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研究課題名（和文）On the Creation of Software to Improve Japanese Learners' Academic English

研究課題名（英文）On the Creation of Software to Improve Japanese Learners' Academic English

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交付決定額（研究期間全体）：（直接経費） 3,000,000円

研究成果の概要（和文）：この研究では、大規模な学術英語フレーズリスト、リソースを使って学習するためのアプリ、およびリソースをデータベースとして使用し学術英語の執筆を支援するマイクロソフトワードのオートサジェストプラグインが作成されました。このリソースは日本人学習者向けにカスタムされています。各フレーズのために書かれた元の例文が日本語に翻訳されています。

研究成果の学術的意義や社会的意義

This research created a large-scale academic English phrase list, an app to study the resource with, and a Microsoft Word auto-suggest plug-in that uses the resource as a database to help writers write academic English.

研究成果の概要（英文）：This research created a large-scale academic English phrase list, an app to study the resource with, and a Microsoft Word auto-suggest plug-in that uses the resource as a database to help writers write academic English. This resource is custom-tailored for Japanese learners in that the original example sentences written for each phrase has been translated into Japanese.

研究分野：Corpus Linguistics

キーワード：Corpus Linguistics Corpora Academic English ESP Multi-word units Collocation Fixed Expressions Formulaic Language

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## 1 . 研究開始当初の背景

Before this research was conducted, no large-scale resource for learning academic English based on the lemmatized concgramming method existed that was customized for Japanese learners. I had utilized this method when I did my PhD on the most common collocations of general English, and this was successful in creating the first large-scale collocation resource for general English. I used this method to do the same for academic English. This method required the creation of one-off software and novel methodologies to achieve its goals, and thus no other researchers yet had achieved such results.

## 2 . 研究の目的

The purpose of this research was to create a large-scale resource for learning academic English based on the lemmatized concgramming method that is customized for Japanese learners, along with some new software to use to navigate or study the resource with. The resource was used as a database to create a smartphone app to study it with, and a Microsoft Word auto-suggest plug-in to help learners write academic English in real time. Currently, at Meijo University a similar smartphone app is being used, which was based on my PhD research on general English for collocations. This app is part of the official curriculum for many years, and has been successful in helping students acquire such knowledge. So, the purpose of this current research was to do something similar, but for academic English. Japanese university students writing master's theses or even Japanese professors writing research papers or PhD theses can take advantage of the resources this project created.

## 3 . 研究の方法

Based on his Ph.D. research method for general English, the head research conducted the same method for academic English. I created a research team that examined thousands of collocations in the academic English section of the Corpus of Contemporary English to identify common ones. The approximately 5,000 phrases identified then had original example sentences written for each to help learners better understand how to use them in context. These sentences were then translated into Japanese by a professional translator. A smartphone app was created to distribute this resource and test knowledge of it with. This app features a Leitner algorithm to help students learn efficiently, and also had a quiz-taking function which allows quizzes to automatically be created, graded, and submitted via email, thus creating no extra work for teachers who would like to test their students' knowledge of the contents.

Then, a Microsoft Word plug-in was created with the resource as its database. A professional programmer was hired to create this unique function. When Microsoft Word is opened, a user can freely install the plug-in we created. When turned on, a sidebar will appear and as a user types, suggestions of common collocations that occur with the last word the user typed automatically appear on the sidebar. These collocations can be clicked on to reveal further information, such as the collocation's example sentence and a Japanese translation of it.

The smartphone app and plug-in were then tested with Japanese participants that were fluent in English to judge whether it had value for them. The feedback was positive and any advice on how to improve the resources is now being considered as to how to make improvements on them.

## 4 . 研究成果

The resource, smartphone app, and plug-in were all found to have value for Japanese learners, even those who have high fluency in English. The app and plug-in were found to be novel resources for Japanese learners, and the resource in general was thought to have a lot of value for Japanese learners who want to improve their academic English

skills.

The project created a resource that can be freely downloaded which has approximately 5,000 academic English phrases. These phrases all have original example sentences, and those and the phrases themselves all have Japanese translations. Learners can download this and study it directly. Moreover, teachers and materials creators can also use the resource as reference materials to choose academic English to include in textbooks.

Learners can also opt to download the free smartphone app and study the contents that way. The app has a robust, unique Leitner algorithm and thus should help make learning the phrases more efficient. The app's architecture is based on an iTunes app store best selling educational app, so it has many complex features that help learners to learn whatever content is in the app most efficiently.

In addition, learners can also install a Microsoft Word plug-in that can auto-suggest academic phrases from the resource in real time as a user types. This should be useful for writers of academic English such as Japanese students writing their graduation theses, or master's/PhD thesis writers. University professors in Japan can also take advantage of it while they write their own research papers in English. To date, it is the only such plug-in in existence.

The feedback from the experiment where these resources were tested were successful and showed that the project resulted in unique resources that Japanese users find valuable for improving their academic English with. The participants were university professors who not only mentioned that the software and resource was useful for their students, but also for themselves.

5. 主な発表論文等

〔雑誌論文〕 計3件（うち査読付論文 3件／うち国際共著 1件／うちオープンアクセス 0件）

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2. 論文標題 The creation and application of a large-scale corpus-based academic multi-word unit list	5. 発行年 2021年
3. 雑誌名 English for Specific Purposes	6. 最初と最後の頁 142-157
掲載論文のDOI（デジタルオブジェクト識別子） 10.1016/j.esp.2021.01.001	査読の有無 有
オープンアクセス オープンアクセスではない、又はオープンアクセスが困難	国際共著 該当する

1. 著者名 Florescu, C., & Rogers, J.	4. 巻 None
2. 論文標題 On developing a real-time academic English auto-suggest tool	5. 発行年 2023年
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オープンアクセス オープンアクセスではない、又はオープンアクセスが困難	国際共著 -

1. 著者名 Rogers, J.	4. 巻 None
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〔学会発表〕 計4件（うち招待講演 0件／うち国際学会 3件）

1. 発表者名 Rogers, J.
2. 発表標題 On the creation and application of a large-scale corpus-based academic multi-word unit list
3. 学会等名 The International Academic Forum (IAFOR) (国際学会)
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1 . 発表者名 Rogers, J.
2 . 発表標題 On the development of real-time academic English auto-suggest software
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1 . 発表者名 Florescu, C.
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4 . 発表年 2023年

1 . 発表者名 Florescu, C.
2 . 発表標題 Using a large-scale corpus-based academic multi-word unit list to create digital learning tools
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〔 図書 〕 計0件

〔 産業財産権 〕

〔 その他 〕

This research's results can be accessed through the smartphone app Academic English Phrases on the Apple and Android app stores.

## 6. 研究組織

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## 7. 科研費を使用して開催した国際研究集会

〔国際研究集会〕 計0件

## 8. 本研究に関連して実施した国際共同研究の実施状況

共同研究相手国	相手方研究機関