchers' interest; there was an increasing trend of research papers regarding science teaching from 1998 to 2012. The analysis of highly cited papers revealed that research topics such as argumentation, inquiry-based learning, and scientific modeling were recently highlighted by science educators.

In recent time, some trend researchers not only indicate the trends but also clearly highlight the shift in trends and importance of conducting future studies. For 15 years, productive researchers' publications also focused on the topics about context of students' learning, science teaching, and students' conceptual learning (e.g. Bauer et al. 1995; Pellechia. 1997; Glanzel. 2002; Bucchi & Mazzolini. 2003; Hijmans, Pleijter & Wester. 2003; Gonzales. 2004) using content analysis as the method. These studies examined researches trends within the field of science education synchronically, so they may not depict changes or shifts in trends.

In the field of project management, some researchers invested new project management application areas or continuing development purposes in management community through a trend study. Themistocleous & Wearne (2000 pp.7-11) examined the relative frequency of attention to 'body of knowledge' topics of project management in the paper published on the International Journal of Project Management from 1984 to 1998. The findings showed that some topics were of little or no interest, some topics have increased interests at present and the paper showed how the interests differ between the International Journal of Project Management and the U.S. Project Management Institute's Project Management Journal over recent years (Betts & Lansley. 1995; Zobel & Wearns. 2000; Kloppenborg & Opfer. 2000; White & Fortune.

2002). Overall, based on these trend researches, the current study found that mostly trends studies focused on articles were published in journals of international level. Second, these previous studies collected and compared the published articles in different periods of time, but mostly not exceeding 15 years. According to those two points, the current study also conducted a keywords analysis to identify the research topics trends from different time periods. It differs in most early studies in that the focus of the current study is the abstract and the period of study is longer (1986-2017).

2.2 A Review of Linguistic Research Trends

To date, people not only look at science and business trends studies but also show an interest on linguistic trends research. In early time, Henning (1986) study language acquisition to briefly account and define qualitative research as it is applied in the profession. From this study, trends in the use of quantitative and non-quantitative methods in applied linguistic were found. Some suggestions were made concerning useful paradigms and procedures for further studies in language acquisition research.

Gao, Li & Lu (2001) designed a study to examine and compare current trends in applied research methods in China and the West from 1978-1997 in four Chinese journals. Examining 2486 articles, the author found the differences between research trends in China and the West. In China, applied linguistic research has been moving from its non-empirical roots towards an empirical direction with an increasing interest in quantitative studies.

In the West, applied linguistics has a well-established empirical tradition, and it also showed that the quantitative paradigm was challenged by the qualitative paradigm. Trends studies are main research directions in applied linguistics research areas.

In language teaching, Richards (2009) reviews development in qualitative research since the year 2000. Firstly, the paper highlights trends and debates in the general area of qualitative research redefined the terms. Secondly, for improving the quality of its contribution, the aims of papers is to explore the greatest potential of qualitative research in language teaching and indicated what needs to be done in further. Those two trends studies drew a picture to their future work and expand the research perspective.

At the same time, other qualitative research (Benson et al. 2009) had discussed on qualitative approaches to language learning and teaching research between 1997 and 2006. An analysis of 477 articles in terms of approaches to qualitative research showed that methodological eclecticism more than adherence to established traditions should be the dominant characteristic of published qualitative work in our field. In the linguistics field, trends studies attempted to show the changes and then highlight further research

directions to potential researchers. It can be noticed that a trend study is necessary to explore new research perspectives in the field.

2.3 Related research in ESP trends studies

Research studies on ESP trends are also quite common. In the English for Science Purposes (ESPs) setting, Cargill, O'Connor & Li (2012) argued that the collaboration between English language teachers with science subject teachers is a main challenge in science education field. The paper uses a close text analysis to examine the trends in science education that includes the use of corpus linguistics to develop a strong research, ESP pedagogy and interdisciplinary collaborative practice, with the aim to improve their teaching method. While the study used a corpus-based approach to analyze data, it only describes one of the ESP perspectives, which cannot represent the whole picture of ESP areas. It is necessary to conduct a corpus-based to examine research trends as well.

In the study, possible research directions for all three social turns of ESP were also suggested. Hewings (2002) investigated ESP research trends through an overview of ESP research published by Elsevier from 1980 to 2001. In the study, it attempted to clarify different four time periods of research topics which were 1980-1986, 1987-1991, 1992-1996 and 1997-2001. The study showed strong interests in program description, needs analysis and syllabus design during those periods. Compared with current study, the research time period of past study only indicated the research trends from 1980 -2001 which the current study highlights the trends from 1986-2017.

Master (2005) indicated the top 5 research topics of ESP based on percentage counts in qualitative research studies for over 12 years. The research results were meaningful and insightful for exploring ESP directions in the ESP area. Ethnography is the most popular research topic in ESP; verbal reports, text analysis and narrative accounts were in the top 5 research topics list; classroom interaction was seen but with less attention than other topics.

Gecikli (2013) conducted a study to survey evolution and current state of the research designs through a content analysis under the domain of English for Specific Purposes in the articles published in two indexed online journals - English for Specific Purposes and English for Academic Purposes during a five-year period (2008-2013). The findings show that scholars and researchers involved in the field principally tend to employ qualitative research designs in their studies rather than quantitative and mixed-research designs. According to Sa-ngiamwibool's research (2014), localization, growth of ESP as academic discipline, genre analysis and corpus analysis, specialization, growth of business English, skill focus, and targets were highlighted as several trends and possibilities in Asian context.

The majority of past research studies only reflected a short history of topics trends in ESP. Otherwise, the topics trends focused on Asian area but nor represent the whole picture on ESP areas. Finally, these past trends studies used context analysis to examine trends which is different from the current study that uses corpus-based analysis. Moreover, the current study reflects a long history of topics trends.

Brunton (2009) focused on reviewing ESP previous works to build an account of ESP with probable future directions. Belcher, (2009) discussed trends of ESP in his book chapter English for Specific Purposes in Theory and Practice and Belcher at el. (2011) conducted a trend study called the New Directions in English for Specific Purposes Research. Those studies focused on examining future research directions by looking at previous works on ESP research.

Hyland (2007) introduced some of the major ideas and practices that currently influence ESP, focusing on six aspects: needs analysis, ethnography, critical approaches, contrastive rhetoric, social constructionism, and discourse analysis. Belcher (2009) wrote a paper about what ESP is and can be. Besides, other scholars also conducted a review work to examine new directions in English for Specific Purposes research (Belcher, Johns & Paltridge. 2012). In addition, Starfield (2012) designed a research study into the historical account of language for specific purposes. However, most of these research studies gathered synchronic data, and so their findings might not have depicted real trends. Thus, there is still a need to examine trends in ESP using diachronic data – data collected in various periods of time. In this research study, the collected data stretched to three decades. Put another way, the current study examined topics trends using a longer time period than previous studies. It described a bigger picture of English for Specific Purposes journal research topics changes which is useful to better understand what actually happened from 1986-2017.

2.4 Corpus Analysis

Hunston (2002) mentioned that linguists have always used the word corpus to describe a collection of naturally occurring examples of language, consisting of anything from a few sentences to a set of written texts or tape recordings, which have been reserved for collections of texts (or parts of text) that are stored and accessed electronically. Sinclair (2005) defined corpus as a collection of pieces of language text in electronic form, selected according to external criteria to represent, as far as possible, a language or language variety as a source of data for linguistic research (see also Sinclair, 1991). McEnery, Xiao & Tono (2006) observed that there is increasing consensus that a corpus is a collection of (1) machine readable (2) authentic texts (including transcripts of spoken data) which is (3) sampled to be (4) representative of a particular language or language variety. Regardless of who defined it, corpus is viewed in terms of both its form and its purpose.

In the past, corpus analysis in ESP got less attention because of the limitations of technology until the computer became popular and massively more powerful (Leech. 1997:2). The growth of technology assists the speed and spread of internet, and a variety of software tool to examine corpora for teaching and learning purposes. In the global context, computers became available in many language settings making corpus-based analysis more convenient (Granger. 2012; Warschauer & Healey. 1998; Aston & Bernardini. 2004).

Aston (2001 : 7) “encourages teachers and learners to work with various kinds of corpora in order to develop linguistic, communicative, cultural competence, engaging and improving their interpretative and productive skills, then their capacity for learning”. Additionally, some linguists argued how corpora can be constructed and described the way to deal with different kinds of information (Barnbrook. 1996; Stubbs. 1996; Aston & Burnard. 1998; McEnery & Wilson 2003; Kennedy. 2014). Johns.1986; Flowerdew. 1993). It can be seen from above the wide use of corpus analysis in various areas using different data, but very little or no research has been conducted to look at trends in the field of English for Specific Purposes using corpus-based framework, so this gap is being addressed in this research.

2.5 Conceptual Framework

The corpus analysis study in this research followed Crawford et al. (2006) framework to analyze the trends in the field of ESP in different decades. Crawford et al. (2006) used keyword analysis to uncover the trends of emphasis within the project management literature from 1994-2003 by examining articles published in the International Journal of Project Management and the Project Management Journal. Trends identified from comparisons from multiple studies are then compared to trends of emphasis identified in a variety of previous studies of changes to examine more significant results in the field. In this study, four subject corpora in each journal were used to create keyword lists through keyword analysis software WordSmith Tools, each one being representative of a five year portion of either IJPM or PMJ four subject corpora were used to create keyword lists. Subject corpora were composed of the titles and abstracts of articles appearing in the two different journals. They use the British National Corpus (BNC) as benchmark, which they argued to provide a general frequency for word use. Words in the three other corpora were identified as unusually frequent words in the study. So the words are related to Project Management were considered keywords of this areas. Then the study used Chi Square (X²) tests that is one of the keyword analysis techniques for identifying keywords based on the comparison of the relatively frequency of words in each corpus. Abstracts and titles of journal articles are generally highly indicative of the content of articles. Then they categorized the keywords in association with the development of global performance-based

standards for project management personnel. Two results were found. The comparison of the four corpora showed the clearest trends uncovered and included a clear reduction in focus on Interpersonal Issues and Quality Management in the Project Management during a 10-year period. At the same time, an increase significance of Project Evaluation and Improvement also were found. Based on Crawford et al. (2006), there are four kinds of topics trends on Project Management from 1994-2003: (1) significant, (2) increasing significance, (3) decreasing significance, and (4) lack of significance.

Some of these were adapted into this current study. While the current research study is informed by the framework Crawford et al. (2006), some changes were instituted. Different research methodologies are like different lenses through which we can see the world. No one of them gives an exclusive view of the truth. Rather, an idea of the objective truth can be developed by triangulating the results of different studies, conducted by different researchers.

Firstly, informed by Crawford et al. (2006) research, the current study examined research topics trends by comparing three different research topics in ten years interval with English for Specific Journal. Four corpora were identified and collected: 1986-1995, 1996-2005, and 2006-2017 and the other one was combined data from 1986-2017. Instead of WordSmith Tools, the current study used AntConc to create absolute frequency list for each period and then used log-likelihood to identify the keywords for each period. According to Anthony (2013), results between AntConc with WordSmith tool are similar as below figure below.

Figure 1 The comparison results of three analysis software programs

Table 1, Top ten words appearing in the US Presidential Inaugural Address of 2009 according to *WordSmith Tools*, *Monoconc Pro*, and *AntConc*

Rank	<i>WordSmith Tools</i>		<i>MonoConc Pro</i>		<i>AntConc</i>	
		(Scott 2012)		(Barlow 2000)		(Anthony 2012)
		Frequency		Frequency		Frequency
1	the	136	the	136	the	136
2	and	111	and	111	and	111
3	of	82	of	82	of	82
4	to	71	to	71	to	71
5	our	68	our	68	our	68
6	we	60	we	60	we	62
7	that	50	that	50	that	50
8	a	46	a	46	a	46
9	is	36	is	36	is	36
10	in	26	in	26	in	26

Based on the figure, the analysis results of three software programs were almost the same except for number 6. In his study, both two software WordSmith tools and MonoConc Pro treat apostrophes (') as part of a word but AntConc does not. In the current study, there is number frequency of personal pronouns and might not affect the result. Thus, AntConc is capable of doing the functions of the other software, so it was used in this study. Moreover, AntConc, unlike the other software, is a free download software and therefore practical among users.

Crawford et al. (2006) simply compared their corpus to a benchmark (BNC), but this research study also makes a comparison against each time period to highlight the changes those periods of time. The different research topics trends of each decade can therefore be presented clearly. Moreover, instead of using Chi square test, the current study chooses log-likelihood for identifying keywords in the study because the Chi square value becomes unreliable when comparing a relatively small corpus to a much larger one (Rayson & Garside. 2000). Analysis deviation can be reduced by using log-likelihood. The choice for log-likelihood in the computation of relative frequencies is its ability to produce reliable results even if the size of corpus is quite small. The statistical measure, log-likelihood “compares the relative frequencies of a word in two data sets as a proportion of the total number of words in each set with higher log-likelihood values showing that a word is more salient in that set” (Carreon, Todd & Knox, 2011. p. 176; see also Rayson & Garside, 2000 for an explanation on log-likelihood use). Log likelihood is computed using the following formula:

$$-2 \ln \lambda = 2 \sum_i O_i \ln \left(\frac{O_i}{E_i} \right)$$

McDonald & Ransom (2008) claims that "Chi-squared" probably means minimum chi-squared estimation and "log-likelihood" probably means maximum-likelihood. Due to the current research purpose, log-likelihood was chosen to highlight keywords that are the most significant words in texts. Words with log-likelihood (LL) values of at least 15 were considered keywords and were iteratively categorized into themes. High LL values or the highly positive LLs are indicative of the strong presence of words. Low or negative LL values were indicated of weak presence of a word. Rayson, Berridge & Francis (2004) mentioned that the trade-off is that the critical value is higher than at the usual 5% level at 15.13.

95th percentile; 5% level; $p < 0.05$; critical value = 3.84

99th percentile; 1% level; $p < 0.01$; critical value = 6.63

99.9th percentile; 0.1% level; $p < 0.001$; critical value = 10.83

99.99th percentile; 0.01% level; $p < 0.0001$; critical value = 15.13

The above discussion explained why this current study chose AntConc as the software and used log-likelihood to identify relative frequencies.

2.6 Summary

In brief, the current study discussed five sections: (1) investigating previous studies into trends in research, (2) review of linguistic research trends, (3) related research on ESP trends studies, (4) corpus analysis, and (5) conceptual framework. The conceptual framework will be the guide for all the analysis that will be done in this research. The review of related literature will be used in the discussion of findings.



CHAPTER 3

METHODOLOGY

3.1 Introduction

This chapter was divided into three sections. Section 1 discussed the Data that included Data selection, Data preparation and Data Justifying. Section 2 explained the analysis of data which includes absolute frequency, relative frequency and thematic analysis. Finally, section 3 introduces the criteria for the selection of what a word is.

3.2 Data

To better understand how the current study prepared Data gradually, it is necessary to introduce three steps in this detail: (1) Data selection, (2) Data preparation and (3) Data comparisons.

3.2.1 Data selection

The study collected 628 abstracts from the English for Specific Purposes journal. Three decades of data divided into three periods: 1986-1995, 1996-2005, and 2006-2017 were collected and examined. These three sets of data were saved as plain text files and called Data 1, Data 2 and Data 3, respectively. Next, the study also combined all data in one file and it is called Data 4.

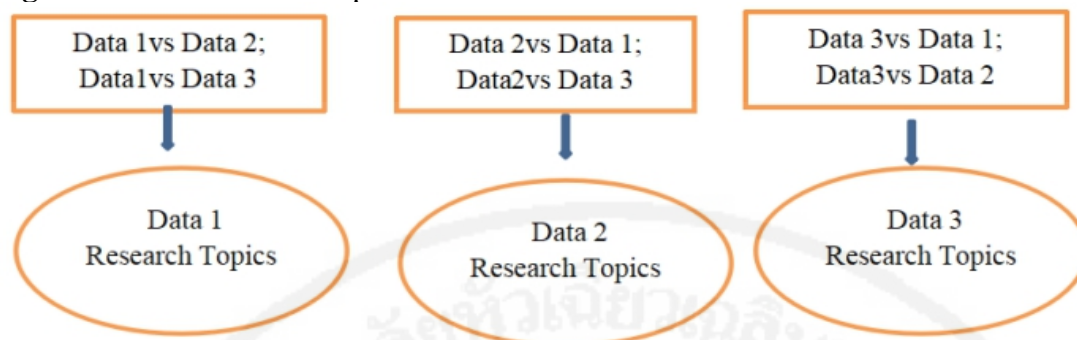
3.2.2 Data preparation

The paper examined the trends in the field of *English for Specific Purposes* (ESP) using a technique developed in the field of corpus linguistics. In past corpus study also posited that using technology (e.g. software) enables a faster and more convenient analysis that is less prone to human error (see also Granger. 2012). The study intends to collect three corpora texts and show them in different years: 1986-1996, 1997-2007, and 2008-2016. These sets of primary data are saved as separate plain text files named earlier as Data 1, Data 2 and Data 3, respectively. These sets of data are analyzed individually for absolute frequency followed by relative frequency, which are discussed in detail in the succeeding sections. There are two types of comparator corpora or benchmarks that were used in the computation of relative frequencies and eventually in the analysis of keywords. These are the British National Corpus (BNC) and the data from different periods. The use of these comparator corpora is discussed in detail below.

3.2.3 Data comparisons

The first comparator corpus is the British National Corpus. The BNC is a collection of 100-million-word snapshot of general English usage, both spoken and written, taken at the end of the twentieth century. The corpus contains 400 samples from the widest possible range of linguistic productions which includes published and unpublished linguistic context (90% written and 10% spoken) (Burnard. 2009). Compiled mostly from general English language use and with its enormous size, the BNC is useful when used as a benchmark for understanding the content of a specialized corpus such the abstracts of the *English for Specific Purposes* journal.

The second comparator corpus is the data itself. Each of the data sets obtained from the three periods was used as a benchmark. Comparing data with similar data explores the contents of each period in relation to another time of the produce findings that show the similarities and differences between these data sets as well as changes of information from one data set to another.

Figure 2 Data vs. Data comparisons

Based on Figure 2, the rectangles show how to compare Data vs Data of each of the three periods. For example in rectangle 1, Data 1 is compared with Data 2, where Data 1 is the node corpus while Data 2 is the comparator corpus or benchmark. A 10-decade data in each of the period is compared against two periods, so in each of the rectangles, two comparisons can be seen. These two comparisons will shed light on the research topics (in the circles) found in each of the period.

To analyze the keywords in Data 1, Data 1 is uploaded into the *AntConc* 3.5.7 software as the node corpus (corpus file). Then move to ‘Tool Preferences’ setting and select ‘Keyword List’. After that, the reference corpus is uploaded by clicking on ‘Add files’ button followed by the ‘Load’ button. Finally, this setting is applied by clicking on the ‘Apply’ button. The statistical tool, log-likelihood, is already set as default function of this software.

3.3 Data Analysis

In this analysis section, it included three steps to analyze data which were (1) Absolute frequency, (2) Relatively frequency and (3) Thematic analysis.

3.3.1 Absolute frequency

To compute the absolute frequency of words in the abstracts, the plain text files saved earlier as data sets were uploaded into the software called *AntConc* 3.5.7, which is a multiplatform tool available for free download at <http://www.Laurenceanthony.net/software/Antcon3.5.7/> (Anthony. 2017). There are two steps to follow. The first one is to count the absolute frequency of the entire corpus. The result was compared against the British National Corpus (BNC) in the relative frequency analysis. The second one is to count the absolute frequency of each period or data set. Automatically generated results arranged in the order of decreasing absolute frequency are further checked for information that was included in the next step (absolute frequency analysis). The criteria for this selection process were outlined in Section 3.5 of this Chapter. The results obtained in the analysis of absolute frequency were examined further. While findings in the absolute frequency analysis were quite insightful, the words with the highest frequencies are usually words of general language use (Carreon, Todd & Knox. 2013). Thus, there is a need to compute the relative frequency of words using the statistical measure of log-likelihood. This statistical measure explained in detail below. Table 2 below shows a sample wordlist with decreasing absolute frequency order (e.g. Data 4).

Table 2 Top 20 words with highest absolute frequencies

No.	Words	Absolute Frequency	No	Words	Absolute Frequency
1	the	7092	11	english	920
2	of	5405	12	on	861
3	and	4054	13	as	818
4	in	3758	14	students	753
5	to	2542	15	research	730
6	a	2306	16	are	712
7	for	1219	17	an	642
8	that	1083	18	with	623
9	this	1014	19	by	589
10	is	927	20	study	582

In this research two abbreviations will be used throughout. The table presents the top 20 words with highest absolute frequencies by ranking them in their decreasing number of absolute frequency. In the study, only content words (*e.g. nouns, pronouns, verbs, adjectives, adverbs, etc.*) which appear in the table were chosen for further analysis. Function words (*e.g. auxiliaries, prepositions, articles, etc.*) were not included in the analysis. This is because the main concern of this research enterprise is to identify the topics in the English for Specific Purposes journal and these topics are mainly nouns or noun phrases whereas the function words simply add to the grammaticality of these nouns or phrases but do not change their meanings.

3.3.2 Relative frequency

After counting absolute frequency words, the relative frequency words can now be computed. In the study, comparisons are done using log-likelihood (Dunning, 1993) to examine relatively frequent words. Two main comparisons were done using different benchmarks. On the one hand, the combined data (Data 1 + Data 2 + Data 3) or referred to as Data 4 was compared with the British National Corpus (BNC) to find the characteristic features of the entire data which may shed light on the overall topics on the ESP Journal website. On the other hand, to identify the similarities and differences in topics in the three data, each of these data is compared against each other.

3.3.2.1 Relative frequency analysis: Data 4 vs. BNC

Keywords are examined by comparing the data in question against a benchmark using the statistical measure, log-likelihood. The results obtained from the absolute frequency analysis are further examined for keywords. Using log-likelihood as statistical tool, words with absolute frequency of at least 15 were compared with the BNC to show the relative frequency of each word and words with high relative frequency values are characteristic features of the data under study. Examples of keywords with their frequencies and LL values are shown in Table 3 below.

Table 3 Top 10 relative keywords

No.	Keywords	f	LL	No.	Keywords	f	LL
1	english	920	4459.87	6	writing	550	3032.65
2	esp	332	4457.55	7	discourse	350	2710.34
3	students	753	4258.81	8	language	543	2467.64
4	genre	407	4179.18	9	study	582	2550.54
5	research	730	3235.97	10	analysis	471	2332.21

The next step is that the keywords in Table 3 were then iteratively categorized into themes.

3.3.2.2 Relative frequency analysis: Data vs. another Data

Using log-likelihood again as a statistical tool, words from one time with absolute frequency of at least 10 were compared with the words in another period to show the relative frequency of each word, and words with high relative frequency values are characteristic features of the abstracts during that time period. Figure 3.1 shows the flow of the analysis.

Table 4 Top ten Relative frequencies from Data vs Data (f=frequency; LL=log-likelihood) (Data 1 vs. Data 2). The other keywords can be found in Appendix 1.

No	f	LL	Keywords (D1vs D2)	No	f	LL	Keywords (D1vs D2)
1	18	35.36	rp	6	11	21.61	vocational
2	16	31.43	cr	7	22	19.76	verbs
3	16	31.43	notetaking	8	10	19.64	inanimate
4	40	26.6	design	9	15	19.03	assistants
5	35	24.89	problems	10	54	18.74	scientific

These keywords were categorized into themes in concordances lines of *AntConc* 3.5.7 in next section.

3.3.2.3 Thematic Analysis

On this section, there are two steps to conduct thematic analysis: (1) checking each relative keywords of each Data set through concordance hits by *AntConc* 3.5.7 (2) categorizing the keywords based on thematic analysis of concordance lines for each relative keywords

In corpus linguistics, a simple concordance is a list of examples of a word as they occur in a corpus, presented so that the linguist can read them in the context in which they occur in the text. The most popular way to display the results of a search in a corpus is in the form of a concordance (Lüdelling & Kytö. 2008). Concordances provide an account for specific instances of how a keyword is used and its frequency of use in context, through analysis of the patterns of meanings that were presented with each keyword.

For example, to identify the keyword “vocational” potential theme under its patterns, the study examines the concordances for context that precedes and follows each hit. Then each keyword is categorized into theme depending on context.

Figure 3 Concordance analysis example

Hit	KWIC	File
1	ility by forming working relationships with their vocational counterparts . In a study supported by t	data 1.txt
2	, however, only if a vision of good vocational education and good language instruction	data 1.txt
3	by the National Center for Research in Vocational Education , the author and her research	data 1.txt
4	es. in both secondary and postsecondary settings, vocational ESL (VESL) teachers address technical c	data 1.txt
5	unexpected finding was that the most effective vocational instruction came about not as a result.	data 1.txt
6	of these relationships, and their impact on vocational instruction . The questions were investi	data 1.txt
7	data were collected at six highly recommended vocational programs in the United States; the rest	data 1.txt
8	them, and by creating opportunities for the vocational students to speak with their teachers a	data 1.txt
9	ational/VESL teacher collaboration, but from the vocational teachers' participation in language-ori	data 1.txt
10	came about not as a result of vocational/VESL teacher collaboration , but from th	data 1.txt
11	sed language instruction in a tertiary setting 91 Vocational/VESL teacher collaboration : some substa	data 1.txt

In this figure, the word “vocational” has one theme on content. Based on the findings, people could note that there is a keyword that related to “vocational” (e.g. *Vocational ESL teachers, vocational programs, and vocational students*). All these concordance are related to providing a theme “vocational” that people can group together. In other cases, the themes were ignored when only a small number of keywords are related to a topic. This process was applied in all concordance analysis of *AntConc 3.5.7*.

A keyword could not be taken as directly indicating a theme. The current study needs to identify theme through iterative thematic analysis. Theme is used as attribute, descriptor, element, and concept. Javadi & Zarea (2016) stress that “A theme refers to a specific pattern of meaning found in the data refer to research purpose; A theme may be repeated a few times but involve a significant aspect in answering the research question. For example, the themes obtained from the study may not be necessarily the most common themes. A further advantage based on other scholars (Braun & Clarke. 2006; Clarke & Braun. 2013) opinion that thematic analysis is a method rather than a methodology in teaching and learning content. Thematic analysis is a method for identifying and analyzing patterns of meaning in a dataset (Braun & Clarke, 2006). It can handle large datasets so that useful comparisons between groups can be made. At the same time, to identify the research topics, iterative thematic analysis (Krippendorff. 1980; Krippendorff. 2012) is used to examine the keywords based on the concordance as shown on *AntConc 3.5.7*. The software could apply iterative analysis to themes in a quick way with concordance lines in the current study.

3.4 Thematic categorization of topics

To define what each theme is about is an essential step to thematic analysis. The themes in this study are the topics mentioned on the *ESP Journal* website from 2011-2017 <https://www.journals.elsevier.com/english-for-specific-purposes/> Second language acquisition in specialized contexts, (2) Needs assessment, (3) Curriculum development and evaluation, (4) Materials preparation, (5) Discourse analysis, (6)

Descriptions of specialized varieties of English, (7) Teaching and testing techniques, (8) The effectiveness of various approaches to language learning and language teaching, (9) The training or retraining of teachers for the teaching of ESP, (10) Aspects of ESP needing development, (11) Areas into which the practice of ESP may be expanded, (12) Possible means of cooperation between ESP programs and learners' professional or vocational interests, and (13) Implications that findings from related disciplines can have for the profession of ESP. However, these topics were found on the website in latest period and may not directly represent the first two periods. In other words, the current study needed to check older literature reviews of trends studies to find out the themes. An understanding of past studies research topics literature can also be gleaned from this study. The current study attempted to identify the past trends study, such as the study conducted by (Hewings, 2002) of *English for Specific Purposes* journal from 1980-2001 which included over 20 years. It provided an account of research topics found in first two decades of the *English for Specific Purpose* journal.

Table 5 Past trends studies

Authors	Objectives	Data	Methodology	Categories
Hewings (2002)	overview of ESP research published by Elsevier	full papers published from 1980-2001	qualitative research	1.text/discourse analysis 2.program description 3.needs analysis/syllabus design 4.materials/methods 5.argument/discussion (no data) 6. testing 7. teacher training 8. others
Hyland (2007)	discuss the current ESP research aspects	published papers on ESP areas in past forty years	review synchronic data	1.needs analysis 2.ethnography 3.critical approaches 4.contrastive rhetoric 5.Social constructionism 6.discourse analysis
Brunton (2009)	Buildan account possible future directions from an early time until 2009	published papers on ESP areas in an early time until 2009	review synchronic data	1.needs assessment 2.syllabus materials textbooks course design, 3.negotiated curriculum 4.assessment & evaluation

The table 5 provides a more detailed breakdown of the topic of papers, with seven main categories identified. Hewings (2002) identified seven categories of topics on *English for Specific Purposes* journal websites that included (1) Needs assessment, (2) Curriculum development and evaluation, (3) Materials preparation, (4) Discourse analysis (5) Teaching and testing techniques (6) The training or retraining of teachers for the teaching of ESP and (7) Possible means of cooperation between ESP programs and learners' professional between ESP programs and learners' professional or vocational interests. Notably, the topic *Argument/Discussion* was not found on the

website of *English for Specific Purposes* journal because of the differences in research method and research data of the two trends studies.

At the beginning, compared with Hewings (2002) research results, it was found that some topics were not identified. For example, the topics (1) Second language acquisition in specialized contexts, (2) Descriptions of specialized varieties of English, (3) The effectiveness of various approaches to language learning and language teaching, (4) The aspects of ESP needing development, (5) Areas into which the practice of ESP may be expand, and (6) Implications that findings from related disciplines can have for the profession of ESP. It is worth to mention that the special issue of *English for Specific Purposes* Journal about English as a *lingua franca* in 2005 which is related to the topic *Descriptions of specialized varieties of English*. It means the topic was interested on *ESP journal* from 1996-2005, but the topics mentioned were not from research studies. Next, compared with the current study, Hyland (2007) & Brunton (2009) have common and uncommon opinions on topics in their researches. First, in common opinions, there are two topics (1) needs analysis and (2) discourse analysis mapped on the topics posted on *English for Specific Purposes* journal website were found in Hyland (2007) study. Four common category topics were found: (1) Needs assessment, (2) Syllabus materials textbooks course design, (3) Negotiated curriculum, (4) Assessment & Evaluation were found in Brunton (2009). These topics were similar to the topics posted on *English for Specific Purposes* website as well. At the same time, in uncommon opinions, there were differences in topics between Hyland (2007) and *English for Specific Purposes* journal, such as (1) critical approaches, (2) contrastive rhetoric and (3) social constructionism.

Based on the table, different opinions about the nature of ESP abound in the literature. Other possible, but unverifiable, reasons for differences in identified themes of significance might include variation between sample groups, differences in sampling method and differences in the ways that topics were identified. In brief, 7 topics were categorized into a table from 1986-1995, while 8 topics were categorized into a table from 1996-2005.

Firstly, the research topics of *English for Specific Purposes* from 1986-1995 were presented as below:

Table 6 Categorized topics from 1986-1995

No	Topics
1	Needs assessment
2	Curriculum development and evaluation
3	Materials preparation
4	Discourse analysis
5	Teaching and testing techniques
6	The training or retraining of teachers for the teaching of <i>ESP</i>
7	Possible means of cooperation between ESP programs and learners' professional between ESP programs and learners' professional or vocational interests
8	Other topics

Note: "other topics" means the topics were not identified

Seven identified topics and one other topic composed the topics list from 1986-1995. Secondly, the research topics of *English for Specific Purposes* from 1996-2005 were presented below.

Table 7 Categorized topics from 1996-2005

No	Topics
1	Needs assessment
2	Curriculum development and evaluation
3	Materials preparation
4	Discourse analysis
5	Descriptions of specialized varieties of English
6	Teaching and testing techniques
7	The training or retraining of teachers for the teaching of <i>ESP</i>
8	Possible means of cooperation between ESP programs and learners' professional between ESP programs and learners' professional or vocational interests
9	Other topics

Note: "other topics" means the topics were not identified.

A total of eight topics were identified and one other topic were included in the topics list from 1996-2005. The topic *Descriptions of specialized varieties of English* was added to the 1996-2005 list.

From this analysis, it was found that the topics on the website of the English for Specific Purposes Journal are relevant for all the periods and therefore can be used for comparing with the findings of this research study.

3.5 Criteria for the selection of what a word is (adapted from Carreon, Todd and Knox. 2013)

A word in corpus analysis is quite difficult to pin down, so it is crucial to operationalize the definition of a word in this research study. The following operationalized definitions of a word are used as guidelines in deciding what a word is in this study.

- A word is a content word. Content words include nouns (including proper and common nouns), adjectives, verb and adverbs.
- Numbers (e.g. 25, 1, 10) are not considered as words, but worded numbers (e.g. ten, fifteen, hundred) are included.
- Abbreviations related to the field of English for Specific Purpose and language are considered as words. such as ESP and EFL.

3.6 Summary

In this chapter, I discussed three sections, namely (1) Data (2) data analysis (3) categorize topics for thematic analysis (4) criteria for the selection of what a word is. The content of this Chapter will be used as guidelines for the analysis of data and presentation of results 3.5 and interpretation of findings.

CHAPTER 4

RESULTS AND DISCUSSION

This study attempts to analyze the English for Specific Purposes journal research topics trends according to three different time periods: 1986-1995, 1996-2005, and 2006-2017. To achieve those research purposes, absolute frequencies and relative frequencies and concordance analysis were used. The results and the discussions of the results of these analyses are presented in this chapter.

4.1 Results

4.1.1 Absolute Frequency

As mentioned in Chapter 3, the absolute frequency of words provides the actual number of words as they are used in the corpus. The results of the absolute frequency analysis are shown in Table 8 below.

Table 8 Top 10 words with the highest absolute frequencies

Data 1	f	Data 2	f	Data 3	f
1. the	1284	1.the	2209	1. the	3599
2. of	1075	2. of	1715	2. of	2615
3. and	707	3. and	1268	3. and	2079
4. in	665	4. in	1085	4. in	2008
5. to	489	5. to	811	5. to	1242
6. a	452	6. a	698	6. a	1156
7. is	236	7. for	369	7. for	618
8. for	232	8. this	349	8. english	563
9. this	189	9. that	343	9. that	556
10.that	184	10. is	300	10. this	476

The top 10 words in Data 1, Data 2 and Data 3 indicate some initial implications. All those words are function words (except *english* in Data 3) which are common in general language use. For instance, the article *the* is commonly used as a component when writing long running sentences in English to signal cohesion and specificity of the noun that comes after it (e.g. *the academic discipline*). The preposition *of*, *in* and *to* are also main components of English writing such as possession (e.g. *of case*) and showing a goal (e.g. *to a large class*).The conjunction *and* is commonly used in a set or in a series of the same kind (e.g. *business news stories and academic journal academics*). However, they may not depict the main content of the abstracts in the ESP Journal. Thus, there is a need to examine the relative frequencies of these words which are computed by comparing the absolute frequencies of the research data with a benchmark using the statistical measure of log-likelihood (LL).

4.1.2 Relative frequency: Data 4 vs. British National Corpus (BNC)

Words with relative frequency of at least 15 are compared against words on the BNC to obtain the keywords that may shed light on the overall topics found on the ESP journal website. The top 90 keywords are iteratively matized, but due to space constraints only the top 10 words with the highest relative frequencies are shown in Table 9 below. The remaining keywords are placed in Appendix 5.

Table 9 The top 10 words with the highest relative frequencies

NO	keywords	f	LL	Examples	Topics from ESP journal
1	english	920	4777.09	business English, engineering English, legal English	Descriptions of specialized varieties of English
2	esp	332	4457.55	ESP course developers, ESP courses evaluation, an ESP course design	Curriculum development and evaluation
3	language	543	4264.30	ITA second language acquisition, definable skills in English language, disciplinary(legal) culture and language	Second language acquisition in specialized contexts
4	genre	407	4188.63	academic discourse, academic writing genre, an academic speech genre	Discourse analysis
5	academic	562	4054.62	writing tasks in a genre-based, physics writing for publication, general academic writing	Discourse analysis
6	corpus	339	3240.25	expert corpus, John Swales Conference Corpus, British Academic Spoken English	Materials preparation
7	writing	550	3046.59	academic genre, discourse genre, genre analysis	Discourse analysis
8	discourse	350	2701.34	discourse analysis, discourse communities and community, discourse structure	Discourse analysis
9	study	582	2559.40	data analysis, genre analysis study discourse analysis study	Discourse analysis
10	analysis	470	2469.77	a corpus-based analysis, a genre analysis, discourse analysis	Discourse analysis

The research topics of Data 4 were found when all data were combined as below. In Table 9 the words with relative frequencies of 15.00 above were included and considered as the keywords. Then these keywords were categorized based on the topics from English for Specific Purposes journal. For example, the most frequent topic was Discourse Analysis (e.g. genre [f=407; LL=4188.63; academic discourse, academic writing genre, an academic speech genre]). Finally, the data were combined as shown in the table below.

Table 10 All Data vs. English for Specific Purposes Journal Research Topics

No	Topics	f	Percentage
1.	Second language acquisition in specialized contexts	13	14.13%
2.	Needs assessment	8	8.69%
3.	Curriculum development and evaluation	7	7.7%
4.	Materials preparation	10	10.86%
5.	Discourse analysis	33	35.86%
6.	Descriptions of specialized varieties of English	4	4.34%
7.	Teaching and testing techniques	0	0.00
8.	The effectiveness of various approaches to language learning and language teaching	8	8.69%
9.	The training or retraining of teachers for the teaching of <i>ESP</i>	0	0.00
	Other Topics		
1.	Aspects of <i>ESP</i> needing development	0	0.00
2.	Areas into which the practice of <i>ESP</i> may be expanded	0	0.00
3.	Possible means of cooperation between <i>ESP</i> programs and learners' professional or vocational interests	2	2.17%
4.	Implications that findings from related disciplines can have for the profession of <i>ESP</i>	7	7.7%
	Total	92	100%

Table 10 shows that the research topics in the English for Specific Purposes Journal or also known as the ESP Journal for three decades from 1986-2017 were Discourse analysis (N=33; 35.86%), Second language acquisition in specialized contexts (N=13; 14.13%), Materials preparation (N=10; 10.86%) and Needs assessment (N=8; 8.69%), Approaches to language learning and language teaching (N=8; 8.69%), Curriculum development and evaluation (N=7; 7.7%), Implications that findings from related disciplines can have for the profession of ESP (N=7; 7.7%), Descriptions of specialized varieties of English (N=4; 4.34%), and Possible means of cooperation between ESP programs and learners' professional or vocational interests (N=2; 2.17%). From the table, it can also be noticed that the top three most researched topics were the following: (1) Second language acquisition in specialized contexts, (2) Materials preparation, and (3) Discourse analysis, in that order. Conversely, some other topics might have been conducted such as (1) Teaching and testing techniques, (2) The training or retraining of teachers for the teaching of ESP, (3) Aspects of ESP needing development, and (4) Areas into which the practice of ESP may be expanded.

4.1.3 Relative frequency: One Period vs Another Period (characteristic features of each period)

As mentioned in the previous chapter, six comparisons between data against another data were done. The following sections present the findings of these comparisons. Three sets of results were found from the following comparisons: (1) Data1 vs Data 2 and Data 1 vs Data 3, (2) Data 2 vs Data1 and Data 2 vs Data 3, (3) Data 3 vs Data 1 and Data 3 vs Data 2.

4.1.3.1 Data1 vs Data 2 and Data 1 vs Data 3

This section presents the two comparisons of Data 1: Data 1 vs Data 2 and Data 1 vs Data 3. Table 11 shows the keywords analysis results from Data 1 vs Data 2 comparison.

Table 11 Keywords, Examples and Categories of Data 1 vs Data 2

No	f	LL	Keywords	Examples	Topics from ESP Journal
1	18	35.36	rp	RP introductions, section of RP, quasi-negative expressions in RP	Discourse analysis
2	16	31.43	cr	(CR) in medical English, CR Introductions), CR favors shields	Discourse analysis
3	16	31.43	notetaking	practice notetaking skills, methods of notetaking, listening and notetaking	Second language acquisition in specialized contexts

Table 11 (Continued)

No	f	LL	Keywords	Examples	Topics from ESP Journal
4	40	26.6	design	ESP course design, syllabus design, materials design	Curriculum development and evaluation
5	35	24.89	problems	writing problems of doctoral students, problems of content, problems for student writers	Discourse analysis
6	11	21.61	vocational	vocational education, vocational programs, creating opportunities for the vocational students	Possible means of cooperation between ESP programs and learners' professional or vocational interests
7	22	19.76	verbs	active verbs with inanimate subjects, reporting verbs in medical journal articles, inanimate subjects with active verbs	Discourse analysis
8	10	19.64	Inanimate	Active verbs with inanimate subjects, active verbs with inanimate subjects, relative frequency of inanimate subjects	Discourse analysis
9	15	19.03	assistants	communication strategies for international teaching assistants, An advanced training class for international teaching assistants, instruction for international teaching assistants	The training or retraining of teachers for the teaching of ESP
10	54	18.74	scientific	English-language scientific journals, uniformity of scientific discourse, epistemic modality in scientific discourse	Discourse analysis

Table 11 (Continued)

No	f	LL	Keywords	Examples	Topics from ESP Journal
11	12	17.46	lsp	LSP and interlanguage studies, LSP vs non-LSPIL talk, interrelations of LSP	Discourse analysis
12	8	15.71	approximators	Scientific writers mostly resort to approximators, significantly richer in approximators, a hedging convention followed by approximators	Discourse analysis
13	8	15.71	shields	rp and cr favors shields, shields and compound-hedges, shields, approximators, and compound hedges)	Discourse analysis
14	8	15.71	treatment	treatment groups outperformed, evaluate the treatment, some aspects of the treatment	Discourse analysis
15	23	15.61	Est	important feature of EST discourse, tense usage in EST discourse, Aspects of scientific discourse	Discourse analysis
16	25	15.12	technology	appropriate technology model of communicative course design, writing in science and technology, undergraduate science and technology courses	Curriculum development and evaluation

The table 11 above shows that the most researched topic when Data 1 was compared with Data 2 (D1 vs D2) was Discourse analysis (e.g. rp [N=18; LL=35.36; RP introductions, section of RP]). Other topics, while also found, were less frequently investigated. There were only 5 out of 13 topics announced by the ESP Journal on their website that were found.

Table 12 Keywords, Examples and Categories of Data 1vs Data 3

No	f	LL	Keywords	Examples	Topics from ESP journal
1	23	61.46	est	tense usage in EST discourse, tense choice in EST discourse, important feature of EST discourse	Discourse analysis
2	18	48.1	rp	rhetorical sections of research papers (RP), comments sections of RP, quasi-negative expressions in RP Introductions	Discourse analysis
3	54	42.76	scientific	scientific discourse community, hedging in scientific discourse, text structuring in scientific discourse	Discourse analysis
4	16	42.75	cr	case reports (CR) in medical English written discourse, adaptors of frequency in cr introduction	Discourse analysis
5	16	42.75	notetaking	heuristic of lecture notetaking, practice of notetaking, notetaking study skills programs	Second language acquisition in specialized contexts
6	25	40	technology	appropriate technology model of communicative course design, undergraduate science and technology courses, classes exclusively for science and technology majors	Curriculum development and evaluation
7	12	32.06	interlanguage	LSP and interlanguage, variability in interlanguage reconsidered, interlanguage of 25 Francophone Zairean students	Second language acquisition in specialized contexts
8	22	31	verbs	inanimate subjects with active verbs, use of active verbs with inanimate subjects, discourse verbs	Discourse analysis

Table 12 (Continued)

No	f	LL	Keywords	Examples	Topics from ESP journal
9	52	30.65	skills	developing presentation skills, writing skills, transferable teaching skill	Second language acquisition in specialized contexts
10	35	28.44	problems	writing problems of Jordanian Arab students, problems at the sentence level, problems at the paragraph level	Second language acquisition in specialized contexts
11	30	27.63	type	a text-type and move analysis study, ME text type, type of discourse in the conclusion	Discourse analysis
12	40	27.49	design	an ESP course design, communicative course design, Materials design projects	Materials preparation
13	10	26.72	inanimate	inanimate subjects in scientific prose, active verb with an inanimate subject, active verbs with inanimate subjects	Discourse analysis
14	14	26.57	tests	contemporary ESP tests, reading comprehension tests, field-specific speak tests	Teaching and testing techniques
15	24	24.09	curriculum	learner data in curriculum development, problematic aspects of curriculum development, ESP curriculum development	Curriculum development and evaluation
16	14	23.39	tense	tense usage in EST discourse, tense choice in EST discourse, govern tense usage in scientific articles	Discourse analysis
17	39	23.2	text	medical text types, a text-type and move analysis study, within-text structuring in scientific discourse	Discourse analysis

Table 12 (Continued)

No	f	LL	Keywords	Examples	Topics from ESP journal
18	12	21.8	difficulty	linguistic difficulty for NNS, reading difficulty, evaluative comments regarding task difficulty, a source of difficulty for NNS	Approaches to the effectiveness of various approach to language learning and language teaching
19	30	21.65	esl	ESL students' use of academic skills in content courses, content-based ESL reading instruction, ESL graduate students' writing	Descriptions of specialized varieties of English
20	8	21.37	schema	appropriate schema for approaching the textbook, a schema proposed for approaching the text, schema of popularized medical texts	Discourse analysis
21	8	21.37	shields	(shields, Approximators, and compound hedges), CR favors shields, shields and compound-hedges	Discourse analysis
22	36	20.8	materials	a variety of classroom materials, curriculum materials written, teaching materials for lecture comprehension	Materials preparation
23	59	20.69	course	an ESP course design, ELT course design, course evaluation in ESP	Curriculum development and evaluation
24	15	20.63	assistants	instruction for international teaching assistants, communication strategies for international teaching assistants, language problems of foreign teaching assistants	The training or retraining of teachers for the teaching of ESP
25	30	19.62	Problem	the problem for ESL students, the problem question in English for academic legal purposes, problem that occurred in chemistry lectures	Discourse analysis

Table 12 (Continued)

No	f	LL	Keywords	Examples	Topics from ESP journal
26	11	19.45	vocational	vocational education, vocational ESL (VESL) teachers, vocational students	Possible means of cooperation between ESP programs and learners' professional or vocational interests
27	95	19.33	discourse	scientific discourse in studies, discourse features, political discourse	Discourse analysis
28	24	18.86	american	Anglo-American writers, American & international students, American lecturers	Discourse analysis
29	13	18.62	politeness	Politeness strategies in business letters, politeness in writing, negative kind of politeness	Discourse analysis
30	15	18.61	subjects	inanimate subjects in scientific prose, Verbs with inanimate subjects, inanimate subjects with active verbs	Discourse analysis
31	78	18.61	teaching	teaching English for academic purposes, a language teaching tool, language teaching methodology	The effectiveness of various approach to language learning and language teaching
32	9	18.15	good	good language learner, good language learning, good language instruction	Descriptions of specialized varieties of English
33	44	17.5	reading	reading in ESP, reading comprehension of scientific English, reading requirements of second language students	Second language acquisition in specialized contexts

Table 12 (Continued)

No	f	LL	Keywords	Examples	Topics from ESP journal
34	17	17.37	described	an intensive ESP thesis-writing course is described an empirical study of vocabulary teaching in science lecture, discourse in university classrooms are not well described	Discourse analysis
35	17	17.37	hedges	hedges in the case report section, shields and compound-hedges, Hedges and textual communicative function	Discourse analysis
36	17	17.37	Processes	writing processes of Spanish scientists, students' composing processes, processes of forming community through discourse	Discourse analysis
37	12	16.51	lsp	LSP and interlanguage studies, non-LSPIL talk, brief demonstration of the LSP approach	Second language acquisition in specialized contexts
38	23	16.21	section	section of research article discourse, section of sociology articles, case report section in case report resembles	Discourse analysis
39	6	16.03	conjunct	conjunct use in business news stories, conjunct usage for each genre, conjunct use in the academic journal texts	Second language acquisition in specialized contexts
40	6	16.03	hedged	hedged propositions in RP, east-hedged rhetorical divisions in CR, hedged sections in CR	Discourse analysis
41	6	16.03	mentalistic	mentalistic measures in reading strategy research, mentalistic measures in studying the reading process, appropriateness of mentalistic	Second language acquisition in specialized contexts

Table 12 (Continued)

No	f	LL	Keywords	Examples	Topics from ESP journal
42	6	16.03	Resumes	contents of resumes, reading of resumes, teachers of resumes	Discourse analysis
43	8	15.7	approximators	significantly richer in approximators, approximators as a hedging technique,	Discourse analysis
44	8	15.7	system	Inter-textual relation system, American educational system, western-intellectual-progressive value system	Discourse analysis
45	89	15.43	esp	ESP reading courses, syllabus design in ESP, course evaluation in ESP	Curriculum development and evaluation

The table 12 above shows that the most researched topics when Data 1 was compared with Data 3 (D1 vs D3) were Discourse analysis (e.g. est [N=23; LL=61.4; tense usage in EST discourse, tense choice in EST discourse]); Second language acquisition in specialized contexts (e.g. notetaking [N=16; LL=42.75; heuristic of lecture notetaking, practice of notetaking]), and Curriculum development and evaluation (e.g. technology [N=25; LL=40; appropriate technology model of communicative course design, undergraduate science and technology courses]). Like in the D1 vs. D2 comparison, other topics, while also found, were less frequently investigated. Nine out of 13 topics announced by the ESP Journal on their website were not found.

Table 13 Comparisons of Data 1

No	Topics	D1 vs D2		D1 vs D3	
		N	%	N	%
1.	Second language acquisition in specialized contexts	1	6.25	8	17.77
2.	Needs assessment	0	0.00	0	0.00
3.	Curriculum development and evaluation	2	12.50	4	8.88
4.	Materials preparation	0	0.00	2	4.44
5.	Discourse analysis	11	68.75	24	53.33

Table 13 (Continued)

No	Topics	D1 vs D2		D1 vs D3	
		N	%	N	%
6.	Descriptions of specialized varieties of English	0	0.00	2	4.44
7.	Teaching and testing techniques	0	0.00	1	2.22
8.	The effectiveness of various approaches to language learning and language teaching	0	0.00	2	4.44
9.	The training or retraining of teachers for the teaching of <i>ESP</i>	1	6.25	1	2.22
No	Topics	D1 vs D2		D1 vs D3	
	Other Topics				
1.	Aspects of <i>ESP</i> needing development	0	0.00	0	0.00
2.	Areas into which the practice of <i>ESP</i> may be expanded	0	0.00	0	0.00
3.	Possible means of cooperation between <i>ESP</i> programs and learners' professional or vocational interests	1	6.25	1	2.22
4.	Implications that findings from related disciplines can have for the profession of <i>ESP</i>	0	0.00	0	0.00
TOTAL		16	100%	45	100%

Table 13 shows the comparisons done for Data 1. On the one hand, Data 1 is compared with Data 2; on the other hand, Data 1 is compared with Data 3. In the first comparison, a total of 16 keywords with log likelihood values of not less than 15 were iteratively categorized according to the topics mentioned on the English for Specific Purposes (ESP) Journal. The categorization of the keywords matched with four main topics on the ESP Journal: (1) Discourse analysis (N=11; 68.75%), (2) Curriculum development and evaluation (N=2; 12.50%), (3) Second language acquisition in specialized contexts (N=1; 6.25%), and (4) The training or retraining of teachers for the teaching of ESP (N=1, 6.25%). While there were four main keywords in this comparison, it can be seen that the most frequent type of topics in Data 1 in relation to Data 2 was Discourse analysis. Only one keyword matched with “Other Topics,” namely Possible means of cooperation between ESP programs and learners' professional or vocational interests (N=1; 6.25%). The comparison between Data 1 and Data 3 produced 45 keywords which can be categorized into nine categories. Eight were related to the Main Topics: Discourse analysis (N=24; 53.33%) Second language acquisition in specialized contexts (N=8; 17.77%), Curriculum development and evaluation (N=4; 8.88%) *Materials preparation* (N=2; 4.44%), *Descriptions of specialized varieties of English* (N=2; 4.44%), *The effectiveness of various approach to language learning and language teaching* (N=2; 4.44%), *Teaching and testing techniques* (N=1; 2.22%), and *The training or retraining of teachers for the teaching of ESP* (N=1; 2.22%), while only one keyword was related to Other Topics, namely *Possible means of cooperation between ESP programs and learners' professional or vocational interests* (N=1; 2.22%).

4.1.3.2 Data 2 vs Data 1 and Data 2 vs Data 3

This section presents the two comparisons of Data 2: Data 2 vs Data 1 and Data 2 vs Data 3. Table 14 shows the keywords, examples and categories or topics from Data 2 vs Data 1 comparison.

Table 14 Keywords, Examples and Categories of Data 2 vs Data 1

No	f	LL	Keywords	Examples	Topics from ESP Journal
1	89	35.89	corpus	corpus-based and computer programs for corpus analysis, a corpus-based enquiry	Discourse analysis
2	21	19.71	corpora	specialized corpora of academic writing and speaking, learner corpora, genre-specific corpora	Materials preparation
3	185	17.95	academic	US-based English for academic purposes, academic reading, content to academic study	Descriptions of specialized varieties of English

Table 14 (Continued)

4	18	16.9	workplace	specific workplace needs, workplace English needs, workplace oral communication needs	Needs assessment
5	17	15.96	Mail	e-mail messages, business e-mail messages, electronic mail.	Discourse analysis
6	16	15.02	interpersonal	interpersonal business communication, interpersonal communication skills, interpersonal discursive aspects	Second language acquisition in specialized contexts

The table 14 above shows that the frequencies of five research topics are almost equal in number when Data 2 was compared with Data 1 (D2 vs D1). The findings show that while there were five research topics studied, the number of research studies conducted in each topic was quite low. Also there were only few topics examined. The other eight topics were not found in the comparison results of Data 2 vs Data 1.

Table 15 Keywords, Examples and Categories of Data 2 vs Data 3

No	f	LL	Keywords	Examples	Topics from ESP journal
1	9	17.73	arabic	Arabic speaking WST teachers, Arabic discourse, the basis of communicative Arabic	Discourse analysis
2	9	17.73	est	EST teachers, material in EST courses, goals of EST courses	Curriculum development and evaluation
3	84	16.9	course	EAP genre-based reading course, theme-based course, a technical report-writing course	Curriculum development and evaluation
4	17	16.79	metatext	use of causal metatext (or text about text) in orienting readers,	Second language acquisition in specialized contexts
5	8	15.76	ac	phenomenon of academic conflict, framing of ac, the rhetorical behavior of Spanish, the discursive pattern of French AC	Descriptions of specialized varieties of English

Table 15 (Continued)

No	f	LL	Keywords	Examples	Topics from ESP journal
6	8	15.76	conditionals	conditionals in medical discourse, the use of conditionals across genres, examination of conditionals	Discourse analysis
7	8	15.76	hospitality	hospitality management, hospitality language, hospitality practices	Needs assessment
8	8	15.76	wst	wst teachers rhetorical style. acceptable WST writing, wst style	Descriptions of specialized varieties of English

Similarly, with the comparison results of Data 2 vs Data 3, the table above shows that the frequency of five research topics examined is also almost equal in numbers when Data 2 was compared with Data 3 (D2 vs D3). This has similar implications as the first comparison. The other eight topics were not found in the related keywords tables of Data 2 vs Data 3.

Table 16 Comparisons of Data 2

No	Topics	D2 v D1		D2 v D3	
		N	%	N	%
1.	Second language acquisition in specialized contexts	1	16.66	1	12.5
2.	Needs assessment	0	0.00	1	12.5
3.	Curriculum development and evaluation	1	16.66	2	25
4.	Materials preparation	1	16.66	0	0.00
5.	Discourse analysis	2	33.33	2	25
6.	Descriptions of specialized varieties of English	1	16.66	2	25
7.	Teaching and testing techniques	0	0.00	0	0.00
8.	The effectiveness of various approaches to language learning and language teaching	0	0.00	0	0.00

Table 16 (Continued)

No	Topics	D2 v D1		D2 v D3	
		N	%	N	%
9.	The training or retraining of teachers for the teaching of ESP	0	0.00	0	0.00
Other topics					
1.	Aspects of <i>ESP</i> needing development	0	0.00	0	0.00
2.	Areas into which the practice of <i>ESP</i> may be expanded	0	0.00	0	0.00
3.	Possible means of cooperation between <i>ESP</i> programs and learners' professional or vocational interests	0	0.00	0	0.00
No	Topics	D2 v D1		D2 v D3	
4.	Implications that findings from related disciplines can have for the profession of <i>ESP</i>	0	0.00	0	0.00
TOTAL		6	100%	8	100%

Table 16 shows the comparisons done for Data 2: Data 2 vs Data 1, and Data 2 vs. Data 3. In the first comparison, a total of 6 keywords with log-likelihood values of not less than 15.00 were iteratively categorized according to the topics mentioned on the English for Specific Purposes (ESP) Journal. The categorization of the keywords matched with four main topics on the ESP Journal: (1) Discourse analysis (N=2; 33.33%), (2) Curriculum development and evaluation (N= 1; 16.66%), (3) Second language acquisition in specialized contexts (N=1; 16.66%), and (4) Materials preparation (N=1, 16.66%),(5) Descriptions of specialized varieties of English .While there were five main keywords in this comparison, it can be seen that the five topics of interest in Data 2 in relation to Data 1 were Discourse analysis, Curriculum development and evaluation, Materials preparation ,Second language acquisition in specialized contexts and Descriptions of specialized varieties of English. The comparison between Data 2 and Data 3 produced 8 keywords which can be categorized into nine categories. Eight were related to the Main Topics: (1) Discourse analysis (N=2; 25%), (2) Second language acquisition in specialized contexts (N=1; 12.5%), (3) Needs assessment (4) Curriculum development and evaluation (N=2; 25.5%), and (5) Descriptions of specialized varieties of English (N=2; 25.5). However,

there are no keywords related to other topics of ESP Journal from 1996-2005. To sum up, there were four Main Topics found in Data 2: Second language acquisition in specialized contexts, Discourse analysis, and Descriptions of specialized varieties of English were in two-time comparisons of Data 2. One topic Needs Assessment was found in the results of Data 2 vs Data 1 but dropped in the results of Data 2 vs Data 3. However, the topic Materials preparation was only shown in the results of Data 2 vs Data 1 but dropped in results of Data 2 vs Data 3. Finally, the other seven topics were unpopular or absent in second period (1996-2005).

4.1.3.3 Data 3 vs Data 1 and Data 3 vs Data 2

This section presents the two comparisons of Data 3: Data 3 vs Data 1 and Data 3 vs Data 2. Table 17 below shows the keywords, examples and categories or topics from Data 3 vs Data 1 comparison.

Table 17 Keywords, Examples and Categories of Data 3 vs Data 1

No	f	LL	Keywords	Examples	Topics from ESP journal
1	115	85.22	corpus	a data-driven corpus-based methodology, genre-based analysis of a corpus, Corpus-based approaches	Discourse analysis
2	95	45.91	word	a nursing academic word list, a medical academic word list, the academic word list (AWL), A basic engineering English word list	Materials preparation
3	563	43.87	disciplinary	disciplinary writing competencies, a comprehensive cross-disciplinary model, infra-disciplinary patterns and variation	Implications that findings from related disciplines can have for the profession of ESP
4	264	40.26	English	conjunctive cohesion in English language EU documents, adolescent English language learners, frequency of English-language presentations	Descriptions of specialized varieties of English
5	214	37.25	genre	a corpus-based genre analysis, a multimodal and genre-based analysis, a genre analysis of successful statements	Discourse analysis

Table 17 (Continued)

No	f	LL	Keywords	Examples	Topics from ESP journal
6	51	33.76	business	pedagogy in business English, English business management research, three conventional conceptual metaphors in business discourse:	Discourse analysis
7	42	31.14	corpora	academic writing sub-corpora, three engineering sub-discipline corpora, additional written corpora	Materials preparation
8	52	25.64	workplace	interpretations in workplace genre, spoken workplace discourse, nurses' narratives on workplace English in Taiwan	Discourse analysis
9	52	24.5	across	creating a research space across disciplines, academic discourse varies across disciplines, academic writing across disciplines	Implications that findings from related disciplines can have for the profession of ESP
10	38	23.2	bundles	use of English-language lexical bundles, four-word lexical bundles, the function of lexical bundles	Second language acquisition in specialized contexts
11	48	23.2	discursive	Discursive hierarchical patterning in Economics cases, discursive practices of a classroom, a key discursive feature in institutional talk	Second language acquisition in specialized contexts
12	316	22.14	list	a basic engineering English word list, a corpus-based environmental academic word list, a medical academic word List	Materials preparation

Table 17 (Continued)

No	f	LL	Keywords	Examples	Topics from ESP journal
13	36	21.98	academic	multi-word constructions in academic written English, academic publishing in a global context, academic discourse varies	Discourse analysis
14	34	20.76	stance	Stance expression in learner, presentation of academic stance by student writers, Constructing critical stance	Second language acquisition in specialized contexts
15	80	18.84	challenges	challenges of English-medium higher education, challenges of European student mobility, challenges to learning transfer	Descriptions of specialized varieties of English
16	29	17.7	disciplines	academic writing across disciplines, non-native speakers of English in a variety of disciplines, transfer of learning to the disciplines	Implications that findings from related disciplines can have for the profession of ESP
17	29	17.7	coverage	coverage of the academic Word list, coverage of academic spoken English, coverage of medical academic vocabulary	Materials preparation
18	28	17.09	Interpersonal	interpersonal engagement, interpersonal communication, interpersonal functions of language	Second language acquisition in specialized contexts
19	161	16.95	Management	Business management research, Law and Management cases, project management in Hong Kong	Discourse analysis

Table 17 (Continued)

No	f	LL	Keywords	Examples	Topics from ESP journal
20	424	16.48	findings	curricular implications of the findings for EAP, implications of the findings for EMP, implications of the findings for EAP teachers and students	Implications that findings from related disciplines can have for the profession of ESP
21	27	16.48	research	a corpus of research articles in applied linguistic, ESP research into academic writing, business management research	Descriptions of specialized varieties of English
22	74	16.22	sub	sub-disciplines in the nursing field, engineering sub-disciplines, various sub-disciplines	Implications that findings from related disciplines can have for the profession of ESP
23	25	15.26	critical	critical thinking skills test, critical approach, critical stance in University essays	Second language acquisition in specialized contexts

The table 17 above shows the main Topics when Data 3 was compared with Data 1 (D3 vs D1). They were Discourse analysis (e.g. corpus [N=115; LL=85.22; a data-driven corpus-based methodology, Corpus-based approaches]) and Implications that findings from related disciplines can have for the profession of ESP (e.g. disciplinary [N= 563; LL=43.87; disciplinary writing competencies, a comprehensive cross-disciplinary model, infra-disciplinary patterns and variation]). The other topics were Second language acquisition in specialized contexts (e.g. bundles [N= 38; LL=23.2; use of English-language lexical bundles, four-word lexical bundles, the function of lexical bundles]) and Descriptions of specialized varieties of English (e.g. english [N=264; LL=40.26; conjunctive cohesion in English language EU documents, adolescent English language learners, frequency of English-language presentations]).

Table 18 Keywords, Examples and Categories of Data 3 vs Data 2

No	f	LL	Keywords	Examples	Topics from ESP journal
1	48	44.89	list	the academic word list, a nursing academic word list, a basic engineering English word list	Materials Preparations
3	74	25.38	engineering	Student engineering English corpus, engineering English teaching materials for reading, engineering English word list	Materials preparation
4	95	25.2	disciplinary	perceived disciplinary practices, mixed-disciplinary elf, disciplinary and paradigmatic influences	Implications that findings from related disciplines can have for the profession of ESP
5	26	24.31	calls	NNS service telephone calls, service telephone calls, service calls.	Discourse analysis
6	96	22.53	professional	provide a description of professional communication, study of professional practice, developing rapport in inter-professional communication	Implications that findings from related disciplines can have for the profession of ESP
7	22	20.57	online	in the sub-genre of online advertisements, new online part-genres, online content	Discourse analysis
8	29	20.32	coverage	text coverage of medical academic vocabulary, lexical coverage of a business textbook, coverage of academic spoken English	Materials Preparation
9	67	17.25	practices	discursive practices of the academic community, reading practices of online articles, practices of academic discourse	Needs assessment
10	25	16.87	mathematics	mathematics research article, mathematics classrooms, genre in mathematics	Discourse analysis
11	48	16.74	presentations	graduate student academic presentations, international conference paper presentations, paper presentations	Needs assessment

Table 18 (Continued)

No	f	LL	Keywords	Examples	Topics from ESP journal
12	563	16.03	english	English functions as a business lingual, English in print advertising, English for teachers of EFL	Descriptions of specialized varieties of English
13	17	15.89	Awl	academic word list, awl word families in medical research, (AWL) in academic spoken English	Materials preparation
14	17	15.89	engineers	engineers at a semiconductor manufacturing company in Taiwan, English skills for engineers, English skills needed by engineers in Taiwan	Needs assessment
15	88	15.54	lexical	the function of lexical bundles in academic prose, lexical bundles in English EU texts, lexical bundles within English pharmaceutical discourse	Second language acquisition in specialized contexts
16	36	15.53	stance	stance and engagement in pure mathematics research articles, constructing critical stance in University essays in English literature, stance functions in the discourse	Second language acquisition in specialized contexts
17	239	15.35	corpus	corpus of published articles, the Brown corpus, corpus of published articles, corpus of scientific conference	Materials preparation
18	23	15.16	exploratory	writing titles in science: an exploratory study, a chronotropic approach to genre analysis: an exploratory study, an exploratory study of two L2 graduate students' experiences	Discourse analysis
19	23	15.16	families	word families in medical research articles, word families plus proper nouns, science-specific technical word families	Materials preparation

Table 18 shows that the most researched topics when Data 3 was compared with Data 2 (D3 vs D2) were Materials preparation (e.g. list [N=48 ;

LL=44.89; the academic word list, a nursing academic word list, a basic engineering English word list]) and Discourse analysis (e.g. calls [N=26; 24.31; NNS service telephone calls, service telephone calls, service calls]). The other topics were Needs assessment (e.g. practices [N=67; LL=17.25%; discursive practices of the academic community, reading practices of online articles, practices of academic discourse]) and Second language acquisition in specialized contexts (e.g. bundles [N= 38; LL=23.2%; use of English-language lexical bundles, four-word lexical bundles, the function of lexical bundles]). There were 6 out of 13 topics reported from comparison results of Data 3 vs Data 2 that can be found on the website of the ESP journal.

Table 19 Comparisons of Data 3

No	Topics	D3 v D1		D3 v D2	
		N	%	N	%
1.	Second language acquisition in specialized contexts	5	21.73	2	10.52
2.	Needs assessment	0	0.00	3	23.07
3.	Curriculum development and evaluation	0	0.00	0	0.00
4.	Materials preparation	4	17.39	7	36.84
5.	Discourse analysis	6	26.08	4	31.57
6.	Descriptions of specialized varieties of English	3	13.04	1	5.26
7.	Teaching and testing techniques	0	0.00	0	0.00
8.	The effectiveness of various approaches to language learning and language teaching	0	0.00	0	0.00
9.	The training or retraining of teachers for the teaching of ESP	0	0.00	0	0.00
Other Topics					
1.	Aspects of <i>ESP</i> needing development	0	0.00	0	0.00
2.	Areas into which the practice of <i>ESP</i> may be expanded	0	0.00	0	0.00

Table 19 (Continued)

No	Topics	D3 v D1		D3 v D2	
		N	%	N	%
3.	Possible means of cooperation between <i>ESP</i> programs and learners' professional or vocational interests	0	0.00	0	0.00
4.	Implications that findings from related disciplines can have for the profession of <i>ESP</i>	5	21.73	2	10.52
TOTAL		23	100%	19	100%

Table 19 above shows the comparisons done for Data 3. On the one hand, Data 3 is compared with Data 1. On the other hand, Data 3 is compared with Data 2. In the first comparison, a total of 23 keywords with log-likelihood values of not less than 15.00 were iteratively categorized according to the topics mentioned on the English for Specific Purposes (ESP) journal. The categorization of the keywords matched with four main topics on the ESP journal: (1) Discourse analysis (N=6; 26.08 %), (2) Materials preparation (N=4; 17.39%), (3) Second language acquisition in specialized contexts (N=5; 21.73%), and (4) Descriptions of specialized varieties of English (N=3, 13.04%) While there were four main keywords in this comparison, it can be seen that the most frequent type of topics in Data 3 in relation to Data 21 was Discourse analysis. Only one keyword matched with "Other Topics," namely Implications that findings from related disciplines can have for the profession of ESP (N=5, 21.73%). The comparison between Data 3 and Data 2 produced 19 keywords which can be categorized into nine categories. Five were related to the Main Topics: Materials preparation (N=7; 36.84%), Discourse analysis (N=4; 31.7%), Needs assessment (N=3, 23.07%), Second language acquisition in specialized contexts (N=2; 10.52%), Descriptions of specialized varieties of English (N=1; 5.26%). Only one keyword was related to "Other Topics," namely Implications that findings from related disciplines can have for the profession of ESP.

To sum up, the comparisons of Data 3 v. Data 1 and Data 3 v. Data 2 unveiled the topics that were commonly published among authors (e.g. Discourse analysis, second language acquisition in specialized contexts, Materials preparation, and Implications that findings disciplines can have for the profession of ESP). There were also topics such as Needs assessment that gained momentum only in the results of Data 3 vs Data 2. However, the other topics Curriculum development and evaluation, Teaching and testing techniques, the effectiveness of various approaches to language learning and language teaching, the training or retraining of teachers for the teaching of ESP and Possible means of cooperation between ESP programs and learners' professional or vocational interests were quite uncommon or probably absent in period 1 (1986-1995).

4.2 Discussion of Results

Research Question 1: What research topics characterize the abstracts of the English for Specific Purposes journal from 1986-2017?

Nine research topics characterize the English for Specific Purposes Journal from 1986-2017. They were (1) Second language acquisition in specialized contexts, (2) Needs assessment, (3) Curriculum development and evaluation, (4) Materials preparation, (5) Discourse analysis, (6) Descriptions of specialized varieties of English, (7) The effectiveness various of approaches to language learning and language teaching, (8) Possible means of cooperation between ESP programs and learners' professional or vocational interests, and (9) Implications that findings from related disciplines can have for the profession of ESP.

Among these findings needs assessment, discourse analysis, materials preparation, curriculum development and evaluation, descriptions of specialized varieties of English, and the effectiveness various of approaches to language learning and language teaching are in concord with the earlier research findings of Hyland (2001), Brunton (2009), Belcher (2009), Belcher, Johns & Paltridge (2011), and Flowerdew (2013) (see also Gollin-Kies. 2014; Dudley-Evans & John.1998). The findings are also in line with Hewings (2002) who argued that discourse analysis has dominated since its inception and continues and has dominated the topics ever since, and Hyland (2007) who posited that discourse takes a variety of different forms, but in ESP, traditionally, it involves attention to features of texts and their rhetorical purposes as a basis for pedagogical materials. The presence of research topics on needs analysis, materials preparation, and curriculum development and evaluation supports Flowerdew (2013) findings in these aspects. At the same time, with the development of global economy, the descriptions of specialized varieties of English, which is also one of the topics that was found in this research, is quite inevitable.

Aside from those mentioned above, some other findings that were not reported in earlier studies were also found such as (1) second language acquisition in specialized contexts, (2) possible means of cooperation between ESP programs and learners' professional or vocational interests, and (3) implications that findings from related disciplines can have for the profession of ESP. As newer emergent economic powers rise, the demand for specific contents also rises.

Research Question 2: What research topics in the abstract of the English for Specific Purposes Journal can be found in different time periods: 1986-1995, 1996-2005 and 2006-2017?

Period 1 (1986-1995): Data 1 vs. Data 2 and Data 1 vs. Data 3

In the first comparison, a total of five main topics on the ESP journal were found: (1) Discourse analysis (N=11; 68.75%), (2) Curriculum development and evaluation (N=2; 12.50%), (3) Second language acquisition in specialized contexts (N=1; 6.25%), (4) The training or retraining of teachers for the teaching of ESP (N=1, 6.25%), and Possible means of cooperation between ESP programs and learners' professional or vocational interests (N=1; 6.25%), in the order of decreasing LL values.

The second comparison of Data; i.e., Data 1 vs Data 3, produced eight Main Topics: Discourse analysis (N=24; 53.33), Second language acquisition in specialized contexts (N=8; 17.77), Curriculum development and evaluation (N=4; 8.88%), Materials preparation (N=2; 4.44%), Descriptions of specialized varieties of English (N=2; 4.44%), The effectiveness of various approach to language learning and language teaching (N=2; 4.44%), Teaching and testing techniques (N=1; 2.22%), and The training or retraining of teachers for the teaching of ESP (N=1; 2.22%), while

only one Other Topics, which was Possible means of cooperation between ESP programs and learners' professional or vocational interests (N=1; 2.22%).

These two findings support the findings of Belcher (2009), Belcher, Johns & Paltridge (2011), and Flowerdew (2013), and Hewings (2002). Moreover, the two analyses show that the authors who sent their papers for publication in the English for Specific Purposes Journal had three favorite topics, with the main topic Discourse analysis topping them all. The other two favorites were Second language acquisition in specialized contexts and Curriculum development and evaluation. The topics the training or retraining of teachers for the teaching of ESP, and Possible means of cooperation between ESP programs and learners' professional or vocational interests were also occasionally published during the period 1986-1995. Conversely, the topics, needs assessment, Aspects of ESP needing development, Areas into which the practice of ESP may be expanded, and Implications that findings from related disciplines can have for the profession of ESP were quite uncommon or unpopular during the earliest period of the English for Specific Purposes journal.

It is also worth mentioning that the absence of keywords relating to the four topics namely (1) materials preparation, (2) descriptions of specialized varieties of English, (3) teaching and testing techniques, and (4) the effectiveness of various approaches to language learning and language teaching when Data 1 was compared with Data 2 but eventually showed up when Data 1 was compared with Data 3, shed light on three indications. First, it indicates the presence of keywords relating to these four topics in Data 1 but in very low frequencies. Second, it shows that the frequencies of keywords relating to these four topics are quite similar in number in Data 2. Finally, it shows that the keywords relating to these four topics are quite uncommon or absent in Data 3 enhancing the log-likelihood identification of these keywords even if they have low frequencies in the node corpus. The results also suggest that there were a growing number of research publications on these topics during the period.

In brief, the comparisons Data 1 v. Data 2 and Data 1 v. Data 3 unveiled the topics that were quite popular among authors (e.g. Discourse analysis, Curriculum development and evaluation, Second language acquisition in specialized contexts and Possible means of cooperation between ESP programs), topics that The effectiveness of various approaches to language learning and language teaching, the training or retraining of teachers for the teaching of ESP and Materials preparation gained momentum, and topics Needs assessment, Aspects of ESP needing development, Areas into which the practice of ESP may be expanded, and Implications that findings from related disciplines can have for the profession of ESP that were quite uncommon or probably absent in period 1 (1986-1995).

The comparison between Data 1 and Data 3 produced 45 keywords which can be categorized into nine categories. Eight were related to the Main Topics: Discourse analysis (N=24; 53.33), Second language acquisition in specialized contexts (N=8; 17.77), Curriculum development and evaluation (N=4; 8.88%) Materials preparation (N=2; 4.44%), Descriptions of specialized varieties of English (N=2; 4.44%), The effectiveness of various approach to language learning and language teaching (N=2; 4.44%), Teaching and testing techniques (N=1; 2.22%), and The training or retraining of teachers for the teaching of ESP (N=1; 2.22%), while only one keyword was related to Other Topics, namely Possible means of cooperation between ESP programs and learners' professional or vocational interests (N=1; 2.22%).

Period 2(1996-2005): Data 2 vs. Data 1 and Data 2 vs. Data 3

On the one hand, Data 2 vs. Data 1 produced a total of four Main Topics on the ESP journal: (1) Discourse analysis (N=2; 33.33%), (2) Curriculum development and evaluation (N= 1; 16.66%), (3) Second language acquisition in specialized contexts (N=1; 16.66%), and (4) Materials preparation (N=1, 16.66%), (5) Descriptions of specialized varieties of English. Other Topics were not found. On the other hand, the comparison between Data 2 and Data 3 yielded five Main Topics: (1) Discourse analysis (N=2; 25%), (2) Second language acquisition in specialized contexts (N=1; 12.5%), (3) Needs assessment (4) Curriculum development and evaluation (N=2; 25.5%), (5) Descriptions of specialized varieties of English (N=2; 25.5). There were also no keywords related to Other Topics of ESP journal from 1996-2005. These findings are similar to those found by Master (2005), Hewings (2002), and Hyland (2001). It was noted further that the frequency number of research topics in two comparison results were quite similar with a low frequency number of the five topics. The frequency numbers of these research topics in Data 2 were lower than the results of Data 1. The topic Needs Assessment yielded only few topics when Data 2 was compared with Data 1, which indicates fewer publications in this topic. Based on a short span of time between Data 1 and Data 2, it can be argued that the published papers of the topic Needs Assessment were probably almost equal in the two periods, so they were not found in the keywords list. At the same time, the topic Materials preparation also only appeared in a low numbers in Data 2 vs Data 3 comparison, which was similar with the situation of the topic Needs Assessment. Seven others were quite unpopular topics in Data 2. These were Teaching and testing techniques, The effectiveness of various approaches to language, learning and language teaching, The training or retraining of teachers for the teaching of ESP, Aspects of ESP needing development, Areas into which the practice of ESP may be expanded, Possible means of cooperation between ESP programs and learners' professional or vocational interests, and Implications that findings from related disciplines can have for the profession of ESP.

The low frequencies of these topics were probably due to the focus on genre and genre analysis. Genre has become an important notion in the area of English for specific purpose and has made a significant contribution to ESP research (Bazerman, Bonini & Figueiredo. 2009; Bawarshi & Reiff. 2010; Bax. 2011). Another reason was the advent of corpus-based genre analysis (Bondi. 2001; Connor, Precht & Upton. 2002; Gledhill. 2000; Henry & Roseberry. 2001; Marco. 2000; Thompson. 2000; Upton. 2002; Upton & Connor. 2001), which shifted the focus to this area.

Period 3(2006-2017): Data 3 vs. Data 1 and Data 3 vs. Data 2

The first comparison generated five Main Topics and one Other Topics on the ESP journal: (1) Discourse analysis (N=6; 26.08 %), (2) Materials preparation (N=4; 17.39%), (3) Second language acquisition in specialized contexts (N=5; 21.73%), (4) Descriptions of specialized varieties of English (N=3, 13.04%), and “Other Topics, Implications that findings from related disciplines can have for the profession of ESP (N=5, 21.73%). While there were four main keywords in this comparison, it can be seen that the most frequent type of topics in Data 3 in relation to Data 1 was Discourse analysis.

The comparison between Data 3 and Data 2 yielded five Main Topics and one Other Topics: Materials preparation (N=7; 36.84%), Discourse analysis (N=4; 31.7%), Needs assessment (N=3, 23.07%), Second language acquisition in specialized contexts (N=2; 10.52%), Descriptions of specialized varieties of English (N=1; 5.26%), and

Only, Implications that findings from related disciplines can have for the profession of ESP.

The two analyses show that the authors who send their papers for publication in the English for Specific Purposes Journal were more interested in Second language acquisition in specialized contexts and Discourse analysis as shown in the results of Data 3 vs Data 1. The topic Materials preparation was most interesting in the results of Data 3 vs Data 2 since most published papers are examining or at least discussing material preparation in ESP. Conversely, the topics Curriculum development and evaluation, Teaching and testing techniques, the effectiveness of various approaches to language learning and language teaching, the training or retraining of teachers for the teaching of ESP and Possible means of cooperation between ESP programs and learners' professional or vocational interests were quite uncommon or unpopular during the last period of the English for Specific journal. These findings are in concord with the results found by Gollin-Kies (2014), Belcher et al. (2012), Pradhan (2012), Master (2005), Hewings (2002), and Hyland (2001)

It should be worth mentioning that Needs assessment was not found when Data 3 was compared with Data 1 but eventually showed up when compared with Data 2, which indicates the presence of these topics in Data 3 but in lesser number, had almost similar number in Data 1, and quite uncommon or unpopular in Data 2. The result also suggests that there was a growing number or declining of research publications on some topics during the period. For example, needs assessment and Materials preparation had a growing number. However, the topics Second language acquisition in specialized contexts, Discourse analysis, Descriptions of specialized varieties of English and Implications that findings from related disciplines can have for the profession of ESP had a declining number.

Research Question 3: What topic trends in the abstracts of the English for Specific Purposes Journal can be found in different time periods: 1986-1995, 1996-2005 and 2006-2017?

According to above three comparisons, the current study attempted to examine research topics trends from 1986-2017. Three sample periods produced keywords indicating the research topics into three periods: 1986-1995, 1996-2005, and 2006-2017. According to this current study's results, there are four research topics trends exhibited by the journal papers: (1) the continuing research topic trends, (2) decreasing significance or it appeared at the onset of the journal, but interests among researchers faded or the number of research studies on these topics was inversely proportional to the age of the journal-the decreased research topics trends, (3) intermittently popular or one-time period trend (4) undermined or least popular among ESP researcher-the lacks interests research topics trends.

First, the topics that can be categorized under continuing research topic trends (continuously significant topics) are Second language acquisition in specialized contexts, Materials preparation, Discourse analysis, and Descriptions of specialized varieties of English. These research trends are similar with past trends found in Hyland (2001), Brunton (2009), Belcher (2009) Belcher, Johns & Paltridge (2011), and Flowerdew (2013). The second category, decreasing significance, includes Curriculum development and evaluation (Hewings. 2002), Teaching and testing techniques, the effectiveness of various approaches to language learning and language teaching (Johns & Dudley-Evans. 1991: 303) the training or retraining of teachers for the teaching of ESP, and Possible means of cooperation between ESP programs and learners' professional or vocational interests. Third, there were one-time period topics, which

were seen only in one time period such as Needs assessment and Implications that findings from related disciplines can have for the profession of ESP. These topics were also earlier reported in Hewings (2002) and Hyland (2007).

In brief, differences and similarities were found between past and current trends studies, but crossover between studies has also been found. There were two topics, Aspects of ESP needing development, and Areas into which the practice of ESP may be expanded, which were quite undermined in three periods. In other words, there were very little research publications under these topics and they could be examined further in future research studies



CHAPTER 5

CONCLUSION

This study was conducted in partial fulfillment of the requirements of a graduate study that specializes in English Professional Communication. The main objective of this research study is to examine the topics in the ESP journal in three-time periods [Data 1 (1986-1995), Data 2 (1996-2005), Data 3 (2006-2017)], and throughout all the periods [Data 4 (1986-2017)], and by comparing them with two different benchmarks. The findings of the comparisons were further examined against the topics presented on the ESP Journal website. This chapter presents the conclusion, implications, and limitations and future research directions generated from the study.

5.1 Conclusion

As shown in Chapter 4, the 628 abstracts collected from 1986 to 2017 (31 years) were examined for keywords using two main comparisons: entire data vs the BNC, and period to period comparisons. On the one hand, from the comparison of combined data with the BNC, it was found that 9 out of the 13 topics listed on the English for Specific Purposes Journal website were the object of research among ESP researchers. In decreasing order of popularity, research topics investigated from 1985 to 2017 include (1) Discourse analysis (N=31; 34%), (2) Second language acquisition in specialized contexts (N=13; 14%), (3) Materials preparation (N=10; 11%), (4) Needs assessment (N=8; 8.8%), (5) Approaches to language learning and language teaching (N=8; 8.8%), (6) Curriculum development and evaluation (N=7; 7.7%), (7) Implications that findings from related disciplines can have for the profession of ESP (N=7; 7.7%), (8) Descriptions of specialized varieties of English (N=4; 4.4%), (9) Possible means of cooperation between ESP programs and learners' professional or vocational interests (N=2; 2.2%).

On the other hand, the results of the three periods to period comparisons (one period against another period) present four different research trends in the field of ESP as contained in the *English for Specific Purposes Journal* (ESP Journal). First, it was evident that 2 out of 13 topics (*Materials preparation* and *Discourse analysis*) on the *ESP Journal* have been continuously investigated throughout the existence of the journal. Second, 4 out of 13 topics (*Curriculum development and evaluation*, *Teaching and testing techniques*, *The training or retraining of teachers for the teaching of ESP*, and *Possible means of cooperation between ESP programs and learners' professional or vocational interests*) were popular at the onset or two sets of the journal, but interests among researchers faded or the number of research studies on these topics was inversely proportional to the age of the journal. Third, 4 out of 13 topics were intermittently popular such as *Second language acquisition in specialized contexts*, *Descriptions of specialized varieties of English*, *Needs assessment*, and *Implications that finding from related disciplines can have for the profession of ESP*.

5.2 Implications

Firstly, to ESP scholars, the current study provides useful data to help them to design, plan and align their research studies to ongoing trends or to those undermined. Secondly, to educators, understanding topic trends enable curriculum planners to incorporate burning issues, current ESP theories, prevailing ESP practices, and state-of-the-art ESP innovations founded by thorough research studies given the high-ranking level of the journal for pedagogical purposes. This will provide the benefit of harnessing the research outputs while they are still relevant to social contexts instead of waiting for textbooks, which take longer to publish, and the content may be outdated before it reaches the end users. Thirdly, to ESP journal publishers, it is a helpful assistance for them to update their research topics in conjunction with the interests of researchers or to motivate undermined or less popular research topics in the field of ESP.

5.3 Limitations and future research directions

One main limitation of this research is the reliance on one kind of journal in the field of English for Specific Purposes as the source of data. In reality, there are a number of journal publishers in this field, and researchers in these other journals may have different interests. Other factors should be considered. For instance, the English for Specific Purposes Journal is the most popular, the largest, has the highest impact factor, and has low acceptance rate, so it can be assumed that researchers in this journal are professional researchers. Neophyte researchers aiming to publish in the field of ESP might have published in topics different from the popular topics on the ESP Journal. Having said this, future investigations on ESP research topics should also include the other journals through comparative studies or surveys.

Another limitation is the focus on abstracts. While an abstract is the summary of a research article, in some cases, abstracts are vague and may not include all the necessary details needed to pinpoint the topic of that research paper. Otherwise, there still exists one limitation of the data collection process; the keywords of abstracts were not examined because they were not available for downloading.

Finally, it also interesting to examine topics in the journal abstracts in comparison with a survey of the topics of interests of a number of ESP lecturers, researchers, and graduate school students to check how the topics contained in the abstracts relate to the thoughts of these people interested in the field of ESP. While the comparisons may somewhat reflect trends, conducting a more rigorous analysis that takes all the research studies done in different periods of time is more promising since it provides a bigger picture of the entire field.

While most research studies examining trends in the field of English for Specific Purposes either conducted surveys or did quick scanning of the research titles and objectives to make sense of the trends and mostly considered shorter periods of time since the process is tedious, I hope that this corpus-based diachronic research investigation shed some light on how topics in research abstracts can be examined to shed light on trends in journal publications.

BIBLIOGRAPHY

- Altbach, P.G. (1980) "The Crisis of the Professoriate." **Annals of the American Academy of Political and Social Science**. 448 page 1-14.
- _____. (1996) "The international academic profession" **Princeton, NJ : Carnegie Foundation for the Advancement of Teaching**. page 1-35
- _____. (1997) "An international academic crisis?" **The American Professoriate in Comparative Perspective. Daedalus**. 126 (4) page 315-338.
- Al-Rodhan, N. R., & Stoudmann, G. (2006) "Definitions of globalization: A comprehensive overview and a proposed definition" **Program on the Geopolitical Implications of Globalization and Transnational Security**. 6 page 1-21.
- Altbach, P. G., & Knight, J. (2007) "The internationalization of higher education: Motivations and realities" **Journal of Studies in International Education**. 11 (3-4) page 290-305.
- Anthony, L. (2013) "A critical look at software tools in corpus linguistics" **Linguistic Research**. 30 (2) page 141-161.
- _____. (2017) **AntConc (Version 3.5.0) (computer software)**. Tokyo : Washed University. [Online] Available : <https://lanurenceanthony.net/software/antconc> (5 May 2017)
- Appadurai, A. (1990) "Disjuncture and difference in the global cultural economy" **Theory, Culture & Society**. 7 (2-3) page 295-310.
- Ashton, D. N., & Green, F. (1996) **Education, Training and the Global Economy Cheltenham: Edward Elgar**. page 4-100.
- Aston, G., & Burnard, L. (1998) **The BNC handbook : exploring the British National Corpus with SARA**. Capstone.
- Aston, G. (2001) "Learning with corpora: an overview" **Learning with Corpora**. page 7-45.
- Aston, G., Bernardini, S., & Stewart, D. (Eds.). (2004) **"Corpora and language learners"** John Benjamins Publishing.
- Baker, P. (2010) "Corpus methods in linguistics" **Research Methods in Linguistics**. page 93.

BIBLIOGRAPHY (CONTINUED)

- Barber, C. L. (1988) "Some measurable characteristics of modern scientific prose"
In J. M. Swales (ed.), *Episodes in ESP : A Source and Reference. **Book for the Development of English for Science and Technology.*** New York : Prentice Hall. page 3 – 16.
- Barnbrook, G. (1996) "Language and computers: a practical introduction to the computer analysis of language" **Edinburgh Textbooks in Empirical Linguistics.**
- Bawarshi, A. (2003) "Genre and the invention of the writer: reconsidering the place of invention in composition" **University Press of Colorado.**
- Baron, A., Rayson, P., & Archer, D. (2009) "Word frequency and key word statistics in corpus linguistics" **Anglistik.** 20 (1) page 41-67.
- Basturkmen, H. (2012) "Developing courses in English for Specific Purposes" **The Electronic Journal for English as a Second Language.** 16 (1).
- Bawarshi, A. S., & Reiff, M. J. (2010) **An Introduction to History, Theory, Research, and Pedagogy.** Washington : Parlor press.
- Bazerman, C., Bonini, A., & Figueiredo, D. (2009) "Genre in a Changing World Editors' Introduction" **Genre in A Changing World.** Fort Collins.CO : WAC Clearinghouse.
- Belcher, D. (2004) "Trends in teaching English for specific purposes" **Annual Review of Applied Linguistics.** 24 page 165–186.
- Belcher, D. (2006) *En imagined futures in worlds of work, stu glish for specific purposes: Teaching to perceived needs and dy and everyday life.* **TESOL Quarterly.** 40 (1) page 133-156.
- Betts M, Lansley P. (1995) "International Journal of Project Management : A review of the first ten years" **Int J Project Manage.** 13 (4) page 207–17.
- Belcher, D.D., Johns, A.M., & Paltridge, B. (Eds.). (2011) **New Directions in English for Specific Purposes Research.** Ann arbor, MI : University of Michigan Press. page 94-117.

BIBLIOGRAPHY (CONTINUED)

- Benson, P., Chik, A., Gao, X., Huang, J., & Wang, W. (2009) "Qualitative research in language teaching and learning journals, 1997–2006" **The Modern Language Journal**. 93 (1) page 79-90.
- Bhatia, V. K. (2014) **Analysing genre: Language use in professional settings**. Routledge.
- Braine, G. (1989) "Writing in science and technology: An analysis of assignments from ten undergraduate courses" **English for Specific Purposes**. (8) page 3 – 15.
- Braun, V. & Clarke, V. (2006) "Using thematic analysis in psychology" **Qualitative Research in Psychology**. 3 page 77-101.
- Bondi, M. (2001) "Reflexivity across genres" **Small Corpus Studies and ELT : Theory and Practice**. (5) page 135.
- Bookman, M. (2007) "Medical tourism in developing countries" **Springer**. page 76-77.
- Boulton, A., Carter-Thomas, S., & Rowley-Jolivet, E. (2012) **Corpus-informed research and learning in ESP: issues and applications**.
- Boulton, A. (2016) "Integrating corpus tools and techniques in ESP courses" **ASP. la revue du GERAS**. (69) page 113-137.
- Bredillet, C. (2006) "The future of project management: mapping the dynamics of project management field in action" In *Global Project Management Handbook: Planning, Organizing and Controlling International Projects, Second Edition: Planning, Organizing, and Controlling International Projects*. **McGraw-Hill, Inc.**
- Brunton, M. (2009) "An account of ESP –with possible future directions" **English for Specific Purposes**. 3 (24) page 1-15.
- Bresser Pereira, L. C. (2010) "Globalization and competition" **Cambridge Books**.
- Bucchi, M., & Mazzolini, R. G. (2003) "Big science, little news: science coverage in the Italian daily press, 1946-1997" **Public Understanding of Science**. 12 (1) page 7-24.
- Burnard, L. (2009) **British Nation Corpus (computer software)**. [Online] Available : <https://www.natcorp.ox.ac.uk/corpus.xml.pdf> (10 April 2017)
- Carreon, J. R., Todd, R. W., & Knox, J. (2013) "Medical tourism communication of a Thai private hospital website" **Journal of Applied Linguistics and Professional Practice**. 8 (2) page 165-185.

BIBLIOGRAPHY (CONTINUED)

- Cargill, M., O'Connor, P., & Li, Y. (2012) "Educating Chinese scientists to write for international journals: Addressing the divide between science and technology education and English language teaching" **English for Specific Purposes**. 31 (1) page 60-69.
- Castro, M., Colmenar, A., & Martin, S. (2010) "Trends of use of technology in engineering education" **In Education Engineering (EDUCON), 2010 IEEE**. page 787-796.
- Clarke, V. & Braun, V. (2013) "**Teaching thematic analysis: Overcoming challenges and developing strategies for effective learning**" *The Psychologist*. 26 (2) page 120-123.
- Crawford, L., Pollack, J., & England, D. (2006) "Uncovering the trends in project management: Journal emphases over the last 10 years" **International Journal of Project Management**. 24 (2) page 175-184.
- Cambridge Dictionary, (2017) [Online] Available : <https://dictionary.cambridge.org/dictionary/english/trend> pdf (20 March 2017)
- Chrisman, *et al.*, (2008) "Management journals as venues for publication of family business research" **Entrepreneurship Theory and Practice**. 32 (5) page 927-934.
- Chang, Y. H., Chang, C. Y., & Tseng, Y. H. (2010) "Trends of science education research: An automatic content analysis" **Journal of Science Education and Technology**. 19 (4) page 315-331.
- Cohen, E. C. E. (2008) "Medical tourism in Thailand" **AU-GSB e-journal**. page 1 (1).
- Connor, U., & Upton, T. (Eds.). (2005) "Discourse in the professions: Perspectives from corpus linguistics" **Amsterdam: John Benjamins**. page 1-8.
- Crystal, D. (2013) A global language. **In English in the World**. Routledge. page 163-208.
- Dudley-Evans, T., & St John, M. J. (1998) **Developments in English for specific purposes : A Multi-disciplinary Approach** Cambridge University press.
- England, P., & Edin, K. (2007) "Unmarried Couples with Children" **Russell Sage Foundation**.
- Erduran, S., Ozdem, Y., & Park, J. Y. (2015) "Research trends on argumentation in science education: A journal content analysis from 1998-2014" **International Journal of STEM Education**. 2 (1) page 5.

BIBLIOGRAPHY (CONTINUED)

- Flowerdew, J. (1993) "Concordancing as a tool in course design" **System**. 21 (2) page 231-244.
- Flowerdew, L. (2004) "The argument for using English specialized corpora to understand academic and professional language" **Discourse in the Professions: Perspectives from Corpus Linguistic**. page 11-33.
- _____. (2005) "An integration of corpus –based and genre-based approaches to text analysis in EAP/ESP: counting criticisms against corpus –based methodologies" **English for Specific Purposes**. 24 (3) page 321-332.
- _____. (2013) "Needs analysis and curriculum development in ESP" **The handbook of English for specific purposes**. page 325-346.
- Franzosi, R. (2004) *From Words to Numbers : Narrative, Data, and Social Science*. **Cambridge, UK: Cambridge Univ. Press**.
- Gledhill, Christine. (2000) "Rethinking genre. In : Reinventing film studies" Ed. by Christine Gledhill and Linda Williams. **London: Arnold**. page 221-243.
- Gao, Y., Li, L., & Lü, J. (2001) "Trends in research methods in applied linguistics: China and the West" **English for Specific Purposes**. 20 (1) page 1-14.
- Glanzel, W. (2002) "Coauthor ship Patterns and Trends in the Sciences (1980-1998): A Bibliometric Study with Implications for Database Indexing and Search Strategies" **Library Trends**. 50 (3) page 461-73.
- Gil-Pérez, D. (1996) "New trends in science education" **International Journal of Science Education**. 18 (8) page 889-901.
- George, A. L., & Bennett, A. (2005) **Case Studies and Theory Development in the Social Sciences**. Mit Press. page 1-48.
- Granger, S. (2012) "Learner corpora" **The Encyclopedia of Applied Linguistics**.
- Gecikli, M. (2013) "Trends In Esp Research Tradition: A Comprehensive Review of Research Designs in Ras Published Between 2008-2013" **International Journal of Humanities and Social Science**. 3 page 15.
- Gollin-Kies, S. (2014) "Methods reported in ESP research articles: A comparative survey of two leading journals" **English for Specific Purposes**. 36 page 27-34.
- Gupta, A. S. (2008) "Medical tourism in India: winners and losers" **Indian Journal of Medical Ethics**. 5 (1) page 4-5.

BIBLIOGRAPHY (CONTINUED)

- Gunasekare, U. L. T. P. (2015) "Mixed Research Method as the Third Research Paradigm: A Literature Review" **International Journal of Science and Research**. page 361-365.
- Henry, A., & Roseberry, R. (2001) "Using a small corpus to obtain data for teaching a genre" In M. Ghadessy, et al. (Eds.), *Small corpus studies and ELT*. **Amsterdam: John Benjamins**. page 93–133.
- Hewings, M. (2002) "A history of ESP though English for Specific Purposes" **ESP World**. 3 (1).
- Hutchinson, T., & Waters, A. (1987) **English for specific purposes**. English : Cambridge University Press.
- Hunston, S. (2002) **Corpora in applied linguistics**. Ernst Klett Sprach
- Hyland, K. (2007) "English for specific purposes" In *International handbook of English language teaching*. **Springer, Boston, MA**. page 391-402.
- Javadi, M., & Zarea, K. (2016) "Understanding thematic analysis and its pitfall" **Journal of Client Care**. 1 (1) page 33-39.
- Jenkins, J. (2014) **English as a Lingua Franca in the International University. The Politics of Academic English Language Policy**. Abingdon, England : Routledge.
- Johns, A. M., & Dudley-Evans, Tony. (1991) "English for specific purposes: International in scope, specific in purpose" **TESOL quarterly**. 25 (2) page 297-314.
- Kloppenber T, Opfer WA. (2002) "The current state of project management research: trends, interpretations and predictions" **Project Manage J**. 33 (2) page 5–19.
- Krippendorff, K. (1980) **Content Analysis: An Introduction to Its Methodology**. Newbury Park, CA. page 29-52
- Kilgarriff, A. (1997) "Using word frequency lists to measure corpus homogeneity and similarity between corpora" **In Proceedings of ACL-SIGDAT Workshop on Very Large Corpora**. page 231-245.
- Lawson, F. R. (1982) "Trends in business tourism management" **Tourism management**. 3 (4) page 298-302.

BIBLIOGRAPHY (CONTINUED)

- Leech, G., Garside, G. Leech & A. McEnery. (1997) **Corpus annotation Linguistic Information from Computer Text Corpora**. London : Longman. page 1-18.
- Lee, M. H., Wu, Y. T., & Tsai, C. C. (2009) “Research trends in science education from 2003 to 2007: A content analysis of publications in selected journals” **International Journal of Science Education**. 31 (15) page 1999-2020.
- Leung, *et. al.*, (2014) “Current state of China tourism research” **Current Issues in Tourism**. 17 (8) page 679-704.
- Lin, T. C., Lin, T. J., & Tsai, C. C. (2014) “Research trends in science education from 2008 to 2012: A systematic content analysis of publications in selected journals. **International Journal of Science Education**. 36 (8) page 1346-1372.
- Lüdeling, A., & Kytö, M. (2008) **Corpus Linguistics : An International Handbook**. Walter de Gruyter GmbH.
- Mackay, R., Mountford, A. (1978) **English for Specific Purposes**. Longman, Harlow.
- Master, P. (2005) Research in English for specific purposes. **Handbook of Research in Second Language Teaching and Learning**. page 99-116.
- McDonald, J. B., & Ransom, M. (2008) “The generalized beta distribution as a model for the distribution of income: estimation of related measures of inequality” **In Modeling Income Distributions and Lorenz Curves**. Springer, New York, NY. page 147-166.
- Martin, S., Diaz, G., Sancristobal, E., Gil, R., Castro, M., & Peire, J. (2011) New technology trends in education: Seven years of forecasts and convergence. **Computers & Education**. 57 (3) page 1893-1906.
- Merriam-Webster dictionary. (2017) [Online] Available : <https://www.merriam-wabster.com/dictionary>. (10 June 2017)
- McEnery, T., and Wilson, A. (1996) **Corpus Linguistics**. Edinburgh University Press, Edinburgh. page 448-463
- McEnery, T., & Wilson, A. (2003) “Corpus linguistics” **The Oxford Handbook of Computational Linguistics**. page 448-463.
- McEnery, T., Xiao, R., & Tono, Y. (2006) “Corpus-based language studies: An advanced resource book” **Taylor & Francis**.

BIBLIOGRAPHY (CONTINUED)

- Owen, C. (1992) "Changing trends in business tourism" **Tourism Management**. 13 (2) page 224-226.
- Parkinson, J. (2013) English for science and technology. **The handbook of English for specific Purposes**. page 155-173.
- Paltridge, B., & S. Starfield. (2011) **Research in English for specific Purposes**. In E. Hinkel (Ed.), Handbook of research in second language teaching and learning. New York, NY : Routledge. page 196-121.
- Paltridge, & Starfield (Eds.). (2012) The handbook of English for specific purposes. **John Wiley & Sons**.
- Paltridge, B. (2013) **Genre and English for specific purposes**. In B. Paltridge & S. Starfeld (Eds.), The handbook of English for specific purposes. Malden, MA: Blackwell. page 347-366.
- Paltridge, B. (2014) "Genre and second language academic writing" **Language Teaching**. 47 page 303-318.
- Pellechia, Marianne G. (1997) "Trends in science coverage: a content analysis of three US Public" **Understanding of Science**. 6 (1) page 49-68.
- Pennycook, A. (2017) "The cultural politics of English as an international language" **Taylor & Francis**.
- Ravelli, L., Paltridge, B., & Starfeld, S. (Eds.). (2014) "Doctoral writing in the creative and performing arts" **Faringdon, England : Libri**.
- Phillipson, R. (2003) **English-only Europe? Challenging language policy**. London : Routledge. page 1-4
- Pérez-Paredes, P. (2014) Reseña" Corpus-Informed Research and Learning in ESP. Issues and applications" de Alex Boulton, Shirley Carter-Thomasy Elizabeth Rowley-Jolivet. **Ibérica**. (27) page 221-224.
- Vocabulary. (2018) [Online] Available : <https://www.vocabulary.com/dictionary/Trend> pdf (5 May 2018)
- Rayson, P., & Garside, R. (2000) "Comparing corpora using frequency profiling" In Proceedings of the Workshop on Comparing Corpora. **Association for Computational Linguistics**. page 1-6.

BIBLIOGRAPHY (CONTINUED)

- Rayson P., Berridge D. and Francis B. (2004) "Extending the Cochran rule for the comparison of word frequencies between corpora" **In Volume II of Purnelle G. Fairon C., Dister A. (eds.) Le poids des mots: Proceedings of the 7th International Conference on Statistical analysis of textual data, Louvain-la-Neuve, Belgium, March 10-12, 2004, Presses universitaires de Louvain.** page 926-936. ISBN 2-930344-50-4.
- Radu, I. (2014) "Augmented reality in education: a meta-review and cross-media analysis" **Personal and Ubiquitous Computing.** 18(6) page 1533-1543.
- Sa-ngiamwibool, A. (2014) "Recent Trends in Asian ESP" **In International Conference on Education and Language.**
- Shih, M., Feng, J., & Tsai, C. C. (2008) "Research and trends in the field of e-learning from 2001 to 2005 : A content analysis of cognitive studies in selected journals" **Computers & Education.** 51 (2) page 955-967.
- Sinclair, J. (1991) **Corpus, concordance, collocation.** American: Oxford University Press.
- _____. (2005) "Corpus and text-basic principles" **Developing linguistic corpora: A guide to good practice.** page 1-16.
- Small, M. L. (2011) "How to conduct a mixed methods study: Recent trends in a rapidly growing literature" **Annual review of sociology.** page 37.
- Stubbs, M. (1996) **Text and corpus analysis: Computer-assisted studies of language and Culture.** Oxford: Blackwell. page 158.
- Steger, M. B. (2017) **Globalization: A very short introduction.** Oxford University Press.
- Swales, J. (2004) **Research genres: Exploration and applications.** Cambridge, England: Cambridge University Press. page 1-16
- Themistocleous G, Wearne SH. (2000) "Project management topic coverage in journals" **Int J Project Manage.** 18 (1) page 7–11.
- Teddle, C., & Tashakkori, A. (2010) "Overview of contemporary issues in mixed methods research" **Handbook of mixed methods in social.** Page 1-41

BIBLIOGRAPHY (CONTINUED)

- Tsai, Chin-Chung, and Meichun Lydia Wen. (2005) "Research and trends in science education from 1998 to 2002: A content analysis of publication in selected journals" **International journal of science education**. 27 (1) page 3-14.
- Tsai, C.-C., & Wen, L.M.C. (2005) "Research and trends in science education from 1998 to 2002: A content analysis of publication in selected journals" **International Journal of Science Education, 27, 3–14. newspapers., Public Understanding of Science**. 6 (1) page 49-68.
- White, R. (1997) "Trends in research in science education" **Res SciEduc**. 27 (2) page 215–221.
- White, D., & Fortune, J. (2002) "Current practice in project management: An empirical study" **International Journal of Project Management**. 20 (1) page 11.
- Whittaker, A. (2008) "Pleasure and pain: medical travel in Asia" **Global Public Health**. 3 (3) page 271-.290.
- Warschauer, M., & Healey, D. (1998) "Computers and language learning: An overview" **Language Teaching**. 31 (2) page 57-71.
- Wongkit, M., & McKercher, B. (2013) "A typology of medical tourists: A case study of Thailand" **Tourism Management**. 38 page 14.
- Zobel AM, Wearne, S. H. (2000) "Project management topic coverage in recent conferences" **Project Manage J**. 31 (2) page 32–7.



APPENDICES

APPENDIX 1

The Keywords List of Data 1

No	f	LL	Keywords (D1vs D2)	No	f	LL	Keywords (D1vs D2)
1	18	35.36	rp	9	15	19.03	assistants
2	16	31.43	cr	10	54	18.74	scientific
3	16	31.43	notetaking	11	12	17.46	lsp
4	40	26.6	design	12	8	15.71	approximators
5	35	24.89	problems	13	8	15.71	shields
6	11	21.61	vocational	14	8	15.71	treatment
7	22	19.76	verbs	15	23	15.61	est
8	10	19.64	inanimate	16	25	15.12	technology

No	f	LL	Keywords (D1vs D3)	No	f	LL	Keywords (D1vs D3)
1	23	61.46	est	24	15	20.63	assistants
2	18	48.1	rp	25	30	19.62	problem
3	54	42.76	scientific	26	11	19.45	vocational
4	16	42.75	cr	27	95	19.33	discourse
5	16	42.75	notetaking	28	24	18.86	american
6	25	40	technology	29	13	18.62	politeness
7	12	32.06	interlanguage	30	15	18.61	subjects
8	22	31	verbs	31	78	18.61	teaching
9	52	30.65	skills	32	9	18.15	good
10	35	28.44	problems	33	44	17.5	reading
11	30	27.63	type	34	17	17.37	described
12	40	27.49	design	35	17	17.37	hedges
13	10	26.72	inanimate	36	17	17.37	processes
14	14	26.57	tests	37	12	16.51	lsp
15	24	24.09	curriculum	38	23	16.21	section
16	14	23.39	tense	39	6	16.03	conjunct
17	39	23.2	text	40	6	16.03	hedged
18	12	21.8	difficulty	41	6	16.03	mentalistic
19	30	21.65	esl	42	6	16.03	resumes
20	8	21.37	schema	43	8	15.7	approximators
21	8	21.37	shields	44	8	15.7	system
22	36	20.8	materials	45	89	15.43	esp
23	59	20.69	course				

APPENDIX 2

The Keywords List of Data 2

No	f	LL	Keywords (D2 vs D1)	No	f	LL	Keywords (D2 vs D3)
1	89	35.89	corpus	1	9	17.73	arabic
2	21	19.71	corpora	2	9	17.73	est
3	185	17.95	academic	3	84	16.9	course
4	18	16.9	workplace	4	17	16.79	metatext
5	17	15.96	mail	5	8	15.76	ac
6	16	15.02	interpersonal	6	8	15.76	conditionals
				7	8	15.76	hospitality
				8	8	15.76	wst

APPENDIX 3

The Keywords List of Data 3

No	f	LL	Keywords (D3 vs D1)	No	f	LL	Keywords D3 vs D2
1	115	85.22	corpus	1	48	44.89	list
2	95	45.91	word	2	115	39.65	word
3	563	43.87	disciplinary	3	74	25.38	engineering
4	264	40.26	english	4	95	25.2	disciplinary
5	214	37.25	genre	5	26	24.31	calls
6	51	33.76	business	6	96	22.53	professional
7	42	31.14	corpora	7	22	20.57	online
8	52	25.64	workplace	8	29	20.32	coverage
9	52	24.5	across	9	67	17.25	practices
10	38	23.2	bundles	10	25	16.87	mathematics
11	48	23.2	discursive	11	48	16.74	presentations
12	316	22.14	list	12	563	16.03	english
13	36	21.98	academic	13	17	15.89	awl
14	34	20.76	stance	14	17	15.89	engineers
15	80	18.84	challenges	15	88	15.54	lexical
16	29	17.7	disciplines	16	36	15.53	stance
17	29	17.7	coverage	17	239	15.35	corpus
18	28	17.09	interpersonal	18	23	15.16	exploratory
19	161	16.95	management	19	23	15.16	families
20	424	16.48	findings				
21	27	16.48	research				
22	74	16.22	sub				
23	25	15.26	critical				

APPENDIX 4

The Keywords List of Data 4

No	Keywords Data 4	f	LL	No	Keywords Data 4	f	LL
1	english	920	4777.09	47	graduate	93	611.74
2	esp	332	4457.55	48	university	200	592.70
3	language	543	4264.30	49	implications	129	587.63
4	genre	407	4188.63	50	vocabulary	92	585.58
5	academic	562	4054.62	51	speakers	104	573.33
6	corpus	339	3240.25	52	tasks	86	552.94
7	writing	550	3046.59	53	medical	154	543.64
8	discourse	350	2701.34	54	scientific	128	518.41
9	study	582	2559.40	55	content	129	516.49
10	analysis	471	2469.77	56	reading	155	507.75
11	students	753	2140.52	57	approach	180	506.29
12	research	730	2117.67	58	international	157	501.99
13	writers	160	2000.34	59	written	165	490.68
14	rhetorical	171	1647.74	60	instruction	89	455.80
15	results	245	1617.19	61	courses	130	451.32
16	paper	381	1559.06	62	text	121	437.27
17	findings	243	1542.33	63	context	129	432.52
18	texts	216	1473.82	64	materials	111	388.95
19	teaching	302	1463.42	65	engineering	100	388.55
20	skills	153	1384.14	66	professional	129	373.76
21	genres	129	1350.59	67	patterns	102	370.43
22	knowledge	134	1235.37	68	practices	92	358.69
23	cap	187	1215.21	69	native	148	344.16
24	data	195	1198.70	70	discussion	108	329.06
25	linguistic	153	1148.64	71	teachers	128	305.53
26	based	312	1108.13	72	word	136	281.71
27	communication	213	1048.23	73	course	216	270.04
28	articles	280	1037.43	74	studies	116	269.17
29	learners	126	1011.79	75	reports	154	250.40
30	pedagogical	92	955.24	76	using	137	224.47
31	lexical	124	893.00	77	role	118	221.92
32	strategies	150	868.13	78	field	107	215.32
33	specific	220	840.63	79	case	181	202.28
34	article	277	838.57	80	design	88	172.06
35	communicative	99	825.24	81	legal	87	167.39
36	disciplines	117	819.70	82	process	112	161.32
37	disciplinary	115	810.92	83	words	106	136.06
38	business	324	799.05	84	level	112	133.80
39	features	189	763.64	85	present	103	119.48
40	learning	192	758.70	86	show	103	112.75
41	used	272	709.15	87	terms	95	90.86
42	science	187	682.46	88	education	94	89.31
43	structure	156	673.54	89	information	110	73.85
44	student	164	658.63	90	development	89	56.03
45	use	375	657.35	91	found	108	44.76
46	purposes	150	651.92	92	group	97	41.25

APPENDIX 5

The Examples Concordance Analysis of Data 4

No	f	LL	Keywords	Examples	Topics from ESP journal
1	english	920	4777.09	business English, engineering English, legal English,	Descriptions of specialized varieties of English
2	esp	332	4457.55	ESP course developers, ESP courses evaluation, an ESP course design	Curriculum development and evaluation
3	language	543	4264.30	ITA second language acquisition, definable skills in English language ,disciplinary (legal) culture and language	Second language acquisition in specialized contexts
4	genre	407	4188.63	academic discourse, academic writing genre, an academic speech genre	Discourse analysis
5	academic	562	4054.62	produce effective academic writing, learning and teaching of academic writing, Recurrent word combinations in academic writing	The effectiveness of various approaches to language learning and language teaching
6	corpus	339	3240.25	expert corpus, John Swales Conference Corpus, British Academic Spoken English	Materials preparation
7	writing	550	3046.59	instruction of thesis writing, teaching of academic writing in EAP, Learning/teaching academic writing in EFL	The effectiveness of various approaches to language learning and language teaching
8	discourse	350	2701.34	discourse analysis, discourse communities and community, discourse structure	Discourse analysis
9	study	582	2559.40	data analysis, genre analysis study discourse analysis study,	Discourse analysis
10	analysis	470	2469.77	a corpus-based analysis, a genre analysis, discourse analysis	Discourse analysis

APPENDIX 5 (Continued)

No	f	LL	Keywords	Examples	Topics from ESP journal
11	students	753	2140.52	architecture students in a major US university, ESL students in content classes, international graduate students in non-science	Needs assessment
12	research	730	2117.67	in medical research articles discourse research, Scientific research	Discourse analysis
13	writers	160	2000.34	writers of genres in ESP genre-based writing, novice writers, materials writers	Discourse analysis
14	rhetorical	171	1647.74	rhetorical and educational traditions, rhetorical composition of research article, conventions of rhetorical composition	The effectiveness of various approaches to language learning and language teaching
15	results	245	1617.19	results of a move analysis, results of the questionnaire, results of the corpus analysis	Discourse analysis
16	papers	381	1559.06	Dutch-authored draft research papers, academic research papers, seminar papers	Discourse analysis
17	findings	243	1542.33	findings for EAP teachers and students, findings for lecturer presentations, findings from research into communication	Implications that findings from related disciplines can have for the profession of ESP
18	texts	216	1473.82	interlanguage texts, medical texts, workplace texts	Discourse analysis
19	teaching	302	1463.42	cognate teaching, post-communicative language teaching, teaching of English for Academic Purposes	The effectiveness of various approaches to language learning and language teaching

APPENDIX 5 (Continued)

No	f	LL	Keywords	Examples	Topics from ESP journal
20	skills	153	1384.14	interpretation skills, developing presentation skills, linguistic skills, writing skills	The effectiveness of various approaches to language learning and language teaching
21	genres	129	1350.59	written academic genres, specialist genres students, professional genres	Discourse analysis
22	knowledge	134	1235.37	lexical knowledge of EST students grammatical knowledge, quality of knowledge of technical words, English Vocabulary Knowledge of Indonesian University Students	Second language acquisition in specialized contexts
23	eap	187	1215.21	EAP writing materials, EAP curriculum, EAP educations ,EAP courses	Curriculum development and evaluation
24	data	195	1198.70	written data , data-based analysis of language use data, corpus data	Materials preparations
25	linguistic	153	1148.64	linguistic features, linguistic skills, linguistic aspects	Second language acquisition in specialized contexts
26	based	312	1108.13	Genre based analysis, genre-based analysis, content-based analysis	Discourse analysis
27	communication	213	1048.23	communication skills and communicative events, communication needs , international scientific communication.	Needs assessment
28	articles	280	1037.43	academic journal articles, ESP research articles, science articles	Discourse analysis

APPENDIX 5 (Continued)

No	f	LL	Keywords	Examples	Topics from ESP journal
29	learners	126	1011.79	learners in genre-focused EAP writing classes, 12learners in low-frequency bands, learners in a particular discipline	Possible means of cooperation between ESP programs and learners' professional or vocational interests
30	pedagogical	92	955.24	pedagogical implications, pedagogical proposal, pedagogical implications for genre-focused EAP	Implications that findings from related disciplines can have for the profession of ESP
31	lexical	124	893.00	lexical analysis, lexical accuracy, lexical approach	Second language acquisition in specialized contexts
32	strategies	150	868.13	learning strategies in ESP areas, reading strategies, politeness strategies, metacognitive strategies,	Second language acquisition in specialized contexts
33	specific	220	840.63	specific law course, occupation-specific vesl,specific discourse community	Curriculum development and evaluation
34	article	277	838.57	the article describes a drama-based approach,the article examines the reading and writing tasks	The effectiveness of various approaches to language learning and language teaching
35	communicative	99	825.24	communicative challenges, communicative confidence of the ITAs, communicative competence in English for the global workplace	Needs assessment
36	disciplines	117	819.70	Various sub-disciplines, science disciplines, engineering sub-disciplines	Implications that findings from related disciplines can have for the profession of ESP

APPENDIX 5 (Continued)

No	f	LL	Keywords	Examples	Topics from ESP journal
37	disciplinary	115	810.92	disciplinary identity in ESP, disciplinary practices of engineering, disciplinary communities	Implications that findings from related disciplines can have for the profession of ESP
38	business	324	799.05	case method in teaching business English, teaching and learning business English, teaching strategies for our students of business English	The effectiveness of various approaches to language learning and language teaching
39	features	189	763.64	linguistic features, general features, grammatical disciplines features	Second language acquisition in specialized contexts
40	learning	192	758.70	L2 learning, contextual learning EFL, ESP learning,	The effectiveness of various approaches to language learning and language teaching
41	used	272	709.05	rhetorical elements used in academic texts, reporting clauses used in citation, predicate phrases used in EST texts	Second language acquisition in specialized contexts
42	science	187	682.46	a theme-based language course for science students, writing course for foundation level science, a course for second-year Science students	Curriculum development and evaluation
43	structure	156	673.54	generic structure, structure in academic research, thematic structure.	Discourse analysis
44	student	164	658.63	student-led presentations, student engagement in arts, student essays	Needs assessment
45	use	375	657.35	use of English as a lingua francases of English in academic settings, use of two specific communication skills	Descriptions of specialized varieties of English

APPENDIX 5 (Continued)

No	f	LL	Keywords	Examples	Topics from ESP journal
46	purposes	150	651.92	Courses in English for Academic Purposes, teaching English for Business Purposes, courses on English for EU purposes.	Descriptions of specialized varieties of English
47	graduate	93	611.74	assessment on video for non-native speaking graduate, success in graduate courses, graduate students concerning required	Needs assessment
48	university	200	592.70	language integrated learning (CLIL) at university, discourse communities at an American university, a study of faculty writing at one university	Discourse analysis
49	implications	129	587.63	implications for English academic purposes, implications for ESP teaching and research, implications for self-study	Implications that findings from related disciplines can have for the profession of ESP
50	vocabulary	92	585.58	prepare classroom vocabulary materials, ESP vocabulary, vocabulary teaching in ESP economics	Materials preparation
51	speakers	104	573.33	written by non-native speakers, health-care communication skills in native speakers, an assessment of the communication needs of non-native speakers	Needs assessment
52	tasks	86	552.94	genre in academic literacy tasks, genre-analysis tasks, email tasks for the business English classroom	Needs assessment

APPENDIX 5 (Continued)

No	f	LL	Keywords	Examples	Topics from ESP journal
53	medical	154	543.64	vocabulary in medical research articles, Establishment of a Medical Academic Word List, A corpus of medical texts in English	Materials preparations
54	scientific	128	518.41	aspects of scientific discourse, marked theme in scientific research articles, govern tense usage in scientific articles	Second language acquisition in specialized contexts
55	content	129	516.49	academic content classes, students representing diverse content areas, legal curriculum content	Discourse analysis
56	reading	155	507.75	second language reading, L1 and L2 reading, academic reading and writing materials	Needs assessment
57	approach	180	506.29	a genre approach to language teaching, a discourse topic approaching the discourse topic to determine, A chronotropic approach to genre analysis	Discourse analysis
58	international	157	501.99	international nature of the engineering industry, international business practitioners, international business professional	Possible means of cooperation between ESP programs and learners' professional or vocational interests
59	written	165	490.68	Language of international scientific communication, Problem-solving discourse on an international construction site, language of international scientific communication.	Descriptions of specialized varieties of English

APPENDIX 5 (Continued)

No	f	LL	Keywords	Examples	Topics from ESP journal
60	instruction	89	455.80	EAP instruction of thesis writing, impact of English-medium, instruction, traditional research report writing instruction.	Discourse analysis
61	courses	130	451.32	business communications courses, technology graduate students in ESP writing courses, the design of writing courses	Curriculum development and evaluation
62	text	121	437.27	medical text types, spoken and written text types, text analysis in EAP/ESP	Discourse analysis
63	context	129	432.52	international corporate context, in the context of graduate student academic presentations, competitive business context	Discourse analysis
64	materials	111	388.95	developed materials for classroom, genre teaching materials, design of appropriate language learning materials	Materials preparation
65	engineering	100	388.55	to create an Engineering English Word List, establish a frequency-based corpus of student engineering lexis, preparing Engineering English teaching materials	Materials preparation
66	professional	129	373.76	discourse strategies in professional e-mail negotiation intertextuality in professional discourse , study of professional practice , the professional discourses in the actual workplace,	Implications that findings from related disciplines can have for the profession of ESP

APPENDIX 5 (Continued)

No	f	LL	Keywords	Examples	Topics from ESP journal
67	patterns	102	370.43	the role of email in the communication patterns, the recurring patterns of lexica, distinct patterns of thematic distribution	Discourse analysis
68	practices	92	358.69	practices of multilingual scholars, actual classroom practices, practices of the discourse community	Second language acquisition in specialized contexts
69	native	148	344.16	non-native scientists needs of non-native English writers, communication needs of non-native speakers of english, developing health-care communication skills in native speakers,	Needs assessment
70	discussion	108	329.06	discussion of the pedagogical implications, discussion of the teaching implications of the findings, discussion of the possible implications of teachers and learners	Implications that findings from related disciplines can have for the profession of ESP
71	teachers	128	305.53	esp specialists and content teachers, trainee teachers, vocational ESL (VESL) teachers	The effectiveness of various approaches to language learning and language teaching
72	word	136	281.71	a medical academic word list, a new general list of word families, a word list for foundation engineers	Materials preparation
73	course	216	270.04	communicative course design, specific-purpose course design, participatory course evaluation in ESP	Curriculum development and evaluation
74	studies	116	269.17	studies of writing in academe, in international higher education law studies, studies of academic discourses,	Discourse analysis

APPENDIX 5 (Continued)

No	f	LL	Keywords	Examples	Topics from ESP journal
75	reports	154	250.40	reports on a genre analysis, reports on a study of business student, reports on research based on a corpus	Discourse analysis
76	using	137	224.47	using a corpus-based approach, using genre analysis as a framework, using English in product advertising	Discourse analysis
77	role	118	221.92	role in business correspondence, role of emails, role of the pedagogical context in ESL student writers	Discourse analysis
78	field	107	215.32	medically terminologies words, nursing words in nursing, words in the Business English environment interact with each other on a semantic level. After a brief introduction and literature, polysyllabic words in the teaching of oral communication	Materials preparation
79	case	181	202.28	a chronotropic approach to genre analysis, A corpus-based approach to online materials development	Discourse analysis
80	design	88	172.06	specific-purpose course design,	Curriculum development and evaluation
81	Legal	87	167.39	legal educational context, academic legal genres, covering letters in negotiating a legal contract, legal case genre networks	Discourse analysis

APPENDIX 5 (Continued)

No	f	LL	Keywords	Examples	Topics from ESP journal
82	process	112	161.32	rhetorical differences between texts written, differences in the politeness strategies, differences between texts written in English by Spanish-speaking academics	Second language acquisition in specialized contexts
83	words	106	136.06	collocations of high frequency words in medical research abstracts, frequently-used nursing words in nursing research articles, academic words provided a lower coverage	Materials preparation,
84	level	112	133.80	a two-level rhetorical structure, problems at the sentence level in English for written communicative purposes problems at the paragraph level, English for written communicative purposes	Second language acquisition in specialized contexts
85	present	103	119.48	English texts present a higher degree of rhetorical promotion	Discourse analysis
86	show	103	112.75	results show that corpus instruction contributed positively, the findings show that online advertisements, Findings show that discursive practices	Discourse analysis
87	terms	95	90.86	in terms of discourse competence, in terms of genre acquisition, in terms of the social genre	Discourse analysis
88	education	94	89.31	writing in graduate engineering education, research-based language education, the context of professional education	Discourse analysis

APPENDIX 5 (Continued)

No	f	LL	Keywords	Examples	Topics from ESP journal
89	information	108	73.85	NS scientists manipulate information structure, information on writing statements, planned information management	Second language acquisition in specialized contexts
90	development	89	56.03	new directions for materials development, development of an emergent part-genre, online materials development for writing research articles	Materials preparation
91	found	108	44.76	semantic associations of words found in the business lexical environment, six typical question types found in advice-giving simulated, the categories found extend and refine previous models of this section,	Second language acquisition in specialized contexts
92	group	97	41.25	products of a group of Spanish researchers, business letters written by a group of native speakers of english, a group of practicing biomedical scientists	Discourse analysis

BIOGRAPHY

Name	Miss Yang Yu Yuan
Date of Birth	April 19, 1990
Address	18/18 Bangna Trad Bangplee Samutprakarn Thailand, Huachiew Chalermprakiet University
Academic Background	
2008 - 2012	Bachelor of Arts in Teaching Chinese as a Second Language, Qingzhou College (China)
2010 - 2011	Learning Communicate Thai as a Second Language in Huachiew Chlerprakiet University (Thailand)

