

New Zealand Māoris value the bountiful properties of Flax.

The nectar from its flowers makes a sweet drink.

Its roots can be crushed into medicine.

Its gum eases pains and heals wounds.

Its leaves serve as bandages.

Flax can be twisted, plaited and woven into fishing nets, footwear, cords and ropes.

It can also help you learn English, and other languages too.

The Book of FLAX

A new approach to computer-assisted language learning

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1. Introducing FLAX

FLAX is both a vision and a tool that you can use to create language learning exercises and facilitate your students' language production.¹

The vision is to empower teachers to create engaging activities, to entice learners into intriguing language play, and to provide fingertip access to enormous collections of authentic phrases. The Web contains innumerable language activities, quizzes, and games, but they are fixed: the activities are cast in stone and the material is chosen by others. Our vision is to put the control back where it belongs, in the hands of teachers and learners. As well as language activities, the Web hosts countless ready-made texts and massive collections of writing in different areas – but they are hard to access in ways that facilitate language learning. Our vision is to capitalize on this wealth and process it into accessible and reusable language resources.

As an activity creation tool, FLAX lets teachers (or learners) design activities easily and rapidly by automatically transforming existing language material. The activities are either developed from popular games (e.g., Hangman, Dominoes, Tetris), or use game thinking to convert language learning into a form of entertainment. As a learning facilitation tool, FLAX can automatically process text, identify linguistic expressions with different patterns, and order them in terms of usage frequency, most popular first. This makes language patterns easily accessible to users. With an adequate repertoire of word combinations, learners can effectively build their ideas from blocks of words (e.g., alcohol consumption, on the other hand, it should be noted that), instead of having to choose every single word and struggle to organize them into the right sequence.

FLAX enables teachers to build bespoke libraries very easily. It is built upon powerful digital library technology, and provides access to vast linguistic resources containing countless examples of actual, authentic, usage in contemporary text. But teachers can also build collections using their own material, focusing on language learning in a particular domain (e.g., business, geology) or motivating students by using text from a particular context (e.g., country or region, common interests).

FLAX focuses on written language, and on learning English. Audio can be incorporated into dictation-style activities, and some activities use images to help conceptual understanding and foster descriptive power. The underlying ideas are language independent: we envisage different language versions in the future. FLAX encourages group learning and communication – some games embody built-in chat facilities and real-time scoreboards. All interaction takes place using a Web browser.

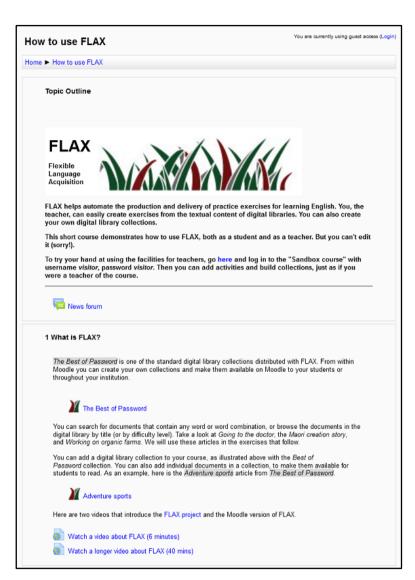
FLAX is an open source project. You can use it on our demonstration site, or download the software and run it yourself. Please help yourself! – and help us by providing feedback, and, if you can, technical expertise to extend it in different ways and to other languages.

Through examples, this book sets out the vision and the system that embodies it.

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¹ It's confession time. The name originated as a bad acronym: *Flexible Knowledge Acquisition*. We prefer to think of it simply as FLAX.



The How to use FLAX Moodle course

What FLAX is ...

FLAX is a tool for teachers to create a language learning environment for their students – or for motivated students to create language exercises for themselves. It is "authorable" software: teachers can adapt the material to their students' needs.

Using FLAX, you can create activities for your students very quickly. The language content is automatically drawn from a digital library and configured according to your specifications. This is far quicker than creating the content yourself. Moreover, before the activities are made available to students you can check them to ensure that every item reaches your own standards, and discard any that do not.

We also envisage that you will build your own digital library collection from material suitable for your class. You can do this quickly and easily if you have documents in electronic form (e.g., Word files) or text that you can cut and paste from elsewhere (e.g., a Web page).

... and what it's not

FLAX is not a course for learning English (or any other language). And it does not by itself allow you to create such courses. With FLAX, you can create individual activities of different types. If you want to put them together into a course that learners proceed through in a predetermined sequence, you will need to use a learning management system. FLAX fits smoothly into the Moodle course management system. It also works stand-alone as a way of creating and presenting activities – but it does not lead students through them.

What this book is ...

This book describes how to use FLAX, including how its various activity types look to students, how teachers create them, how to build a digital library collection from your own content, and a little bit about how it works. We cover both the Moodle and stand-alone versions of FLAX. The book is based on the Moodle course illustrated on the facing page.²

We begin by looking at activities made from the material in an existing digital library collection, in Chapter 4. Chapter 5 illustrates the language environment that FLAX provides. Then Chapter 6 shows how to build your own collection. In practice you will work in the reverse order: first build a collection; then create exercises based on it. Chapter 7 shows what you can do with the language resources that FLAX provides.

... and what it's not

The examples in this book are chosen to illustrate the different facilities that FLAX provides. Many are drawn from a particular digital library collection that reflects our context in New Zealand and is probably not a suitable collection for teaching in your own environment.

Our advice is to make a collection of your own material, and then design activities!

² http://flax.nzdl.org/moodle/course/view.php?id=2



The Best of Password collection



About the Best of Password collection

2. Collections

FLAX organizes documents into *collections* ranging from one or two documents to millions of them. Typically, language teachers either build a small collection themselves with a handful of documents that they choose, or make use of collections that others have built or ones distributed with FLAX as samples. Collections need not be small, however; underpinning the FLAX system is digital library technology that can accommodate vast collections, including entire libraries. First we look at how collections are used – by both students and teachers. Later we will see how to create them (Chapter 6).

The top picture opposite shows the "browsing" page of a FLAX collection entitled *The Best of Password* (this collection is distributed with the software). Beneath that is the "home page," which is where you go when you click the *About Collection* button in the control bar near the top of the page. The other buttons let you access the documents in different ways. (Some of them do not always appear; it depends on how the collection was built.)

This is what the buttons do:

- Search enables you to search the collection for particular documents, paragraphs, or sentences that contain particular words; or search for particular collocations
- Browse lets you browse the documents by title
- Activities takes you to language games that have been built for the collection, and allows you to create new ones
- Collocations lets you study the collocations in the documents
- Wordlist presents the words in the collection, sorted by how often they occur
- My Cherry Basket shows you any collocations ("cherries") that you have collected.

As the home page explains, this collection contains articles published in *Password*, a New Zealand magazine for new speakers of English that contains articles, exercises and teaching notes.³

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³ Published by Puriri Press as *The Best of Password 7*, edited by H. Denny, A. Sachtleben and V. Yee. We gratefully acknowledge the editors' permission to build and distribute this collection. To subscribe to *Password*, please visit http://www.password.org.nz.



"Adventure sports," a document in the Best of Password collection

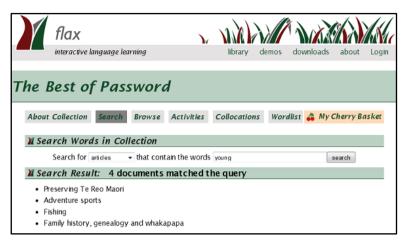
2.1 Documents

There are 20 documents in the *Best of Password* collection. Here is one, called "Adventure sports." Most of them address topics relevant to New Zealand, and this is no exception. It is often helpful for teachers to create their own collections that contain documents relevant in a local context, or focused on a particular topic area (such as business, or geology). That way, students can work with documents they can easily relate to, and learn vocabulary and expressions used in that context. You will soon learn how to create collections of your own documents (Chapter 6).

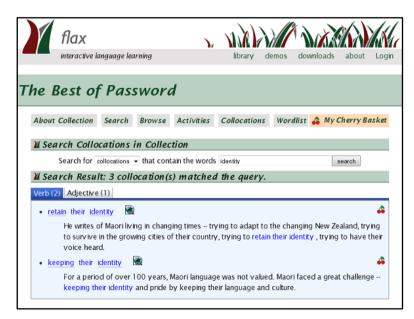
The text talks about adventure sports in New Zealand. The illustration shows the original form of the document; you can also display a version in which collocations are highlighted. The tab labeled wordlist highlights certain words in the document: ones in the top 1000 English words, or the top 2000, or academic words (you can choose). The adjective tab highlights collocations that begin with an adjective. Noun, preposition and verb do the same for other parts of speech. Not all such collocations are highlighted because part of speech detection is done automatically, and is not infallible. (For example, sentence-initial nouns are tagged as proper nouns and excluded from collocations.) We will learn more about collocations and how they are identified later (Section 4.2).

The accompanying image illustrates white-water rafting and rock-climbing. It is easy to associate images with documents when creating your own collections. Often just one image is associated with each document, and it is displayed at the beginning as an introductory illustration (as here). Sometimes people make collections where each "document" is an image, along with a caption or some explanatory text. It is possible to associate several images with a document, in which case they are equally spaced throughout it. The documents you include in FLAX collections are intended to be simple: controlled image placement is not possible. You can also associate YouTube movies with documents.

Audio versions of the document are available too. If the player widget above the document image is activated, FLAX reads the document to you. In fact, there are two audio versions of documents in this collection: one in British English (as shown) and the other in New Zealand English (accessed by the menu). This facility allows students to listen to documents as well as read them – but you can include any audio accompaniment, not just a spoken version. Being able to listen to documents enables various "dictation" activities. When creating your own collections it is up to you to provide appropriate audio files, if you want. You need to record them separately, not in FLAX.



Searching the Best of Password collection for the word "young"



Searching for collocations that involve the word identity

2.2 Searching

When you press the *Search* button you get a standard box into which you type a word (or words) to seek. The illustration shows a search for the word "young." In this case four documents are returned, and their titles are shown. Clicking the second one, for example, leads to the "Adventure sports" article we saw earlier. The only difference is that (depending on your Web browser setup) the search term – the word "young" – is highlighted in yellow wherever it appears in the document.

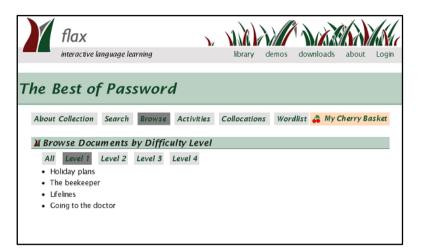
Searching is case-insensitive: the result is the same whether the query uses capital letters or small letters (*Young* is the same as *young*). However, you need to get the ending right – *computers* is *not* the same as *computer*. And if you specify more than one word, documents that contain any of them are returned. If you want to look for a phrase like *adventure sports* you need to put it in quotation marks.

Searching in FLAX is fast: even collections with millions of documents are searched almost instantly. If it seems slow for you, that's because of the network connection, not the searching itself. FLAX is built on digital library technology that is extremely efficient for large collections

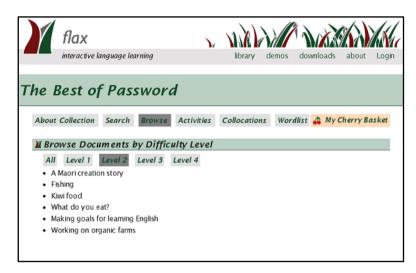
As well as searching articles and titles, you can also search collocations. You do this by pulling down the menu labeled *Search for articles* and selecting *collocations*. For example, a search for *identity* returns three collocations:

- retain their identity
- · keeping their identity
- cultural identity.

Each of these appears in an article in the collection. The first two involve verbs, and are shown in the bottom image; the third involves an adjective and appears under the *Adjective* tab. Alongside each is shown the context in which it appears. There are ways of exploring collocations further – e.g., clicking *retain* in the second example brings up many other collocations that use this word. There are ways of seeking documents that contain that particular collocation on the Web. And there are ways of "picking" the collocation and putting it into your own basket of favorite collocations. We will learn more about these when we look at FLAX's collocation facilities (Section 4.2).



Browsing the Best of Password collection: Level 1 documents



Browsing the Best of Password collection: Level 2 documents

2.3 Browsing

The *Browse* button on the collection's home page lists all the documents in it. We saw earlier the twenty documents in the *Best of Password* collection. Clicking any one displays the document, just as before.

Each document is assigned a difficulty level by the user when the collection is created. The illustration shows the Level 1 and Level 2 documents separately. In this example the levels range from 1 to 4, easy to hard. However, you can type in your own levels when you create a collection, so that instead of numbers the levels might be the words *easy*, *moderate*, and *hard*. When you create a collection it's up to you to decide what difficulty scale to use.

You can see just the documents at a particular difficulty level using the buttons on the browsing page above the list of document titles.

2.4 Activities, collocations, wordlist, cherry basket

The remaining four navigation buttons on the collection's home page are discussed later.

- Activities takes you to language games that have been built for the collection, and allows you to create new ones.
 - FLAX activities are discussed in Chapter 4. This button does not appear if you are working in Moodle, where language activities are instead integrated into the course and you create new ones using Moodle's *Add an activity* menu.
- Collocations lets you study the collocations in the documents.
 Collocations are small sequences of words that often appear together. They are discussed in Section 4.2.
- Wordlist shows you the words in all the documents in the collection.
 - You can look at all the words, or just the words in various standard lists the most common 1000 or 2000 words in English, or the academic words. This is discussed in Section 5.2.
- My Cherry Basket shows you the collocations ("cherries") that you have collected.
 - FLAX provides a facility for "picking" favorite collocations and saving them in a kind of notebook that we call a cherry basket. These are discussed in Section 5.5.



The FLAX (Flexible Language Acquisition) project aims to automate the production and delivery of practice exercises for overseas students who are learning English. Exercise material comes from digital libraries, which can supply a virtually endless supply of collaborative and competitive language activities. (All software produced by this project is open source, issued under the GNU General Public License.)

Book of FLAX FLAX videos More FLAX videos 视频

W FLAX Distributed Collections

The Best of Password

Earth Science

Happy English Learning

Image activities demo collection

W FLAX Resource Collections

British National Corpus

Learning Collocations

Web Phrases

Web Collocations

M British Academic Written English Collections

These collections come from the British Academic Written English (BAWE) corpus, which was developed at the Universities of Warwick, Reading and Oxford Brookes.

Physical Sciences

Arts and Humanities

Life Sciences

Social Sciences

Olf you would like to build your own collections and put them here, please email us

Live and work in Aotearoa New Zealand

Expert writing

The stand-alone FLAX website, showing the list of collections

3. Stand-alone FLAX or Moodle-FLAX?

FLAX runs both as a stand-alone software system and as a facility within the Moodle course management system. ⁴ The difference affects some operational details, but not the main core of FLAX's functionality. The way you look at documents, create language activities, use them, and build collections does not depend on which way you are working. But the way you get started does.

Stand-alone FLAX ...

To use FLAX in stand-alone mode, go to the URL of the FLAX server. This will show you the image on the opposite page. It gives a list of the standard collections that are available on the server, plus a list of collections created by users. Just click the name of any collection to go to its home page.

If you have installed the FLAX server on your own computer you will see just the collections at the top ("FLAX Distributed Collections"), and perhaps those at the bottom ("Collections Created by Registered Users"), if there are any, but not the ones in between, which are specific to the FLAX project server. FLAX is open source software; the server is completely free, and easy to install (see Section 8.1).

To create your own collections, you need to register as a user. ⁶ After doing this you can log in using the button near the top right of the screen. Any collections you create will be available to all users. If you want to keep them private, you need to install your own server — which is what we recommend.

The way you create new collections is exactly the same for stand-alone FLAX as for Moodle-FLAX, and is described in Chapter 6.

⁴ Moodle is at http://moodle.org.

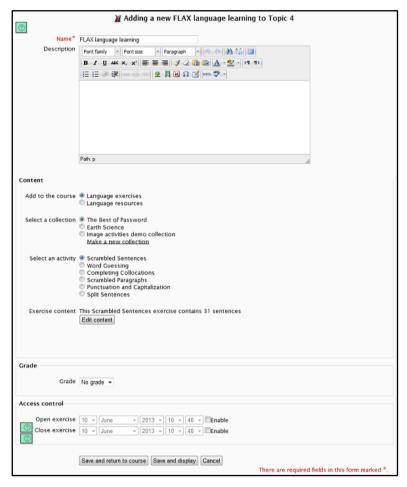
⁵ The FLAX project demonstration server is at http://flax.nzdl.org. Anyone can use it.

⁶ You can register as a user of the demonstration server by emailing your name and the name of the organization where you work or study to flax@cs.waikato.ac.nz.

The Best of Password is one of the standard digital library collections distributed with FLAX. From within Moodle you can create your own collections and make them available on Moodle to your students or throughout your institution.

The Best of Password

A FLAX collection in a Moodle course



Adding a FLAX activity or resource to a Moodle course

... or Moodle-FLAX

For Moodle users, FLAX can provide students in a class with convenient searching and browsing facilities that are accessed directly from their course. And for teachers, it lets them create new activities and new document collections without leaving the Moodle system.

Before you begin, the administrator of your Moodle system must first install the Moodle-FLAX module, which is available from both the FLAX and Moodle websites. Assuming that this module is installed in your system, a digital library collection is just another kind of Moodle resource. The small top picture opposite shows a fragment of a FLAX course that contains a digital library collection, whose name is preceded by the FLAX logo. Click it to enter the collection, exactly as shown in Chapter 2.7

In order to add to a course a FLAX collection, or a single document in a collection, turn editing on and use the standard Moodle *Add an activity or resource* menu. When the Moodle-FLAX module is installed, this contains a new item:

FLAX language learning.

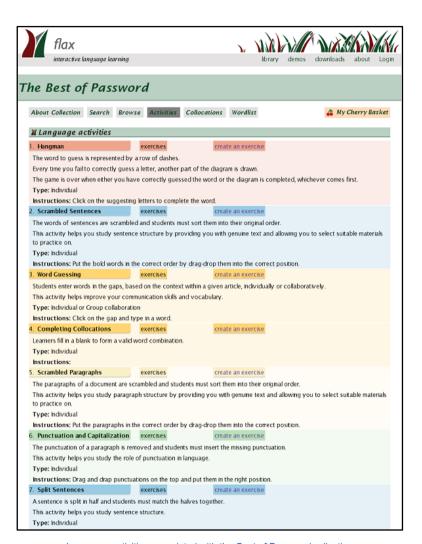
This takes you to the page shown opposite, where you opt to add a language resource or a language activity. All teachers who use Moodle will be familiar with this kind of display.

If you select *Language resource*, you see a list of FLAX collections that have been built within that Moodle installation, and when you select one of these you see a list of documents in it. You can add any of these documents or collections to your course.

If you select *Language exercise*, you see a list of collections and a list of activities associated with the currently-selected collection – as shown here. For example, here the selected collection is *The Best of Password*, and it has several associated activities, *Scrambled Sentences*, *Word Guessing*, and so on (these are described in Chapter 4).

There is also a link called *Make a new collection*. The process of making your own collection is described in Chapter 6. The list of collections will contain any new ones that you – or anyone else – has added to your Moodle installation. Beside any collection that you have added, buttons will appear that let you edit or delete the collection.

⁷ You can see this in the *How to use FLAX* course, which contains both the *Best of Password* collection and the single article "Adventure sports".



Language activities associated with the Best of Password collection

4. Language activities

The purpose of FLAX is to present language activities, or games, to students to enhance their learning of a second language. The system is not, in fact, restricted to English, but some features work best if English is the target language – ones involving language parsing, for example (see Section 8.3 for a discussion of other languages).

Eleven activity types are available in FLAX to train learners' overall language ability and collocation ability. They are divided into two groups, as follows.

- · Activities on Words, Sentences and Paragraphs
 - Hangman
 - Scrambled Sentences
 - Split Sentences
 - Scrambled Paragraphs
 - Word Guessing
 - Punctuation and Capitalization
- · Activities on Collocations
 - Related Words
 - o Collocation Matching
 - Collocation Dominoes
 - o Collocation Guessing
 - Completing Collocations

In the stand-alone FLAX system, these can be accessed from the collection's home page using the *Activities* button, as shown. Beside each activity type, there are two buttons, exercises and create an exercise. The first leads to a list of exercises that have been created for this collection. The second allows you to create your own exercise. Anyone can do this – including students. In fact, it is particularly instructive for students to create activities to help reinforce something that they are learning.

However, although anyone can create exercises, only registered teachers can *save* them. To do so, you log in with a username and password using the button near the top right of the screen.⁸

In the Moodle FLAX system, the teacher builds individual exercises into the course, which is where students invoke them (see Section 6.3 for an explanation of FLAX activity creation in Moodle).

There is a further activity type that is specifically for collections of images:

- Activities on Image Collections
 - Image Guessing

⁸ You can register as a user of the FLAX demonstration server at http://flax.nzdl.org by emailing your name and the name of the organization where you work or study to flax@cs.waikato.ac.nz.

4.1 Activities on words, sentences and paragraphs

Language learners compose text from words; they build words into sentences, and sentences into paragraphs. To do this they need knowledge of words, grammar, text structure and punctuation.

Learning a word involves knowing its various forms, both inflected and derived: its meaning, common usages, and collocations. Grammar constitutes a set of rules that govern the development of each individual sentence. Text structure refers to the ways that ideas can be joined together to form paragraphs, and ultimately complete texts. Punctuation helps organize text in ways that convey the appropriate meaning. These are all fundamental aspects of language learning.

FLAX offers a wide arrange of activities that help students acquire, practice, and master this basic essential knowledge.

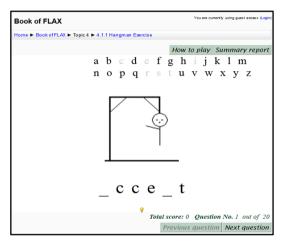
We begin with words and sentences, starting with an ancient game that helps improve spelling and makes vocabulary learning fun – Hangman. The next activity, Scrambled Sentences, focuses on the construction of sentences; teachers can, if they wish, target different parts of a sentence to help expose students to the basic sentence units. The next activity, Split Sentences, is an advanced form of Scrambled Sentences that guides students towards more complex sentence structures, including various types of clause.

Moving up to the level of text structure, the Scrambled Paragraphs activity draws students' attention to the flow of the text, and forces them to observe clues that signal a change of topic. The Word Guessing activity is multipurpose; it exercises spelling, helps students internalize grammar rules, and generally improves reading skills.

The Punctuation and Capitalization activity, as you can imagine, helps familiarize learners with the rules of punctuation and capitalization.

All of these activities are introduced with examples from the *Best of Password* collection. However, when you learn how to make your own collections in Chapter 6 (it's easy!), you'll be able to make activities that use words from this week's class vocabulary list, and text from your last reading assignment – or from this morning's news!

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A Hangman exercise

4.1.1 Hangman

Hangman is a version of the classic paper and pencil word guessing game, designed to train players' spelling skills. The task is to guess an unknown word, one letter at a time. A mystery word is chosen for the student to guess, and is shown by a row of dashes representing the number of letters in it. When the player suggests a letter that occurs in the word, it is put in all its correct positions. If they suggest one that does not occur, one element of the stick figure is drawn. The game is over when the player completes the word, or when the diagram is finished – in which case the player has lost.

Players can increase the odds by guessing vowels or other high-frequency letters first. The twelve most frequent letters in English are, in descending order, *e, t, a, o, i, n, s, h, r, d, l,* and *u,* and almost every word contains at least one of the five vowels *a, e, i, o,* and *u.* Letters that have already been guessed correctly offer hints to the player. In addition, teachers can include hints while creating the activity.

The illustration shows a Hangman activity mid-game. Accept has been chosen as the mystery word (it appears in the "Why do you need to keep your first language?" article in The Best of Password Collection, which was used to build this particular game). The grayed-out letters have been guessed by the player. Those that do not occur in the word (i, r, and s) have resulted in parts of the stick figure being drawn. The letters that do occur (c, e, and t) were correctly placed in the word.

Since this exercise was created with hints, the player can click the light-bulb icon to view the hint provided for this word. In this case a brief definition is given (not shown).

The *Summary report*, accessible from the button at the top right, gives the start time, end time, score, and the student's final answer for each question.

This screenshot is from the Moodle version of FLAX. Everything looks identical in the standalone version, except that the page header is different.

In the Moodle version, all exercises, including this one, can be either "graded" or "ungraded." This screenshot is from an ungraded exercise. If grading is switched on, the *Previous question* button disappears and the *Next question* button is greyed out until the player guesses – or fails to guess – the word. Grades are recorded in the standard Moodle grading system, along with a detailed report that gives the student's answer for each question.



Designing a Hangman exercise

Teacher's interface for Hangman

It is very easy to create games like this. In stand-alone FLAX, go to the collection, click *Activities*, and click *create an exercise*. You will then see the form shown opposite. Note that the *Save* button is inactive, because although anyone can create and play games in the stand-alone interface, only registered teachers can save them. In order to save a game, first sign in using the *Login* button near the top right of the screen.

Alternatively, in Moodle, turn editing on; go to Add an activity; and select FLAX language exercise. Give it a name, ensure that the correct collection and exercise type is selected, and click Edit content. You will see exactly the same form, except that the buttons at the bottom are Review, Save and exit, and Cancel, instead of Review, Display, and Save as shown in the illustration opposite.

The simplest way to design a Hangman game is to accept all the defaults on this form. In Moodle, simply click *Save and exit*. In the stand-alone interface, click *Save* (if you're signed in), or just *Display* to play the game you've created.

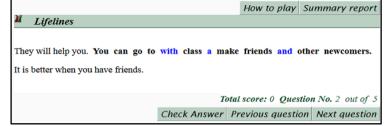
There are several options that you can specify using this form. (Click on any of the yellow question-mark icons to learn more about each option.)

For instance, you can specify the article or articles that words are taken from. Multiple articles can be selected by clicking while holding down the Ctrl or Shift key. You can also choose the minimum and maximum length of words.

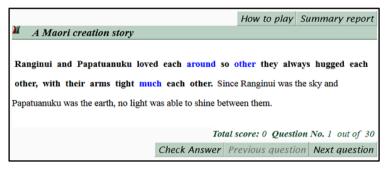
As you change the preceding parameters, the *Number of words available* changes dynamically to show how many words match the restrictions you have chosen. It is often a good idea to specify more words than you need, so that you can reject unsuitable ones if necessary.

Once you have selected your restrictions, click *Review* at the bottom of the form to look at all of the words available and specify which words should be selected for the exercise. Note that there is a limit of 20 words in an exercise. If you attempt to display or save the activity with more than 20 words selected, a message box will appear informing you that too many words have been selected. If you don't select any words, the first 20 will automatically be chosen (or, if fewer than 20 words are available, all of them will be included).

If you choose to include hints, a text box will be provided for every word you select, so you can specify a hint. You might suggest a letter for the player to guess, provide a synonym for the word, or a definition, or indeed any other text that you consider appropriate.



A scrambled sentence from "Lifelines"



A scrambled sentence from "A Māori creation story"

	How to play Summary report			
The kiwi bach				
There was lots to do. and Our often nothing! sofas on parents did just old lay around				
Total score: 0 Question No. 1 out of 18				
	Check Answer Previous question Next question			

A more difficult scrambled sentence, from "The kiwi bach"

4.1.2 Scrambled Sentences

In a Scrambled Sentence exercise, the words of sentences are rearranged and students must put them into their original order. You click the mouse on a word, drag it to the correct position, and drop it there. Only the blue words can be moved.

With FLAX, students are provided with genuine, authentic text, and the teacher can select suitable material for them to practice on.

These exercises enhance students' ability to group words into meaningful chunks, which is crucial to fluent reading. With practice, students become more adept at grouping words into phrases and sentences. As they put the sentences together, their awareness of both sentence structure and phrase structure improves. They soon learn to identify subjects and predicates, organize words into phrases, link adjectives and adverbs to the words they modify, and use conjunctions to provide cohesive ties.

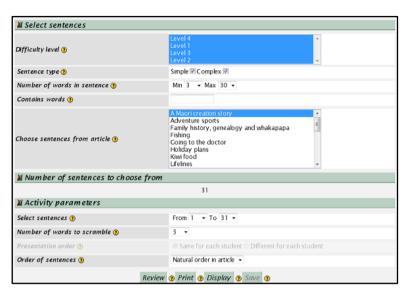
The first illustration shows an exercise created from the article "Lifelines" in the *Best of Password* collection. Three words are misplaced (the ones in blue). The preceding and following sentences are given, to provide context (unless the chosen sentence is the first or last in a paragraph). The correct order here, of course, is *You can go to a class and make friends with other newcomers*. In general, complex structures or long sentences make the exercise more challenging – and perhaps frustrating.

If the words are moved into their correct positions and *Check Answer* is clicked, an encouraging message is displayed. Any words that are out of place are underlined in red. Students proceed to the next question, or, if they wish, return to earlier ones, using the buttons at the bottom.

The second illustration is from the "Māori Creation Story" in the same collection, again with three words misplaced (the sentence is *Ranginui and Papatuanuku loved each other so much they always hugged each other, with their arms tight around each other).* Had the proper nouns in a sentence like this been permuted, the task could be very difficult; teachers can avoid this when they create the exercise. A general principle that FLAX incorporates throughout is that the choices the system makes can always be overridden by the teacher – or not, at the teacher's discretion.

The third example is much harder, because almost all the words in the sentence are misplaced. (*Our parents often just lay around on old sofas and did nothing!*). Clues are provided by sentence-initial capitalization and sentence-final punctuation.

The Summary report button at the top right gives the start time, end time, score and the student's final answer for each question.



Designing a Scrambled Sentences exercise

Teacher's interface for Scrambled Sentences

You can easily create a Scrambled Sentences exercise by accepting all the defaults on the *Edit exercise content* form shown. In Moodle, simply click *Save and exit*. In the stand-alone interface, click *Save* (if you're signed in), or just *Display* to play the activity you've created.

However, there are many options that you can specify using this form.

In the *Select Sentences* section, you can specify from which document or documents the sentences are taken, by either naming the articles or selecting a difficulty level. You can choose *Simple* (single clause) or *Complex* (multi-clause) sentences, specify how many words the sentences should contain (from 3 to 30 words by default), and even give a word or words that the target sentences must contain. Click on any of the yellow question-mark icons to learn more about each option.

The *Number of sentences to choose from*, halfway down the form, changes dynamically to show how many sentences match the restrictions you have chosen.

Under *Activity parameters*, you can specify which sentences should be selected for the exercise. Note that there is a limit of 50 sentences in an exercise. You can also specify the number of words to scramble, and whether the sentence order should be fixed, or differ for each student. If they are presented in a fixed order, you can specify whether it should be the natural order in the article, shortest or longest first, or random.

When you click *Review* at the bottom of the form, the sentences proposed for the activity will appear below. If some are unsuitable, deselect them using the checkbox beside them. It is often a good idea to specify more sentences than you need, so that you can reject unsuitable ones.

In stand-alone FLAX you can also make a printable version of the activity using the *Print* button, yielding a paper form for students to complete offline.

	How to play Summary report		
They believe this will help them	and culture is language.		
It is true	that it makes resettlement easier?		
Many academics believe that language is culture	and many languages.		
But it is also very important	while their parents have not.		
In New Zealand there are many cultures	to settle more quickly into their new country.		
Often the children have become fluent English speakers	to retain your first language.		
Total score: 0 Question No. 1 out of 1			
Check Answer Previous question Next question			

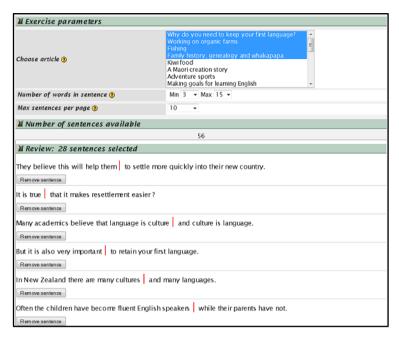
A Split Sentences exercise

4.1.3 Split Sentences

A Split Sentences exercise shows parts of sentences on the left and right, and students must match the second half of each sentence to its first half. Split Sentences aims to train students to read in chunks. The longer the chunks, the fewer the eye movements. Chunk reading can increase reading speed and lead to better comprehension.

FLAX attempts to place divisions judiciously (but the teacher can override its choices). Good divisions can give students experience with sentences of different structure: simple, compound or complex. As students match the second half with the first half of a sentence, they learn to identify different sentence patterns and sentence elements. They also learn how to join words or groups of words together using conjunctions, and their attention is drawn to connectors that show relationships among elements of a sentence.

The illustration shows a Split Sentences exercise created from the article "Why do you need to keep your first language?" in the *Best of Password* collection. The left-hand parts are shown in black and the right-hand parts in blue. Students work by moving the blue text to the appropriate place. When *Check Answer* is clicked, the correct sentences turn black.



Designing and reviewing a Split Sentences exercise

Teacher's interface for Split Sentences

Creating a Split Sentences exercise is very similar to creating a Scrambled Sentences exercise. The illustration shows the *Edit exercise content* form with modified options. Four articles have been selected (the first four), and they contain 56 sentences that match the *Number of words in sentence* criterion – here, between 3 and 15 words. These will be divided into groups of ten for presentation (set by the *Max sentences per page* parameter).

The *Review* button has been clicked, which shows how the sentences have been split. FLAX attempts to place the split point in a sensible location, but you can click and drag the red bar to adjust the position of the sentence split if necessary.

In each sentence, FLAX's automatic splitting method looks for the following features, in this order:

- prepositions and subordinating conjunctions (if, that, because, as, since, etc.),
- coordinating conjunctions (and, or, but),
- wh-words (where, what, when, why, which, whose, ...),
- the word to, and
- semicolons or commas.

If one of these is located in the sentence, the split is placed before it. If none appear, the split is made at the sentence's halfway point.

Many migrants to New Zealand believe that they should concentrate on learning as much English as possible, as quickly as possible.

Some of these communities have made a great effort to improve this situation by running special language classes for their children, to teach them the language of their parents. Other communities have encouraged the maintenance of their first language in language nests, after-school programmes, and in church services. Communities and families who have regular contact with their home country also have less difficulty maintaining their first language.

In New Zealand there are many cultures and many languages. Communities which have made learning English a priority for their children have found after a few years that families are having problems communicating with each other. Often the children have become fluent English speakers while their parents have not. And the children have lost much of their first language, so parents and children are not able to easily communicate with each other. The children are also less able to take pride in their cultural heritage, but yet are not fully accepted by their peers in the dominant culture.

But it is also very important to retain your first language. If language is culture and culture is language, then a migrant is in danger of losing his/her cultural identity if the first language is allowed to disappear. Although the shift to fluency in English may be slower if first language use is maintained, the importance of keeping the values of your first culture alive are enormous.

Many academics believe that language is culture and culture is language. A migrant wanting to settle permanently in an English- speaking country will need to learn English to learn the culture of that country.

They believe this will help them to settle more quickly into their new country. It seems to be even more important when they have children, to encourage the children to learn English quickly. It is true that it makes resettlement easier? it is easier to do everyday things if you can understand and be understood by those you need to deal with. It is easier to get employment, it is easier for children to succeed in a new education system, it is easier for tertiary study.

In New Zealand the Maori language was almost lost and many Maori felt lost because of that. Now there are opportunities for learning this language from an early age and the culture is becoming stronger at the same time.

To be bilingual is to speak two languages and have knowledge and understanding of two cultures. You cannot become truly bilingual if your first language is allowed to be replaced by your new language.

Total score: 0 Question No. 1 out of 1

Check Answer Previous question Next question

A Scrambled Paragraphs exercise

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4.1.4 Scrambled Paragraphs

Scrambled Paragraphs is similar to Scrambled Sentences, but instead of re-arranging words in a sentence, entire paragraphs are displaced and the player must restore them to their original order.

This activity draws students' attention to the structure of a particular text, the main idea of each paragraph and the coherence from one paragraph to the next. It draws attention to linking words ("connectors") that connect paragraphs or show relationships between different ideas. Also, it teaches skimming skills; students learn to read only important words in order to grasp the main idea of a piece of text. With practice, students learn to analyze different structures, identify topic sentences, and look for transition signals. As with other FLAX activities, students work on authentic text, and the teacher can select suitable material for them to practice on.

In the illustration, a Scrambled Paragraphs exercise has been created using the article "Why do you need to keep your first language?" in *The Best of Password* collection. The blue paragraphs can be moved up and down with the mouse, but black ones are fixed. Here the teacher has chosen to fix the first and last paragraphs. When you click *Check Answer*, if everything is correct, all paragraphs turn black. If your answer is only partially correct, the incorrectly-placed paragraphs remain blue.

Scrambled Paragraphs exercises can contain several questions, each based on a different document.



Designing and reviewing a Scrambled Paragraphs exercise

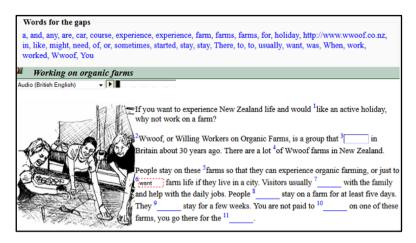
34

Teacher's interface for Scrambled Paragraphs

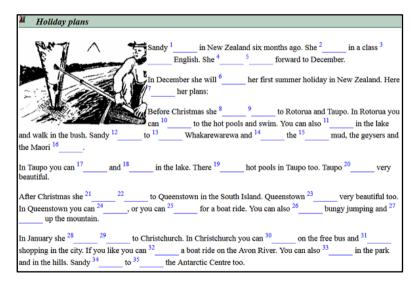
As usual, these games can be created quickly. As the illustration shows, there are only a few controls on the *Edit exercise content* form. You can select an article, or several articles (using the usual method of Ctrl/Shift-clicking); each article will generate one question in the exercise. The *Fix paragraphs* parameter allows you to choose whether any paragraphs are fixed, and if so, whether the first, last, or both. "Fixing" a paragraph means that it will appear in the correct place on the student's screen and be immovable. You can also select whether or not the paragraphs will be presented in the same order for every student.

In the form shown, the *Review* button has been pressed, displaying the exercise in the lower part of the screen. The numbers beside each paragraph indicate the correct order. If you choose "same for each student" for *Presentation Order*, the paragraphs will be in the order in which students will see them, and you can move paragraphs around here to make the exercise easier or more difficult. For example, you could put all paragraphs in the correct place except for two, whose order is switched. However, if the presentation order is different for each student, the order will be random for each student.

In general, FLAX selects exercise material automatically, but the *Review* facility allows teachers to exercise control over the content to ensure that it is suitable for students.



Word guessing, with hints provided



Guess the verbs!

4.1.5 Word Guessing

The Word Guessing game is similar to "Fill in the blanks" that is widely used for testing knowledge of vocabulary and syntax, as well as ability in reading comprehension. Words are removed from an article and students must put them back. These target words can be content words, such as nouns, verbs, adjectives and adverbs, or function words, such as prepositions, pronouns, conjunctions and auxiliaries.

The first illustration uses an article called "Working on organic farms." The player has guessed four words correctly, corresponding to gaps number 1, 2, 4 and 5 – indicated by superscripts that precede the words the user has typed (*like*, *Wwoof*, *of* and *farms* respectively). However, in gap 6 the player entered the wrong word, *want*; a red box indicates that this is incorrect and should be changed. Currently, the player has clicked on gap 3 (for which the correct word is *started*). Instead of clicking, the tab key can be used to move to the next gap.

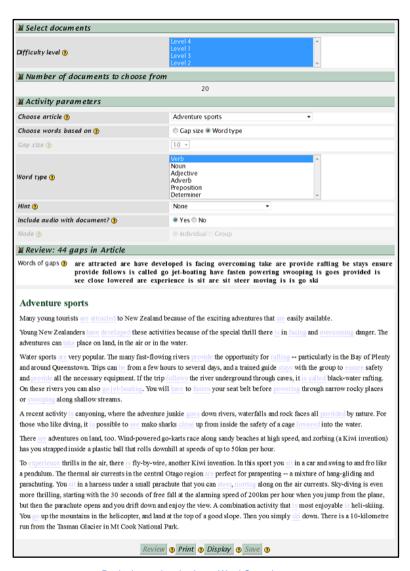
This is a difficult exercise, but is made a little easier because the teacher has included hints – the word list at the top. (Some words appear more than once because they fill different gaps.) The student can also hear the spoken text. This can be played using the widget above the story. As the number of omitted words increases, the activity gradually becomes a conventional dictation exercise.

In this illustration, the system has randomly determined which words to omit. Teachers can review the system's choices and override them. This is necessary in case, by chance, a proper name or foreign word has been omitted, which users could hardly be expected to guess (e.g., the word *Wwoof* here).

As an alternative to random selection, words of a particular part of speech can be omitted. FLAX determines parts of speech using a computer algorithm, which is not guaranteed to be completely correct – but again, the teacher can override its choices if necessary. The second illustration, based on a different article, focuses on verbs, and the learner must enter the correct verb with the correct form. In this case the teacher did not provide any hints.

Again, the *Summary report* button at the top right gives the start time, end time, and the words that have been correctly guessed. In the Moodle version, a report is produced that shows, for each user, the words that were correctly answered, and the order in which they were answered. In addition, if the exercise is graded, the results are recorded in the Moodle gradebook.

The Moodle version can operate in "group mode." Here, FLAX updates every student's screen any time someone in the class fills in a gap. A scoreboard at the bottom of the screen shows the top three students, and mousing over it shows how everyone is doing. This spurs competition – to score well, students must work fast! In group mode, participants can type messages to one another using a *Chat to others* button that appears beside the *Summary report* button at the top right.



Designing and reviewing a Word Guessing game

Teacher's interface for Word Guessing

To create a Word Guessing game, first select an article (if you like, you can specify a difficulty level first). You can either choose the words to omit based on the gap size, and specify the gap size, or choose certain parts of speech. In the latter case you can select one or more of the following:

- Verb.
- Noun.
- Adjective,
- Adverb.
- Preposition, and
- Determiner.

You can also choose what kind of hint to give:

- None
- First letter.
- First and last letter.
- Word list (at the top of the screen),
- · Word list and first letter, and
- · Word list and first and last letter.

You can also choose whether to provide the audio version of the document (if any).

If you are using Moodle, you can choose Individual mode or Group mode.

Finally, you can review and override the system's choices about which words to omit. It's a good idea to do this, otherwise you may be setting your students the impossible task of guessing obscure proper nouns, or exposing them to errors made by FLAX when identifying parts of speech.

To review and modify the game, click the *Review* button at the bottom of the form. The game appears below, as shown in the accompanying illustration (under the heading "Adventure sports," which is the chosen article). Click any gap to return the word to the text. If you change your mind, click the word again to reinstate the gap.

If you are using stand-alone FLAX, you can make a printable version using the *Print* button, which produces a paper form for students to complete offline.

How to play Summary report

, !

many migrants to new zealand believe that they should concentrate on learning as much english as possible as quickly as possible

they believe this will help them to settle more quickly into their new country it seems to be even more important when they have children to encourage the children to learn english quickly it is true that it makes resettlement easier it is easier to do everyday things if you can understand and be understood by those you need to deal with it is easier to get employment it is easier for children to succeed in a new education system it is easier for tertiary study

many academics believe that language is culture and culture is language \mathbf{A} migrant wanting to settle permanently in an english-speaking country will need to learn english to learn the culture of that country

A Punctuation and Capitalization exercise

4.1.6 Punctuation and Capitalization

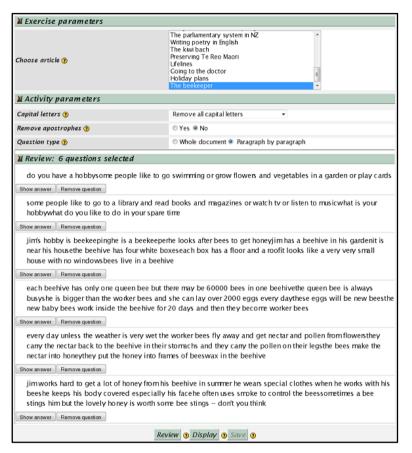
Punctuation and Capitalization exercises ask the user to place punctuation marks in the appropriate positions, and to put capital letters on words that need them. In order to do this, students need to understand the flow of text and identify individual sentences. FLAX uses the most common punctuation marks, namely "." (full stop, or period), "," (comma), "!" (exclamation mark), and "?" (question mark), and also, optionally, apostrophe.

Punctuation and capitalization are important in writing. Punctuation marks indicate the structure and organization of written language, as well as intonation and pauses when reading aloud. Capitalization helps readers find information more quickly.

These exercises help students learn how to use punctuation correctly, how to distinguish one sentence from the next, and how to indicate a break or pause within a sentence. Students also learn about the rules for capitalization.

The illustration is taken from the "Why do you need to keep your first language" article in *The Best of Password* collection. You can select the punctuation marks at the top with your mouse, drag them along the text word by word, and drop them wherever you want. If you change your mind, you can remove the mark by clicking on it.

When you mouse over a letter in the sentence, it turns temporarily into a large capital letter, and if you click it, it remains capitalized. In the illustration, the user has moused over the "A" in the phrase "A migrant wanting to settle..." (near the end), and the letter is temporarily enlarged; if the player were to click, it would turn into an ordinary capital "A". In this case that would be the right thing to do, because this is the first word of a sentence. In addition, a period should be added after the last word, *country*, to terminate the sentence.



Designing and reviewing a Punctuation and Capitalization exercise

Teacher's interface for Punctuation and Capitalization

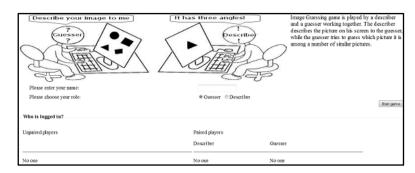
The Punctuation and Capitalization exercise options are similar to those of other exercises. The illustration shows the *Edit exercise content* screen in Moodle. First, you choose the article (or articles) from which the text should be taken. Then, you set the three *Activity parameters*.

You can choose to remove all the capital letters, only sentence-initial capitals, or no capitals at all – in which case the exercise will simply test punctuation. You can also decide whether or not apostrophes should be removed.

Finally, you can decide whether, when the exercise is presented, the paragraphs of the documents are shown individually, or whether each entire document is shown at once, as a whole.

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In the *Review* panel you can remove individual paragraphs, or inspect the answer first before deciding whether or not to keep a paragraph.



Signing in for Image Guessing



What the describer sees



What the guesser sees

4.1.7 Image Guessing

Image Guessing is a cooperative game based on an image collection. It involves two players, called the *describer* and the *quesser*.

The describer sees a single image, while the guesser sees thumbnails of all images in the collection. The quesser's aim is to determine which is the one the describer sees.

Players communicate through chat; the guesser can ask questions about which image it is, and the describer can type what it is that they see. To make themselves understood, they must express ideas unambiguously. Because they cannot use gestures or body language to hint at what they mean as in face-to-face communication, students deploy more complex structures, produce longer sentences, and order the words correctly.

Guessing games are suitable for all ages and levels, and can be fun for students. This one helps to improve communication skills, descriptive power, writing ability, and domain-specific vocabulary. Teachers can build an image collection in a particular domain that will reinforce the kind of vocabulary they are trying to teach.

The first illustration shows what learners see when they enter the game. The system pairs up students on a first come, first served basis. At any time there may be several pairs of students playing, and one or more "singles" waiting to play. Students choose whether to sign up as guesser or describer. If there is another single who has chosen the opposite role, the game starts immediately. Otherwise the student receives a message asking them to wait until someone else enters the game and chooses the opposite role.

The game begins as soon as a match is made. In the example depicted, the describer and guesser see the second and third image respectively. They type into the text box (beneath the list of messages), and when they press *return* the new message appears on their partner's screen as well. In the conversation shown, Ian (the describer) asks his partner Shaoqun (the guesser) what she sees. She responds that her image is a yellow pattern on a gray background. Ian responds that he can see lots of those, and requests more information. Shaoqun is then pressed into describing the image in more specific terms.

All the while, the clock is ticking (shown towards the top left of each image). The game ends when the guesser clicks the correct image, or when time expires.



Designing an Image Guessing game

Teacher's interface for Image Guessing

For Image Guessing, the teacher selects the images that will be used in the game and determines how much time to allow when it is played.

The difficulty of the exercise is governed by the content of the particular image collection used, which teachers can build for their student population. Simple images – for example, fruit, animals or cartoons – are easy for lower-level students to describe. More complex ones – for example, landscapes or abstract patterns – are more suitable for advanced students.

Teachers with classes of different abilities can build a single collection containing images of different kinds and assign them appropriate difficulty level metadata (*Advanced* and *Intermediate* in the illustration). This metadata can be used to determine which images are selected for a particular game. Alternatively, the teacher can click individual images to deselect or select them.

4.2 Activities on collocations

Collocations are very important in language learning. Novice text tends to be cumbersome and error prone because of insufficient collocation knowledge. Learners struggle to speak fluently because they have to laboriously put sentences together word by word. Students with good ideas often lose marks in writing assignments, because they don't know the most important collocations of a keyword that is central to their topic. For example, in an essay on "Smoking" one student wrote the smokers who rely on cigarettes and have to smoking everyday instead of using phrases like heavy smoker or addicted to smoking. Collocation knowledge affects both accuracy and fluency, and is important for all learners – particularly those who strive for a high degree of competence in a second language.

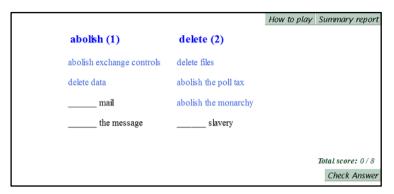
What exactly is a collocation? According to linguists, it is a conventionalized word sequence – a phenomenon found in any natural language. For example, we say *heavy smoker* instead of *strong smoker*, or *strong tea* instead of *powerful tea*. Such sequences are referred to by various names: lexical items, prefabricated chunks, routinized formula, formulaic sequences, conventionalized language forms, fixed or semi-fixed expressions, and so on. From a statistical point of view the term denotes two or more consecutive words with a special behavior – they occur together with a frequency that is greater than random. From our point of view as language teachers, collocations are simply "word combinations that I think my students would not expect to find together." FLAX identifies as collocations all high-frequency word combinations that follow one of these five syntactic patterns: verb + noun, adjective + noun, noun + noun, noun + of + noun, and preposition + noun.

FLAX provides strong support for collocation learning. It contains a massive collocation database that is built from a large corpus of text (see Chapter 7). It includes activities that make collocation learning fun and dynamic:

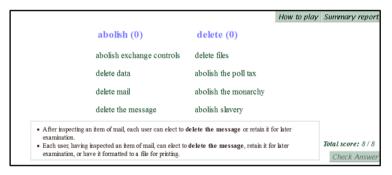
- · Related Words,
- Collocation Matching,
- · Collocation Dominoes,
- · Collocation Guessing, and
- Completing Collocations.

In each case, teachers choose the words they want their students to work on and FLAX automatically retrieves their most common collocations from the database for selection by the teacher. Related Words and Collocation Matching help students differentiate words with similar meaning and usage. Collocation Dominoes and Collocation Guessing help extend learners' collocation knowledge. Unlike the other activities, Completing Collocations uses collocations generated from a document collection to facilitate topic specific collocation acquisition.

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A Related Words exercise



Checking the answer and learning the context

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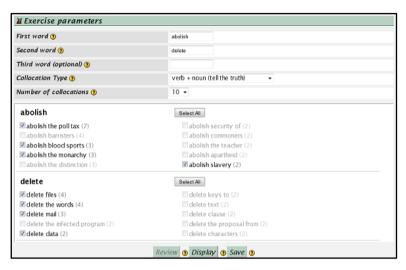
4.2.1 Related Words

Language learners tend to rely on dictionaries to distinguish different shades of meaning of similar words such as *speak* and *tell*. However, it is time-consuming and frustrating to have to study alternative definitions and compare them, and dictionaries do not always provide sufficient examples or adequate explanation.

The Related Words activity helps learners distinguish between commonly confused words. Teachers select two or three related words that they wish to target, and the system retrieves the collocations of these words from the British National Corpus, a standard corpus of British English.

The words abolish and delete have been chosen for the illustration. The top screen shows the activity part way though. The learner has completed the phrases delete data, delete files, abolish the monarchy, abolish the poll tax, and abolish exchange controls. Three incomplete phrases are left: the message, slavery, and mail; and the header words at the top of the columns show that there remains one instance of abolish and two of delete (these are the numbers in brackets). The player uses the mouse to drag a header word and drop it into the appropriate phrase. To undo a match, click the phrase.

When the player clicks *Check Answer*; the correct collocations turn green and incorrect matches revert to the original. Green collocations can be clicked to see examples in context, taken from the British National Corpus. Here the correct phrase *delete the message* has been clicked to show two sentences that contain it; the phrase itself is in bold text.



Designing a Related Words exercise

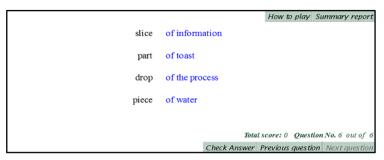
Teacher's interface for Related Words

Creating this and other collocation activities differs from the ones we have seen earlier because the material does not come from a particular article or document collection. The teacher specifies two or three target words and desired syntactic pattern, and FLAX retrieves collocations from the database and displays them in descending order of occurrence frequency for the teacher to make selections.

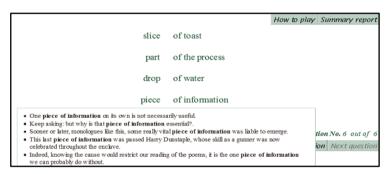
The illustration uses the same words as above, *abolish* and *delete*, which have similar meanings, but are used in quite different contexts. Collocations are distinguished by their syntactic type, and the type <u>verb + noun</u> has been chosen. The alternatives are the other syntactic patterns mentioned earlier, namely <u>adjective + noun</u>, <u>noun + noun</u>, <u>noun + of + noun</u>, and <u>preposition + noun</u>. Our two chosen words are unambiguously verbs, and none of these patterns would return any collocations, but it is often the case that the same word appears in collocations of different types – particularly if it is a noun.

After clicking the *Review* button you are shown 10 collocations of each word, as in the image. The number in brackets indicates the frequency of the collocation in the corpus. Your job is to use the check boxes to select a few that are appropriate for your students. Initially all collocations are selected, and you can click to deselect them individually. Alternatively, click the *Deselect All* button and then select the ones you want.

You can click any phrase to view the sentences that contain it, which will help you decide on the best ones to choose. These are the examples that your students will see if they request them, as for *delete the message* in the previous section.



A Collocation Matching exercise



Examples of the collocation piece of information from the British National Corpus

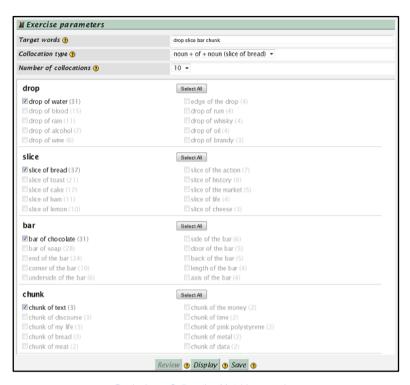
4.2.2 Collocation Matching

The Collocation Matching activity takes several words and selects one collocation (or perhaps a few) for each word, generally with the same syntactic collocation type. This is similar to the previous activity, Related Words; the difference is that Collocation Matching is intended for use with several words with typically just one collocation for each, whereas Related Words is intended to focus on two (or three) words, with several collocations of each. Collocation matching is a popular practice in language classrooms; the aim is to help learners distinguish words with similar meanings, or words that have the same usage.

For example, the verbs *condense*, *shorten*, *compress*, and *abbreviate* all mean "to make something less, shorter or smaller," but are used in different ways. In this activity, phrases like *condense the story*, *shorten the time*, *compress the video*, and *abbreviate certain words* might be presented, so that players learn to identify the difference between these verbs in terms of their collocations.

Another example is shown in the accompanying illustrations. The quantification words *slice*, *part*, *drop*, and *piece* have been split from their associated nouns and shuffled. The player's task is to match the left-hand quantification words with their right-hand nouns by dragging and dropping them in a way that creates the strongest partnership. Just as for the Related Words activity, players can check the answer, and click any correct match to read sample sentences in the British National Corpus.

When you have completed the exercise, you can click on any of the phrases to see sentences that include that phrase. For example, in the lower illustration, the user has clicked *piece of information*.



Designing a Collocation Matching exercise

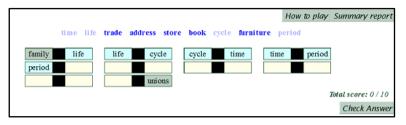
Teacher's interface for Collocation Matching

The only real difference between Collocation Matching and Related Words is in how they are intended to be used, and the student interface reflects the differing usages.

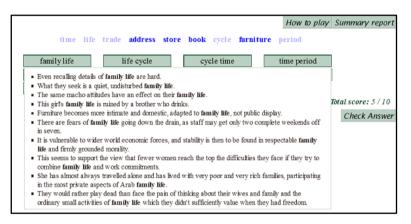
The teacher's interfaces are identical. However, the intention of Collocation Matching is for the teacher to type in a list of several target words instead of just two or three.

As before, one suitable collocation type is chosen. For the example words drop, slice, bar, and chunk, which are quantification words, $\underline{noun + of + noun}$ is an appropriate target pattern.

There are several collocations for each word. With the words *drop*, *slice*, *bar*, and *chunk*, the single most frequent collocation of each was chosen for the first example shown earlier: *drop of water*, *slice of bread*, *bar of chocolate*, and *chunk of text*. It is probably best to follow this strategy of selecting just one collocation for each word. Otherwise, repeated target words will occur on the left-hand column of the learner interface, as in the second example shown earlier, and the exercise will be more difficult.



A Collocation Dominoes exercise



Examples of the collocation family life from the British National Corpus

4.2.3 Collocation Dominoes

English word classes are incredibly flexible: many verbs can be used as nouns and many nouns can be used as adjectives. Even advanced learners often feel uncomfortable using certain word combinations, particularly noun+noun collocations. Collocation Dominoes is a language game designed to help learners notice the use of these fixed expressions.

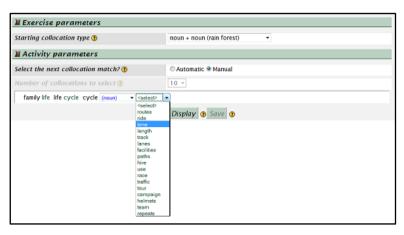
In Collocation Dominoes, the last word of one collocation becomes the first word of the next:

family life - life cycle - cycle time - time period ...

The first illustration shows an incomplete game comprising <u>noun + noun</u> collocations with the starting word "family". The words that fill the blanks are at the top, in blue, and the learner proceeds by dragging one of them with the mouse and dropping it into a box. According to the rules of dominoes, adjacent pairs of boxes must contain the same word – so when the user places a word in one, the system automatically puts it in the other. Moves can always be undone by clicking a word in a box.

When the user clicks *Check Answer*, any incorrectly formed collocations revert to empty boxes, and correct ones can be clicked to view sample contexts in which they occur.

You can click on any collocation you have got correct to see sentences that use it. For example, in the bottom image the user has clicked a collocation box that shows family life.



Designing a Collocation Dominoes exercise

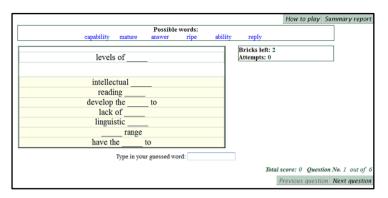
Teacher's interface for Collocation Dominoes

To design a Collocation Dominoes game, you need to choose a starting collocation type from four possible syntactic patterns, $\underline{\text{noun} + \text{noun}}$, $\underline{\text{noun} + of + \text{noun}}$, $\underline{\text{verb} + \text{noun}}$, and $\underline{\text{noun} + \text{verb}}$. These patterns have been chosen because they make it relatively easy to form a set of dominoes.

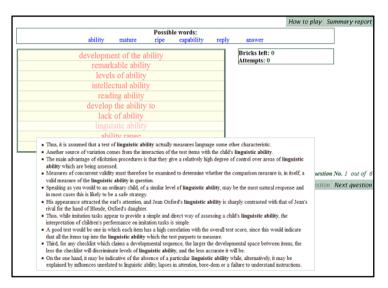
Next you use the drop-down menu to determine how many collocations FLAX should consider when selecting each domino. Collocations are ordered based on frequency, and in most cases the top 10 most frequent collocations should be sufficient. The number is a compromise; if the game includes low frequency collocations, it may be too challenging for learners, whereas if the number of possible choices is small, FLAX may be unable to create a game.

FLAX is able to build up a set of dominoes automatically; you need only specify the starting word and the number of dominoes. For example, in the illustration the teacher has entered the starting word *family*, and FLAX has come up with the collocations *family life* and *life cycle*. If you are dissatisfied with any choice it makes, you can manually re-select the collocation type, or the collocation word, from a drop-down menu. The teacher here is selecting *time* as the word to follow *cycle*. If you do this, any subsequent collocations will disappear (because the next collocation depends on the previous one), and FLAX will recompute them.

If you prefer, you can choose to create a Collocation Dominoes game manually. In that case, you can select the syntactic pattern and content word for every domino.



A Collocation Guessing exercise



Checking the answer and learning the context

4.2.4 Collocation Guessing

The renowned English linguist J.R. Firth said, "You shall know a word by the company it keeps," and the objective of the Collocation Guessing activity is precisely that: to let learners try their hand at identifying words from the company they keep. Knowing the collocations of a word is an important aspect of one's vocabulary knowledge.

Here's how it works. The target word is removed from a selection of its collocations, and they are shown one by one to the learner, who must guess the word. For example, given

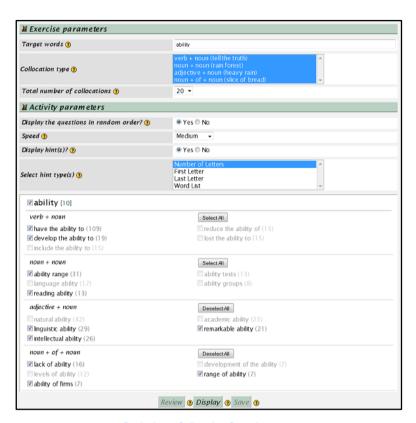
plain, dark, white, bitter, milk, bar of,

learners must guess which word collocates with all of them. The answer is obvious to chocolate lovers!

The interface is inspired by the classic computer game Tetris. A single game comprises a word and a set of collocations. Collocation "bricks" with the target word omitted drop down from the top of the panel, one by one, hard on each other's heels. The player continually enters guesses that can match all the incomplete collocations, and the game ends when the correct word is given – or the collocations run out. Bonus points are awarded depending on how few collocations have been seen before the correct word is entered.

In the top illustration, a few collocates are given - have the ____ to, range, linguistic, lack of, develop the ___ to, reading, intellectual, and levels of. The correct word is ability, and if the player types it the collocation "bricks" will turn green, just as in the other collocation activities. Otherwise, they will briefly turn red, and the game will continue. When time runs out, all the collocations turn red, as shown in the last image.

Both green and red collocations can be clicked to view more contexts. Here, *linguistic ability* has been clicked to show ten examples of its use.



Designing a Collocation Guessing game

Teacher's interface for Collocation Guessing

Teachers have a great deal of flexibility in designing a Collocation Guessing game.

You can choose any noun, verb or adjective as the target word. There is no limitation on the number of words: FLAX will make a separate exercise for each one.

For the type of collocations, you can select any of the syntactic patterns <u>verb + noun</u>, <u>noun + noun</u>, <u>adjective + noun</u>, and <u>noun + of + noun</u>, and you can select more than one of these in the usual way.

The dropping speed can also be adjusted from very slow to very fast.

Four types of hints are available to choose from, and you can select more than one of them. The *Number of Letters* hint will display the target word as dashes, where the number of dashes corresponds to the number of letters in the word. The *First Letter* and *Last Letter* hints will display the first or last letter of the target word. The *Word List* hint will display all the target words at the top of the panel, as in the example given earlier, where the target words are *answer*, *ability*, *capability*, *mature*, *reply*, and *ripe*.

On the facing page, the target word *ability* has been typed and all four syntactic patterns have been specified. This generates a total of 20 collocations, shown at the bottom and grouped according to their syntactic pattern. It is up to the teacher to decide which of these expressions are most appropriate for incorporating into a particular game.

Water sports are very popular. The many fast-flowing rivers the opportunity for rafting — particularly in the Bay of Plenty and around Queenstown. Trips can be from a few hours to several days, and a trained guide stays with the group to ensure safety and provide all the necessary equipment.

Total score: 0 Question No. 2 out of 5

Check Answer Previous question Next question

A Completing Collocations exercise

A noun + noun Completing Collocations exercise

For example you might help to cook dinner or do the washing up. You need to understand instructions in English and to have enough English to _______ to the people you are staying with.

There is fresh healthy food for all these people in New Zealand shops. All food has a label, to ______ the buyer what is in the food.

I feel very shy. My goal this year is to improve my _____ and listening. I will do this by talking to my neighbour every day.

Completing Collocations: speak vs. tell

4.2.5 Completing Collocations

Completing Collocations is like Word Guessing: certain words are omitted from a document and users fill in the gaps. However, whereas in Word Guessing the words are omitted either randomly or according to their syntactic type, Completing Collocations is more sophisticated; the missing words are chosen from collocations that have been identified in the document. FLAX chooses sentences, and highlights (in blue) selected collocations. If the paragraph contains preceding and following sentences, they are shown as well, to provide context.

The first two illustrations focus on the "Adventure sports" article. The top one includes collocations of all types. This particular question shows a $\underline{\text{verb}} + \underline{\text{noun}}$ combination – the answer is $\underline{\text{provide the opportunity}}$ – but other questions will involve different collocation types.

Many teachers will prefer to focus on certain types of collocation. In the second illustration, only <u>noun + noun</u> collocations appear. This question shows *seat belt*; all other questions in this exercise will also involve noun + noun combinations.

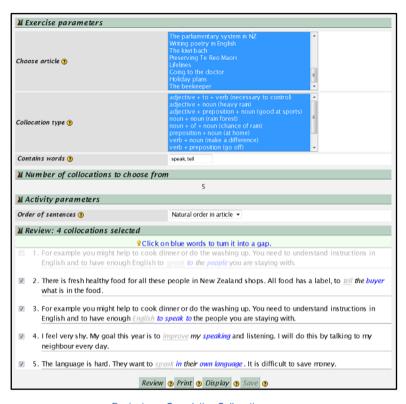
It is instructive to focus on sets of words that share similar meanings but have different usage. Learners are frequently confused by common words – *make* and *do*, *see* and *look* – and find it hard to understand their differences by consulting dictionaries. For example, one dictionary defines *speak* and *tell* as

- Speak say something in order to convey information, an opinion, or a feeling
- Tell communicate information, facts, or news to someone in spoken or written words.

No wonder learners do not know which to use! Studying collocations is an effective way to help learners distinguish a word's various shades of meaning.

The bottom illustration shows three questions from a third exercise that addresses precisely this distinction between *speak* and *tell*. These sentences, all containing these two words or their derivatives, are chosen from all the articles in the *Best of Password* collection.

Another exercise might focus on finding the right verb for a noun. In the teacher's interface described next, collocations can be restricted to those that contain a certain word, and also by syntactic pattern, so one could design a $\underline{\text{verb} + \text{noun}}$ activity for a particular noun. As usual, the teacher can vet the collocations identified by the system to discard ones that are unsuitable.



Designing a Completing Collocations game

Teacher's interface for Completing Collocations

Completing Collocations exercises are created by filling out a form, just like the other language activities. You can select a particular article or set of articles, and a particular collocation type or types. You can specify a word or words that the collocations should contain. The *Number of collocations to choose from* field updates automatically when these parameters are entered.

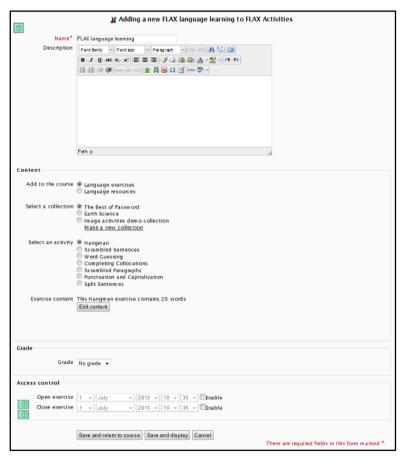
In the illustration, 897 collocations were identified initially for all the documents in the *Best of Password* collection, but this immediately reduced to five when the target words "speak" and "tell" were entered. For such a specific exercise it might have been better to give the teacher more choice by basing it on a larger collection.

The *Review* button shows the collocations that the system has selected. In general, a single sentence may contain several collocations, each of which involves more than one word. FLAX generates all the examples but deselects, and grays out, subsequent ones involving the same sentence. You can reselect these individually if you wish; you can also click the blue words to turn them into gaps too.

In the illustration, the five *speak* and *tell* collocations are being reviewed, and one has been grayed out by the system because its sentence contains two collocations – *English to speak to* and *speak to the people*. (Usually there are far more collocations, many of which are grayed out.) All the sentences can be selected or deselected using the tick boxes.



A FLAX exercise in a Moodle course



Adding a FLAX exercise to a course

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4.3 Language activities in Moodle

With stand-alone FLAX, language activities are accessed through the collection itself. However, if you are using Moodle, the activities are incorporated directly into the course. They appear as a resource in the course, just like any other resource, but preceded by the FLAX logo M. The accompanying image (at the top) shows a fragment of a course that contains a FLAX activity called *Scrambled Sentences exercise*. Students click the link to play the game.

To add a language activity to a course, turn editing on and use the standard Moodle *Add an activity or resource* menu. Select *FLAX language learning* and click *Add*.

This takes you to the page shown opposite, with *Language exercise* selected, where you can select a collection and then an activity type that belongs to the collection. (The other option is *Language resource*, which is described in Chapter 6.) Different activities may be associated with different collections; for example, the *Image Guessing* activity is not associated with the *Best of Password* collection because the images there are not appropriate.

Having selected a collection and an activity type, you can click *Save and return to course*, at the very end of the form. This creates an exercise with default parameters and puts it into your course.

Probably, however, you will want to configure the activity first. In that case, click *Edit content*, which takes you to the *Edit exercise content* page described in the sections above that allows you to set the parameters for the exercise, exactly the same as in stand-alone FLAX.

5. More about collections

We have seen how FLAX can present language activities to students to enhance their language learning. It also provides different ways of looking at the information in the document collection itself. We saw some of these in Chapter 2, like searching and browsing. Now we take a more extensive look at what FLAX collections can provide.

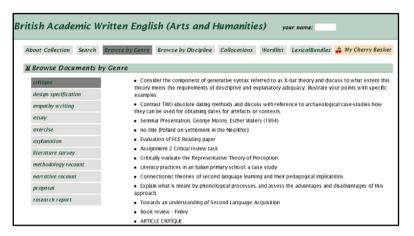
This chapter uses a different and more extensive document collection: the Arts and Humanities collection of the British Academic Written English corpus, which contains 700 pieces of high-standard student writing in the area of arts and humanities. This includes the disciplines of Archaeology, Classics, Comparative American Studies, English, History, Linguistics, and Philosophy. Texts are categorized into 13 genre types: case studies, critiques, design specifications, empathetic writing, essays, exercises, explanations, literature surveys, methodology descriptions, narratives, problem questions, proposals and research reports. These classifications constitute "metadata" for the collection, which Greenstone, the digital library software that underpins FLAX, is capable of incorporating and using for browsing. You can see the collection at the FLAX website. 9

It is also possible to create your own collection, based on your own documents. Teachers often want to use their own linguistic material in their courses. FLAX makes it easy to build small collections out of any documents – including images and audio – that you have available electronically. There are other ways of building large collections, but we won't describe those here. Greenstone is capable of handling vast collections of all sorts of information.

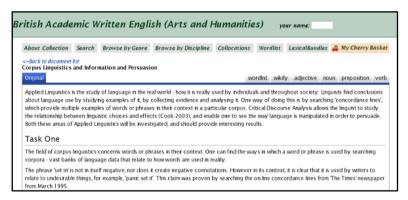
Teachers may want to create their own collections of documents for reasons other than language learning. After all, libraries have always been central to education. It is surprising, and perhaps a little disappointing, that digital libraries do not usually seem to play a central role in computer systems for educational support. FLAX allows you to organize readings and provide students with integrated access to them. If appropriate, they can also serve as a source of material for language learning.

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⁹ http://flax.nzdl.org/greenstone3/flax?a=fp&sa=collAbout&c=BAWEAH&if=flax



Main page of the Arts and Humanities collection



A sample article in the collection

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5.1 Exploring articles

Here is the main page of the Arts and Humanities collection. Users can seek documents, sentences, paragraphs and collocations containing particular words or phrases; they can browse documents by genre and discipline, collocations by word, academic words, and lexical bundles.

The *Browse by Genre* button has been clicked, which brings up (on the left) the 13 genre types mentioned above. The first type has been selected, which brings up (on the right) the titles of all articles classified as *critique*. Users can select a different discipline (the *Browse by Discipline* button), or search for articles containing a particular word (the *Search* button). These are standard Greenstone facilities.

Also shown is an article in the collection, entitled "Corpus Linguistics and Information and Persuasion," which can be accessed by selecting *Browse by Genre* and then *exercise*, or alternatively by selecting *Browse by Discipline* and then *Linguistics*.

Original wordist wikify adjective noun preposition verb

Applied linguistics is the study of language in the real world - howr it is really used by individuals and throughout society. Linguists find conclusions about language use by studying examples of it, by collecting evidence and analysing it. One way of doing this is by searching concordance lines, which provide multiple examples of words or phrases in their context in a particular corpus. Critical Discourse Analysis allows the linguist to study the relationship between linguistic choices and effects (Cook 2003), and enable one to see the way language is manipulated in order to persuade. Both these areas of Appled Linguistics will be investigated, and should provide interesting results. Task One

The field of corpus linguistics concerns words or phrases in their context. One can find the ways in which a word or phrase is used by searching corpora, wast banks of language data that relate to how words are used in reality.

The phrase set in its not in itself negative, nor does it create negative connotations. However in its context, it is clear that it is used by writers to relate to undestrable things, for example, 'pank: set it.' This claim was proven by searching the on-line concordance lines from The Times' newspaper from March 1995.

Out of the nine uses where 'set in' is used as a verb and particle, it was found that eight have negative prosody - the phrase collocates with words with unpheasant connotations. For example: abstract nouns such as 'pamsc,' 'excession', 'complacency,' tre-diness', 'disappointment' and 'bues' are used in terms of what has 'est in'. The nouns which have 'set in' in this particular croppus are 'infection' and 'rot, 'obt considered highly undestrable. The remaining example is, 'But from the 1830's a reaction set in'. This does not indicate whether or not the phrase has a negative prosody as not enough information is shown in the concordance line- a possible problem in this field. Although it would not be grammatically average to place a word such as 'joy' with 'set in', but using the corpus it is clear that in reality it ends to be used with words with negative implications.

By using a different type of corpus, the previous conclusion about the negative prosody of the phrase 'set in' was confirmed: The fictional corpus

Wordlist view, with academic words highlighted

You may be interested in analyse, analyze, analy

Result of clicking the word analysis

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5.2 Wordlist view

The Wordlist view lets users analyze the range of vocabulary used in the article.

In the accompanying image, the academic words, taken from a standard 570-word list used in language teaching, are highlighted in blue. These include *individuals*, *conclusion*, *evidence*, *analysing*, *context*, *analysis*, and so on. Clicking a highlighted word leads to a page that shows all sentences in the collection containing that word. The second illustration shows the result of clicking the word *analysis*. As well as showing the sentences (668 of them), the system suggests, at the top that the user may also be interested in related words: *analyse*, *analyze*, *analytical*, *analytic*, *analysis*, *analyst*, *analytically*. Clicking the little green arrow shown after each sentence pops up the paragraph in which that sentence appears, shown in a gray box.

The proportion of academic words in this article (13%) is given beside the dropdown box above the text in the upper image (showing "academic words"). This box provides other options: the most frequent 1000 and 2000 words, also taken from standard wordlists; other words; and keywords. By changing this, users can easily ascertain that 59% of the words in this article are in the top 1000 words, which is increased by a further 5% by extending this to 2000 words.

The keyword view shows keywords in the article. For this article, it highlights the words *linguistics, concordances, phrases, corpus, persuade, prosody,* and so on. In keyword view, a slider appears beside the dropdown that the user can manipulate to reveal more words. Moving it to the right makes the system less selective, highlighting more words; conversely, moving it to the left reduces the number of highlighted words. At the very left end only one keyword ("CSA", an acronym for Child Support Agency) is given, while at the right end all content words are displayed.

Keywords are calculated by a heuristic method based on word frequency. For each content word, a score is calculated that reflects how important the word is to the document, based on the number of times it occurs in the document (which increases the score) and the number of times it occurs in the collection as a whole (which decreases it). For example, the word "CSA" receives the highest score for this article, because it occurs 11 times and does not occur in any other article.

Original wordlist wikfy adjective noun preposition ver Applied Linguistics is the study of language in the real world about it is really used by individuals and throughout society. Linguists find conclusions about language use by studying examples of it, by collecting evidence and analysing it. One way of doing this is by searching 'concordance lines', which provide multiple examples of words or phrases in their context in a particular corpus. Critical Discourse Analysis allows the linguist to study the relationship between linguistic choices and effects (Cook 2003) and enable one to see the way language is manipulated in order to persuade. Both these areas of Applied Linguistics will be investigated, and should provide interesting results. Task One The field of corpus linguistics concerns words or phrases in their context. One can find the ways in which a word or phrase is used by searching corpora - vast banks of language data that relate to how words are used in reality. The phrase 'set in' is not in itself negative, nor does it create negative connotations. However in its context, it is clear that it is used by 🗵 /en by searching the on-line concordance lines from writers to relate to undesirab Collocation Notepad The Times' newspaper from negative connotations Out of the nine uses where set in is used as a verb and particle, it was found that eight have negative prosody - the phrase collocates with words with unpleasant connotations. For example: abstract nouns such as 'panic', 'recession', 'complacency', 'tredness', 'disappointment' and 'blues' are used in terms of what has 'set in'. The nouns which have 'set in' in this particular corpus are 'infection' and 'rot', both considered highly undestrable. The remaining example is, 'But from the 1830's a reaction set in'. This does not indicate whether or not the phrase has a negative prosody as not enough information is shown in the concordance line - a possible problem in this field. Although it would not be grammatically wrong to place a word such as 'joy' with 'set in', but using the corpus it is clear that in reality it tends to be used with words with negative implications By using a different type of corpus, the previous conclusion about the negative prosody of the phrase 'set in' was confirmed: The fictional corpus of the language used in 'Sherlock Holmes Stories' provided two results of 'set in'. The phrase collocates with 'sharp frost' and 'equinoctial gales', both undesirable types of weather. When considering the phrase 'resulting in', the words that follow tend to have negative company. Grammatically, it does not have to be used in such a way, so I searched The Times' newspaper March 1995 corpus to find its uses and prove if this claim is correct. The nine concordance lines shown in the corpus support this claim to an extent; for example, bersistent headache, drastic re-think; 10 bookings

Collocations, highlighted in the Collocation view



Collocations for the word connotation

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5.3 Collocation view

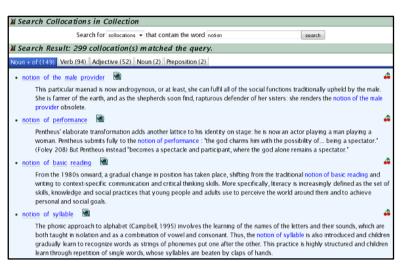
Once an article has been reached, the collocation view is accessed by clicking one of the adjective, noun, preposition and verb tabs shown in the sample article earlier (see *Exploring articles*, above). FLAX identifies lexical collocations with one of the following structures: verb+noun, adjective + noun, noun + noun, noun + of + noun, and preposition + noun. Each tab shows collocations starting with that word type; for example, the *adjective* panel hosts collocations starting with an *adjective*.

Collocations are highlighted in the text, to help students notice them and study their context. In the example shown, collocations related to the subject of the article, corpus linguistics – linguistic choice, negative connotation, unpleasant connotation, abstract nouns, negative prosody, neutral company, persuasive language, interpersonal function, attributive function, linguistic interaction – stand out from the surrounding text. The collocation negative connotations has been clicked to bring up a superimposed popup with two small icons. The underlined words here, negative and connotations, are hyperlinked to entries that involve those words in an external collocation database, built from all the written text in the British National Corpus.

Users can easily study further collocations related to these two words. For example, clicking connotation generates a further popup, shown below, that lists sexual connotations, different connotations, social connotations, pejorative connotations, etc., along with their frequency in that corpus. Likewise, clicking negative would show collocations such as negative attitudes, negative side, negative aspects.

The panel shown helps users learn about the word *connotation*. They can see samples of these collocations in context by clicking them here, which shows relevant extracts from the British National Corpus – for example, clicking *sexual connotations* brings up ten sentences that use this phrase.

Returning to the top image, clicking the first icon in the popup (the "web" icon) generates a page containing sample texts retrieved by a live Web search. The system connects to a search engine, uses the collocation as a phrase query, retrieves sample texts, parses them, and displays extracts that contain the collocation. However, the text, being extracted from individual Web pages, is often unclean, incomplete and repetitive. The function of the second icon in the popup (the "cherries" icon) is explained in Section 5.5.



Exploring collocations associated with the word *notion*

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5.4 Searching and browsing collocations

Users can investigate collocations by searching or browsing for partners of a particular word. As well as the standard search function of locating articles, sentences, or paragraphs that contain a particular word or words, the collection's "Search" button allows users to search collocations in the collection. The accompanying image shows the result for the word notion, which returns nearly 300 collocations. The first four can be seen here, along with their contexts. They are grouped under tabs that reflect the syntactic roles of the associated word or words, Verb, Adjective, Noun, Preposition, and Noun + of (shown). The dominant pattern for our chosen word is notion + of (half the total of 300), as in notion of performance, notion of syllable, notion of time. The next most dominant is verb + notion (nearly a third of the total): solidifies the notion of, renders the notion of, advocate the notion of, and so on.

Collocations can be browsed as well as searched, using the Collocations button on the collection's home page and article pages (shown beside *Exploring articles*, above). Then, an alphabetic selector leads to the word in question. Clicking the letter *n*, followed by the word *notion*, obtains the collocations shown opposite.



Collocation "cherry picking" interface



One student's personalized cherry basket

5.5 Cherry picking

Collocation knowledge is difficult to acquire simply because there is so much of it. Native speakers carry hundreds of thousands of lexical chunks in their heads, ready to draw upon in order to produce fluent, accurate and meaningful language. This presents language learners with a daunting challenge.

To help them, learners are often encouraged to collect their favorite collocations for possible use in later writing. FLAX provides a facility for "picking" favorite collocations and saving them in a kind of notebook. We use the metaphor of cherries because, like collocations, they are tasty fruit that come in small groups. Cherry picking is initiated by clicking the "cherries" icon that follows collocations shown in earlier illustrations. Students can pick collocations from an article, or from search results or browsing results pages.



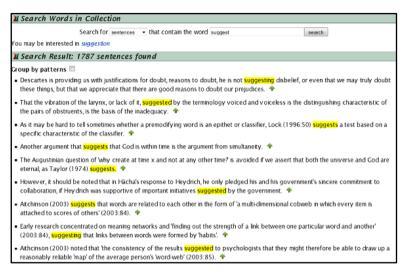
This icon beside a collocation adds it to the user's cherry basket.

In the illustration here, the collocation *negative connotation* has been chosen. In the upper image it is being added to the student's personal cherry basket. If desired, the basket can be organized into categories, and new categories can be defined when picking a collocation. Or, if the user prefers, the basket can be left unorganized.

The basket's contents are shown when the user clicks *My Cherry Basket*, on the right of the control bar near the top of the screen. The bottom image shows a student's cherry basket, displaying collocations that have been picked and placed in two categories: *theory* and *role*. The usual options are provided for organizing the basket: a cherry can be dragged into the "folder" icon beside another category, collocations can be deleted (with the "x" symbol), and category names can be altered (with the edit icon). The web icon on to the right of each collocation retrieves further examples from the web. A "print friendly" version of the basket can be generated, which is also suitable for sharing by email.

The cherry basket, and indeed FLAX's entire collocation facility, is particularly useful when learning English in a certain domain, like geography, management, or in a genre like academic writing. The teacher creates a collection of documents in the domain, perhaps from Wikipedia or some other public source. Students study them, investigate the collocations they contain, and choose ones they like for use in future writing exercises. Instead of simply mastering words – pronunciation, forms, and meanings – students learn the contexts in which they are used, which helps them combine words into apt phrases, sentences and texts.

Even for general writing, collocations help students express themselves more aptly and precisely. For example, learners, especially lower level ones, tend to overuse common words like *very* because of their limited stock of adverb modifiers. FLAX enables them to find modifiers that are more suitable for use with particular adjectives or verbs, such as *completely, physically, mentally, emotionally* with the word *exhausted* and *heavily, strongly, deeply, easily, unduly* with the phrase *influenced by*.



Result of searching for sentences containing the word *suggest*

academic Words		▼ 8	ortbyfrequ	uency -										
theory	4	**	1536	evidence	4	**	1229	create	4	813	1188	role	*	818
individual	4	\divideontimes	1038	structure	4	+	1031	period	4	***	1029	process	**	213
approach	4	**	819	context	4	**	735	economic	4	200	728	feature	**	88
site	4	**	706	focus	4	2	699	concept	4	200	699	image	*	818
factor	4	246	672	conclusion	4		668	method	4	20	645	function		818
similar	4	\divideontimes	616	despte	4	\divideontimes	606	aspect	4	**	602	Issue	**	818
contrast	4	*	586	revolution	4	**	586	identity	4	200	584	community	**	819
cultural	4	**	573	source	4	**	561	establish	4	200	559	involve	*	88
interpretation	4	**	526	status	4		522	element	4	248	513	require	•	213
link	4	26	498	notion	4		498	significant	42	88	495	style	4	E19
research	4	26	466	authority	- 4	88	461	principle	42	88	458	define		88
section	-42	36	434	highlight	4	260	434	demonstrate	4	88	431	achieve	4	613
theme	4	96	418	policy	4		409	conflict	4	88	404	maintain	4	88
Illustrate	4		395	challenge	4	66	384	imply	4	66	371	negative	4	818

Academic words in the Arts and Humanities collection

5.6 Exploring words

Searching documents for particular words and phrases is one of the standard functions of digital libraries. However, ordinary library users seek information about the content of articles, whereas language learners want to know about how words are used. The same search mechanism can be applied, but the results need to be displayed in different ways.

FLAX lets users seek documents, paragraphs and sentences containing a particular word, along with its variants. Here we focus on sentence and paragraph searching. The upper image shows the first 9 of the 1800 sentences that contain the word *suggest*; sentences containing the inflected forms *suggesting*, *suggested* and *suggests* are also included. A lemma list containing about 15,000 entries is consulted to recognize inflected forms of a query word. Clicking the "arrow" icon at the end of a sentence pops up the paragraph that contains the sentence, showing its context.

Other terms derived from the query word, in this case the word *suggestion*, are given at the very top of the panel as another possible search. Although *suggest* has only one derived term, there are often several; for example, the query word *important* yields the derivatives *importance*, *importantly*, *unimportant*, and *unimportance*, which are sorted into descending order of frequency in the collection.

Search queries can contain more than one word, in which case sentences are returned that contain all the query terms. For phrase searching, a query can be enclosed by quotation marks; for example, "language learning theory" returns sentences containing this phrase, while language learning theory returns sentences containing these three words.

Users can explore academic words in the collection by clicking the *Wordlist* button on the collection's home page and article pages (shown beside *Exploring articles*, above). This yields the screen shown at the bottom. The words can be sorted alphabetically or by frequency, as here; in either case, frequency in the collection is shown alongside the word.

The "cherries" icons link to the collocations associated with the word, yielding the display described earlier under *Searching and browsing collocations*. The "British flag" icon invokes a search of the British National Corpus, which allows users to examine how the word is used in different contexts. Note that in each of these cases all inflected forms of the word are also included in the search.

M Search Result: 532 patterns found Group by pattern At the beginning (166) In the middle (366) - Atchinson suggests that... (123) - This suggests that... (52) - They suggest that... (38) - Atchinson suggests... (25) - It has been suggested that... (17) - As Halliday suggests... (13) - It is suggested that... (13) - This could suggest that... (13) - The objections suggest that... (12) The objections suggest that ER is mistaken as:it suggests that reality is shaped by our conceptual framework, the thesis of relativism-s true in some non-relativistic sense, the ER collapses into subjectivism and that it cannot evade that there is, after all, an absolute notion of truth

His theory suggested that skilled readers use context to anticipate the words in a text therefore do not need to decode every word.

The results suggested that women were 40% more likely to avoid using the vernacular form, the glottal stop than the men.

Sentences containing *suggest* at the beginning, grouped by pattern

Search Result: 532 patterns found	
oup by pattern 🗹	
the beginning (166) in the middle (366)	
suggest that older adults (104)	
suggesting that (94)	
■ suggest an annual activity (80)	
suggest the origin of (71)	
suggest that we (67)	
suggest that Jones (38)	
Euripides suggests that (35)	
suggested that the number of (26)	
suggesting relatively good hygiene (26)	
suggested that there (20)	
suggesting they have (17)	
suggested that 'an (11)	
suggests a ritual complex (11)	
Colin Renfrew suggested (10)	
as Alba suggests (9)	
It has been suggested that (9)	

Sentences containing suggest in the middle, grouped by pattern

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5.7 Exploring usage patterns of words

On the panel showing the result of searching for sentences containing the word *suggest*, just described, shows, near the top, a *Group by pattern* option, which is turned off by default. This allows users to study word usage by showing salient syntactic patterns that involve it.

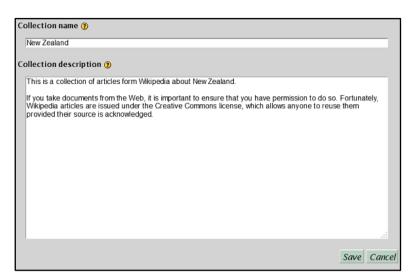
Patterns are grouped by whether the word in question occurs near the beginning of sentences or in the middle, because these provide different views of the word's usage. The upper illustration shows (in the header bar) that 532 patterns are found for the word suggest. They are separated into two tabs, *At the beginning* (166 patterns) and *In the middle* (lower illustration; 366 patterns).

The most common usage of the word *suggest* is to begin sentences of the form *Aitchinson suggests that*, which occurs – with different subjects – in many sentences (123). Clicking the pattern brings these up; they include *Thomas suggests that*, *Archeologists suggested that*, and *Lenin also suggested that*. These all exhibit the pattern: Noun + suggest + that-clause. The next most common sentence-initial patterns, *This suggests that*, *They suggest that*, *Aitchinson suggests*, *It has been suggested that*, *It is suggested that* and so on, demonstrate that the most dominant usage of this word near the beginning of sentences is subject + suggest + that-clause. Note that there are two patterns that open with *Aitchinson suggests*; the second is different because omits the word *that* from the *that*-clause.

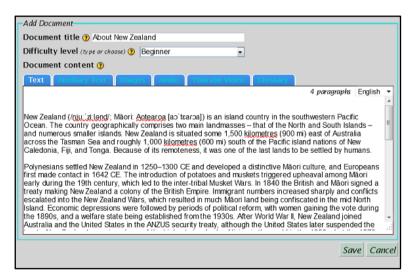
The lower illustration shows how *suggest* is used in the middle of sentences. The top two patterns are *suggest* + *that*-clause, while the third is *suggest* + noun phrase. The second example is distinguished as a different pattern because, being preceded by a comma, it begins a clause, as in

Swinburne reinforced this idea, suggesting that people expect too much

The patterns that follow (from 71 to 11 occurrences) show the same trend. The *that*-clause is followed by patterns such as noun phrases (*older adults, the number of*), pronouns (*we, it, he*) and proper nouns (*Jones*). Noun phrase patterns include <u>article + adjective + noun</u> (*suggests a test, suggest an annual activity*) and <u>article + adjective + noun + of</u> (*the origin of, the means of, particular methods of*).



Starting a new collection



Adding a new document

6. Creating your own collection

The process of creating a collection is exactly the same whether you are Moodling or not. In stand-alone FLAX you will have to log in, go to *List collections* in the drop-down list under your name, and click *Add a new collection*. In Moodle-FLAX you turn editing on, click *Add an activity or resource*, select *FLAX language learning*, click the *Language resource* button and then the *Make a new collection* link. In either case you get the form shown opposite, into which you enter a name for the collection, and a description to go on its home page. Then click *Save* to move to the next stage, which is to add documents.

Each document is added using the form shown in the second image. First choose a title. Then choose a difficulty level, either from the list provided (*Beginner*, *Intermediate* and *Advanced*), or by typing in your own level name. Then paste the document text into the box. You can copy text from a Web page, from a Word document, from almost anywhere. Of course, copyright is your own responsibility; before adding any document, please ensure that you have permission to do so. Separate paragraphs with blank lines; the form states (on the right) how many paragraphs there are.

As well as text, you can also enter other items using the blue buttons shown.

Auxiliary text might contain information about the document's source, or perhaps key vocabulary items that it introduces. This text is shown in a box at the bottom of the document, but is not included in any language activities that are made from it. (Here is an example, the "Adventure sports" article. Scroll down to see the auxiliary text.)

Images may be associated with the document. After clicking this button you can upload an image file, which will be displayed at the beginning whenever the document is shown. Several image files can be uploaded, in which case they will be equally spaced throughout the document. (The documents you include in FLAX collections are intended to be simple; controlled image placement is not possible.) You can also make collections where each "document" is an image accompanied by a caption or some explanatory text. This would be suitable for the Image Guessing activity in Section 4.8.

Audio files are specified in exactly the same way. This facility is intended to allow students to listen to documents as well as read them. In the document shown, which is about New Zealand, the national anthem could be given as an audio file. You can associate more than one audio file with a document; the user plays them by selecting from a menu.

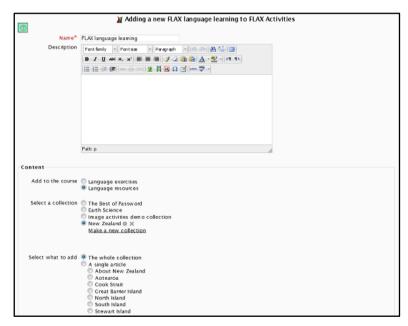
YouTube Videos are specified by giving their URL.

Glossary items can be specified. Right now FLAX doesn't use them, but it will in the future.

After adding a document, click the *Save* button. You will get a form that lists the documents in the collection so far, with a button for adding the next one. Continue in the same manner until the collection is complete. At any time you can return to an earlier document and edit it (click the *edit* icon beside the document name) or delete it (the "x" symbol).



Summary of the documents added so far



A new collection called New Zealand, which I can now edit if I want

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6.1 Building and installing the collection

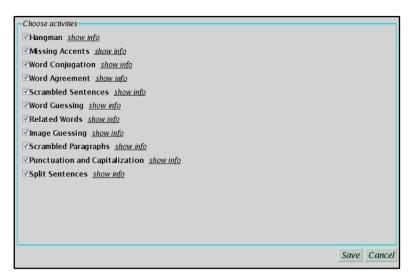
The list of documents you add to the collection is shown in the top panel opposite (you can see the *edit* and *delete* icons beside the document names). When you have finished adding documents, click the *Build* button. After a short delay, which depends on the number and size of documents, the collection will finish building and be added to your FLAX system.

If you are working in Moodle, the new collection appears in your list of collections, along with the usual Moodle *edit* and *delete* icons (these only appear beside collections that you yourself have built). It will be visible to any other teachers who use the same Moodle installation. You can go back and add new documents to your collection, or alter its configuration as described in Section 6.2.

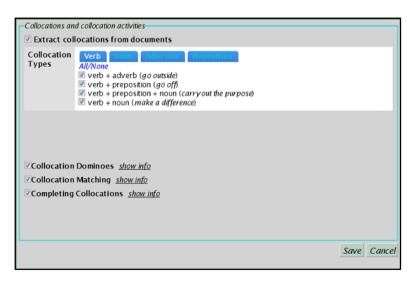
If you are using stand-alone FLAX, your collections are listed under two headings:

- My finished collections
- My collections under construction.

Your new collection will appear as under construction. Select it with the mouse and drag it into *My finished collections* to make it available to all users of the FLAX server. If you want to change the collection, drag it back to the "under construction" area, where four buttons appear alongside it: *edit*, *delete*, *copy*, and *preview*. You can only do this for collections that you have created, not for ones belonging to other people – and, of course, you can't edit the standard collections. With these buttons you can *copy* any collection, which produces a copy under "My collections under construction," or *delete* and *edit* collections – typically by adding or deleting documents, or changing the collection's name. You can also *preview* collections to see what they look like.



Selecting which activity types to include



Selecting which collocation types to include

6.2 Optional collection configuration

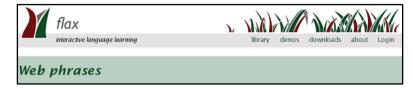
If you wish, you can perform some optional configuration for your collection:

- Edit name and description,
- · Choose activities, and
- · Configure collocations.

The first is straightforward. The second lets you specify which "activity types" your new collection will allow. Some activities don't make sense for certain collections; for example, a collection of images supports the image guessing activity, but not activities that involve textual documents – and *vice versa*. The default is to include all that seem relevant to the collection, and it's simplest to leave it and assume that people using the collection will not try to define inappropriate activities.

The third option shows a list of collocation types to include. FLAX analyzes each document and finds the collocations that appear in it. It parses each sentence to determine the syntactic part of speech of its words, groups collocations by type and first word, and associates them with the document. They can be highlighted when users read the document, and also form the basis of collocation games. Section 4.2 contains more information about collocations.

At this stage in collection-building, you can determine what kind of collocations FLAX seeks. Select one of the parts of speech on the buttons in the second image opposite – noun, verb, adjective, adverb, preposition – to see the collocation patterns that are associated with it. You can select or deselect these individually. If you're not interested in collocations at all, collection building will be faster if you deselect *Extract collocations from document* (at the top).



The Web phrases collection



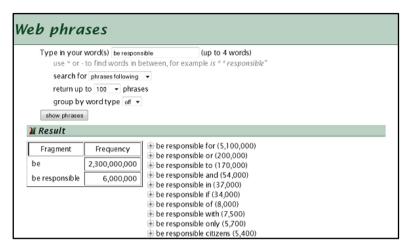
The Learning Collocations collection

7. Language learning resources

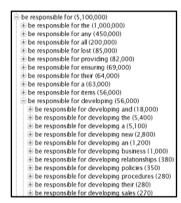
FLAX includes two large language learning resources: Web Phrases and Learning Collocations.

This section examines these resources and how they can be utilized in language learning. They contain authentic written text drawn from various sources and representing contemporary English use. The first, Web Phrases, is built from web text, which has been preprocessed and organized into a searchable database, along with a user interface and flexible searching and browsing facilities to cater for different user needs. The second, Learning Collocations, is built from the British National Corpus, the British Academic Written English and Wikipedia, again preprocessed and organized as a searchable database with a similarly flexible user interface, which in both cases the text.

The next two sections describe the Web Phrases and Learning Collocations resources. Following that, we examine how these resources can be used to support general and academic writing, using a series of scenarios that take place within a genuine teaching and learning context.



Searching for be responsible in Web Phrases



Further exploration of be responsible

```
be held responsible (1.700.000)
be solely responsible (95,000)
be a responsible (50,000)
be more responsible (26,000)
be directly responsible (24,000)
be fully responsible (23,000)
be financially responsible (22,000)
be primarily responsible (21,000)
be made responsible (16,000)
be personally responsible (12,000)
be the responsible (11,000)
be partly responsible (10.000)
be legally responsible (9,200)
be fiscally responsible (8,600)
be socially responsible (7,500)
he partially responsible (6.200)
be ultimately responsible (6.000)
be jointly responsible (5,700)
be hold responsible (5,200)
be largely responsible (4,800)
be entirely responsible (4.400)
be completely responsible (3 900)
```

Results of the search be * responsible

7.1 Web Phrases

The Web Phrases resource was developed from a database containing a vast set of word sequences in the English language, along with their frequencies. The data was collected from publicly accessible Web pages that together comprised approximately one trillion word tokens. The word sequences range from single words to units of five consecutive words. FLAX's Web Phrases resource contains 50,000 unique words, 14 million two-word sequences, 420 million three-word sequences, 500 million four-word sequences, and 380 million five-word sequences. It allows free exploration of word combinations, unconstrained by grammatical class. With it, users can study particular words and phrases to check whether and to what extent what they are writing represents common usage.

Users can find what words most commonly follow a particular word or phrase. The interface contains three parts, shown in the top illustration. Here, the user has typed the phrase *be responsible* into the upper part of the interface. A small statistical table shows the frequency with which this phrase, and any constituent prefix phrases (here, the word *be*), appears in the Web Phrases collection. Beside it is an expandable list (only the first ten lines are shown) that displays associated phrases in reverse frequency order, along with their frequency counts.

The most frequent words following *be responsible* are *for*, *or*, *to*, *and*, etc. (in that order). When the plus sign beside *be responsible for* is clicked, the tree expands as shown in the lower left-hand image, displaying the extensions of these phases, again in frequency order; here, the expanded phrase *be responsible for developing* has also been clicked. In addition the table and graph update accordingly (not shown in the illustration).

A phrase can be expanded up to five words, or until no further extensions are found. Once the phrase length reaches five words, the database contains no further extensions – but if you click on a five word phrase, the system will retrieve from the Web examples of text that use it

The illustration shows searching in the forward direction, but users can also search backwards by specifying the *phrases preceding* option – giving, in this case, phrases like *will be responsible*, *shall be responsible*, *may be responsible*.

Furthermore, an asterisk (*) can be used to stand for any word. This allows users to find words that occur between other words of a phrase. The lower right-hand illustration shows the adverbs that intervene between be and responsible – solely, directly, fully, etc.. Further asterisks can be added, for example, be ** responsible, be *** responsible, and be * responsible * the.

Finally, common words like *the*, *a*, *of*, and *to* are dominant constituents of phrases, and often make it hard for users to discern useful language patterns. The *group by word type* option addresses this problem by letting users look up the words following or preceding a phrase by their grammatical part of speech – preposition, verb, noun, adjective, etc..

¥ used as a noun				
research + noun	 research project research programme market research research findings research team 	237 👶 209 👶 141 🗳	research contract research work research students research interests research methods	103 102 95 82 80 ≫more
adjective + research	social research social research social science research social research asocial research method quantitative social rese.	s	nedical research 159 ch 20 earch 11 ch 4 search 3	90 70 60 59 56 >>> more
noun + of + research	social work research social survey research social survey research social science research comprisal social research contemporary social res social scientific research social scientific research	n search n	esearch rch arch esearch arch	34 26 25 23 22 >>> m ore
research + preposition + noun	social science research basic social research social policy research in-depth social science	computing project	ts 1 earch 1 n researc 1 between	research 9

	research	hypothesis	scientific	empirical	method	prediction	academic	researcher	
	hourglass	quantitative	iournal	knowledge	criticism	evidence	varv	outcome	
	scientifi	ic method		3	*	scientific infor	mation	1	
	embodi	ied in the scienti	fic method	1	*	scientific meth	nods	1	
	variety	of scientific matt	ers	1	*	scientific testi	ing	1	
	👶 applicat	ion of the scient	tific method	1	*	classical scien	tific methods	1	
	rounds	of scientific test	ing	1	*	scientific rese	arch	1	
M c	🚑 alternat	ive to purely sci	entific methods	1	**	use the scient	tific method	1	
Res	purely s	cientific		1	**	provides scier	ntific information	1	tablish novel facts, sol
orol		cientific method		1	**	funding for sc	ientific research	1	tabilan noverraces, son
,101	scientifi	ic matters		1					
exte.									
	lefinition	S	180 1						
M c		_	he search for	knowledge o	r as anv s	vstematic inv	estigation with	h an onen r	mind to establish nove
M c	earch can b	e defined as t							•
M c Res	earch can b s, solve new	e defined as to or existing pr	oblems, prove						mind, to establish nove method. [Wikipedia]
M c Res	earch can b s, solve new	e defined as t	oblems, prove						•
M c Reso acts exte	earch can b s, solve new nded defini	oe defined as the or existing protions from wikt	oblems, prove ionary						•
M c Reso acts exte	earch can b s, solve new nded defini	e defined as to or existing pr	oblems, prove ionary						•
M c Reso acts exte	earch can b s, solve new nded definit related to	oe defined as the or existing protions from wikt	oblems, prove ionary			new theories	, usually using	a scientific	
M c Reso acts exte	earch can b s, solve new nded defini related to Social so	ne defined as the defined as the control of the con	oblems, prove ionary			new theories	, usually using earch and deve	a scientific	
M c Reso acts exte	earch can b s, solve new nded definit elated to Social so Science	ne defined as the defined as the control of the con	oblems, prove ionary			new theories Resi	, usually using earch and deve	a scientific	
Res acts	earch can b s, solve new nded definit elated to Social so Science Academ	ne defined as the defined as the control of the con	oblems, prove ionary			new theories Resi Peer Disc	, usually using earch and deve	a scientific	

Searching for research in Learning Collocations

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7.2 Learning Collocations

The Learning Collocations resource contains a host of collocations covering most English words. It is split into three databases, each sourcing collocations from a different body of text: standard and general English (the British National Corpus), specialized academic written text (the British Academic Written English Corpus), and a contemporary crowd-sourced resource (Wikipedia). Word combinations that follow 17 common syntactic patterns (verb + noun, noun + noun, adjective + noun, noun + of + noun, etc.) are extracted, sorted by frequency, and presented in an easy-to-use interface, with links to their original context.

This resource works as follows. The user types a term of interest and selects one of the three databases: standard, academic, and contemporary English. In the illustration, the term is *research*, with the contemporary English (Wikipedia) database. The system retrieves and displays collocations and other information about the term.

At the top are family words, that is, inflected and derived forms of the query term — in this case researches, researching, researched, researcher and researchers. Clicking any of these will re-invoke a search using it as the query term. Links to the term's synonyms and antonyms appear on the right: standard resources (WordNet and Roget's thesaurus) are used to identify these.

The illustration shows collocations of the word *research* "used as a noun", and four syntactic patterns are visible: <u>research + noun</u>, <u>adjective + research</u>, <u>noun + of + research</u>, <u>research + preposition + noun</u>. There are five further patterns, that can also be shown. And <u>research</u> can also be "used as a verb", with a further seven patterns.

For each pattern, ten collocations are displayed, along with their frequencies. Clicking one – *social research*, in the illustration – brings up a superimposed panel displaying similar collocations, with links that retrieve samples in context from the original text. Learners can use the cherry icon to place collocations of interest into their cherry basket (Section 5.5).

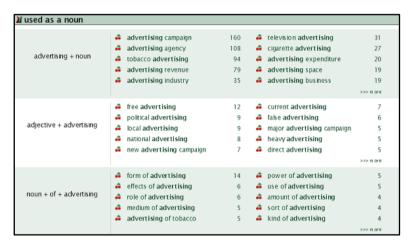
The panel beneath shows words that are related to the query term: in this case, *hypothesis*, *scientific*, *empirical*, *method*, *prediction*, *academic*, *researcher*, Here, *scientific* has been clicked, bringing up a panel showing collocations associated with that word: *scientific method*, *scientific information*,

At the bottom, FLAX gives a definition of the query term (from Wikipedia), and related topics (also derived from Wikipedia). Mousing over a topic brings up its definition.

Typing more than one word retrieves collocations containing all the query terms, regardless of word order. This is a good way to expand a learner's knowledge of correct usage. For example, the query benefit public yields public benefit, benefit to the public, benefit the public, reserved for the public benefit, and so on.



Searching for alcohol in Learning Collocations



Searching for advertising in Learning Collocations



Synonyms of ban in Learning Collocations

7.3 Preparing for essay-writing

Knowing collocations of a term that is central to what students are writing about can help them express ideas fluently and accurately. Teachers often recommend collecting a few topic-specific collocations and expressions before starting writing. The Learning Collocations described in the previous section can help.

As an example, we use an essay entitled "Alcohol advertising: Should it be banned?" The first step is to identify keywords for the topic: *alcohol*, *advertising*, and *ban* are obvious candidates. Next the learner seeks collocations that are germane to the topic. This can stimulate a brainstorming process, because students might encounter new and inspiring ideas. Thus it is a good idea to collect several collocations, even though many might not end up in the text. Here are four sample collocations for each keyword:

alcohol	advertising	ban
alcohol consumption	effects/power/impact of	ban on tobacco advertising
amount of alcohol	advertising	advertising ban
excess alcohol	heavy advertising	legislation to ban
addicted to alcohol	funded by advertising	supported the ban

It is not always possible to find exactly matched collocations. However, words can sometimes be substituted or added to relate a collocation to the topic. In the Table, ban on tobacco advertising can be changed to ban on alcohol advertising, heavy advertising to heavy alcohol advertising, and legislation to ban to legislation to ban alcohol advertising.

Sample sentences can be a fruitful source of useful expressions. In the upper image, correlations between alcohol consumption and incidences is a good example. From this expression, plausible sentences like "There is a positive correlation between advertising familiarity and alcohol consumption" can be constructed. Likewise, some collocations in the above Table can be further extended, such as a fair amount of alcohol, driving with excess alcohol, and become addicted to alcohol.

Collecting and using semantically similar collocations is an effective way to avoid repetition and increase lexical variety, like this:

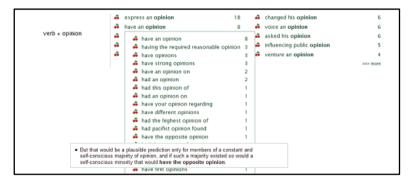
This following section focuses on the effects of alcohol advertising on increasing drinking behaviors. The power of alcohol portrayal on The impact of liquor advertisements on

Here, the repeated use of synonyms *effects*, *power*, and *impact* also helps to increase the cohesion of the writing.

Another way of reducing repetition is to explore synonyms and their collocations. For example, the synonyms *forbid and prohibit* for the word *ban* are shown in the bottom image.



Search for *related* in Learning Collocations



Search for opinion in Learning Collocations



Search for *profit* in Learning Collocations

7.4 Choosing the appropriate word

Do the phrases "learn knowledge" and "big rain" sound odd to you? Many students have difficulty in finding the right words to express their ideas, because they lack collocation knowledge or are unduly influenced by their mother tongue. (Both these phrases are natural in Chinese). As a result, they tend to formulate inappropriate word combinations, or overuse general modifiers such as *more*, *very*, *bad*, *good*, etc. This is particularly noticeable in <u>verb+noun</u>, <u>adverb+verb</u>, and <u>adjective+noun</u> combinations, as in the following sentences, where infelicitous phrases appear in bold:

Alcohol advertising is actively related to alcohol consumption, and the consumption can lead to fatalities.

Some people argue that the alcohol product advertising should be banned and others **keep the opinion** against it.

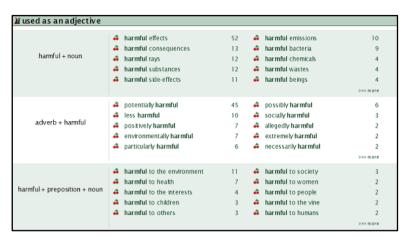
While many alcohol companies are enjoying **lucrative profits**, their alcohol advertising activities are being challenged by the general public and researchers.

In the first example, the student has used the adverb *actively* in an attempt to emphasize the strong correlation between *alcohol advertising* and *consumption*. In the second, *keep* is not an appropriate verb to associate with the noun *opinion*. The last example, *lucrative profits*, is a bizarre combination: *lucrative* is commonly used with *business*, *market*, *career*, etc., but not with *profit*.

The Learning Collocations resource is an excellent source of plausible word combinations. It is fairly easy to locate appropriate verbs or adjectives for a particular noun, or appropriate adverbs for a particular verb. Here are some collocates of *related*, *opinion*, and *profit*, retrieved from Learning Collocations:

related	opinion	profit
closely related highly related clearly related	express an opinion have an opinion voice an opinion	substantial profit increased profit considerable profit

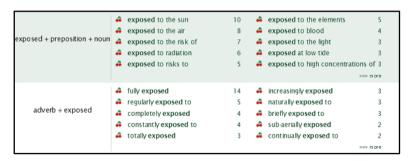
In the first example sentence above, *closely*, *highly*, and *clearly* are all far more appropriate than *actively*. In the second, *express*, *have* and *voice* all seem to fit the context. In fact, this sentence can be further improved by including *have an opposite opinion*; a student can find this by examining the extensions of *have an opinion* shown in the middle image. In the third example sentence, *lucrative can be* replaced with *substantial*, *increased*, or *considerable* to express the intended idea.



Search for *harmful* in Learning Collocations

	# eventually lead to	39	4	probably lead to	14
	inevitably lead to	31	4	simply lead to	13
adverb + lead	well lead to	30	4	necessarily lead to	9
	ultimately lead to	24	4	usually lead to	7
	asily lead to	21	4	undoubtedly lead to	6
					>>> more

Search for lead in Learning Collocations



Search for exposed in Learning Collocations

7.5 Hedging and boosting

Adding adverbs to qualify statements is a common rhetorical device, particularly in academic writing. But students often have trouble hedging or boosting statements appropriately and precisely. As a result, they overuse general adverbs such as *very*, *more*, and *much* to weaken or strengthen their claim, and sometimes invalidate statements by choosing highly specific qualifiers. Consider these:

Alcohol is very harmful to their physical and psychological health.

It is a common sense that the more ads we are exposed to, the more likely we are to be seduced to drink and may drink excessively, which **inevitably leads to** disasters while driving.

Smart (1988) however had reviewed many other research and admitted that the link between the advertising and consumption was weak and awaiting more comprehensive research, while at the same time confirmed that alcohol drinkers were definitely exposed to alcohol advertising and their consuming behaviors were in fact continuing to increase.

The *very* in the first example is probably the most common adverb used by novice writers to add extra strength to a statement. Students commonly rely on such adverbs to help voice opinions because of their restricted vocabulary knowledge. These adverbs are weak and ambiguous, and should be avoided in academic writing. In the second and third examples, the adverbs *inevitably* and *definitely* are used to express a high degree of certainty. However, these qualifiers are too extreme. Excessive drinking does not *necessarily* lead to driving disasters, and not all alcohol drinkers are influenced by liquor advertisements.

The Learning Collocations resource can help writers find appropriate hedges and boosters. Here are some examples that are commonly associated with *harmful*, *lead to* and *exposed to*, expressing various degrees of certainty:

harmful	lead to	exposed to
potentially harmful	probably lead to	regularly exposed to
possibly harmful	easily lead to	constantly exposed to
apparently harmful	usually lead to	increasingly exposed to
particularly harmful	ultimately lead to	naturally exposed to
extremely harmful	inevitably lead to	continually exposed to

	a significantly reduce	34	4	thereby reduce	16
	considerably reduce	21	4	gradually reduce	11
adverb + reduce	greatly reduce	20	4	actually reduce	10
	further reduce	18	4	well reduce	9
	substantially reduce	17	4	drastically reduce	9
					>>> m ore

Search for reduce in Learning Collocations

	inguistic behaviour	37	disruptive behaviour	31
	anti-social behaviour	37	strange behaviour	30
adjective + behaviour	a individual behaviour	34	acceptable behaviour	29
	a undesirable behaviour	34	a chaotic behaviour	27
	unacceptable behaviour	34	deviant behaviour	26
	<<< less			>>> m ore

Search for behaviour in Learning Collocations

solve the problem	123	44	have the problem of	21
a tackle the problem of	37	4	face the problem of	20
overcome this problem	35	4	causing the problem	16
a resolve the problem	33	4	see the problem	14
address the problem of	27	4	cure the problem	14
	 tackle the problem of overcome this problem resolve the problem 	 a tackle the problem of 37 b overcome this problem 35 a resolve the problem 33 	a tackle the problem of 37 a overcome this problem 35 a resolve the problem 33 a	cackle the problem of 37 cackle the problem of 37 causing the problem 35 causing the problem 33 causing the problem 33 causing the problem

Search for problem in Learning Collocations

adjective + effect	immediate effect adverse effect overall effect good effect profound effect	136	nnficant effect 11: mulative effect 11- ect effect 110 sired effect 100 matic effect 100 >>> nor	4 0 5
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Search for effect in Learning Collocations

	A heavy drinking	32	4	underage drinking	7
adjective + drinking	excessive drinking	20	4	under-age drinking	6
	a moderate drinking	9	4	late-night drinking	5
	clean drinking water	8	4	responsible drinking attitudes	4
	sensible drinking	7	4	serious drinking	4
					>>> more

Search for drinking in Learning Collocations



Search for drinker in Learning Collocations

7.6 Improving formality

Formality and precision are both important features of academic writing. However, students often overuse colloquial language, and their writing comes out as too informal and lacking in precision. Here are three different ways this can occur.

- 1. Using generic quantifiers
 - a. Due to this, the consumption of alcohol product has reduced a lot.
 - b. If alcohol advertising was banned then this **sort of** behavior would decrease.
- 2. Overusing general words
 - a. Drinking alcohol will hurt health and make public health problems.
 - b. The majority of binge drinkers do not think they are problem drinkers so they could have **bad** effect on their classmates.
- 3. Failing to employ topic-specific collocations
 - a. Drinking too much alcohol can change our behaviors.
 - b. Banning alcohol advertising makes **people who love alcohol very much** decrease.

Students can consult the Learning Collocations resource to find precise expressions that help them avoid colloquial usage. The suggestions in the Table below relate to the example sentences above.

For sentence 1a, the Table suggests replacing a lot by a more expressive word: significantly, considerably, or greatly. Likewise, sort of in 1b could be replaced by undesirable, unacceptable, or deviant. For 2a, the verbs cause, raise and pose are commonly associated with the noun problem. In 2b, substituting serious, damaging or disastrous for bad adds strength. The cumbersome expressions in 3a and 3b can be replaced by topic-related collocations, heavy (or excessive, or serious) drinking instead of drinking too much alcohol, and heavy (or regular, or habitual) drinker for people who love alcohol very much.

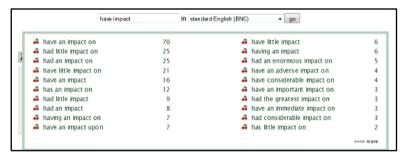
1a. reduce a lot	2a. make public health problems	3a. drinking too much alcohol	
significantly reduce considerably reduce greatly reduce	cause the problem raise the problem pose the problem	heavy drinking excessive drinking serious drinking	
1b. sort of behavior	2b. have bad effect on	3b. people who love alcohol very much	
undesirable behavior unacceptable behavior deviant behavior	have serious effect on have damaging effect on have disastrous effect on	heavy drinker regular drinker habitual drinker	



Search for benefit in Learning Collocations



Synonyms of link in Learning Collocations



Search for have impact in Learning Collocations

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7.7 Increasing text variation

A common problem in student writing is repetition, repetition, repetition. Unless deliberately used for dramatic effect, repetitive writing is boring writing. Here we illustrate how Learning Collocations can be used to enliven the examples below, taken from a student essay.

- Ackoff and Emshoff (1975) confirmed that the increase of advertising activity on the alcohol brand was positively linked with the sales, hence the increasing consumption of the product. Smart (1988) however admitted that the link between the advertising and consumption was weak and awaiting more comprehensive research. Saffer (1997) focused on alcohol consumption and motor vehicle fatalities and revealed positive link between the two.
- Some people will argue that some alcohol products also have some benefits such
 as the use for medicine. However, everything has both sides, it is up to how people
 use. Even though some alcohol products have some benefits, the drawbacks of
 alcohol products overweight the benefits. Therefore, the alcohol product advertising
 should be banned.
- 3. In the long run, it has more advantages to ban alcoholic product advertising on the whole in terms of the healthier and sustainable development of the country, although it may have big impact on the sales of alcohol companies as frequently argued as their evidence by the opponents. For example, ... It is unwise to invest even one dollar on alcohol advertisements, which have bad impact on people's health

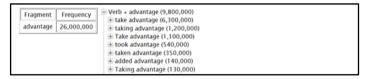
First, deploy synonyms to avoid overusing the same word. For example 1, the Synonyms button in Learning Collocations shows that associate and relate are synonyms of the word link. Further checking the collocations of these two words, and their noun forms (association and relation), yields useful phrases: associate with or association between and relate to or relation between. These are plausible alternatives for link with and link between.

Second, consider using other members of the same word family (e.g., verb, noun, adjective and adverb). The word *benefit* is frequently overused in student writing, particularly its noun form — as in the phrase *have benefits*. Searching for *benefit* in Learning Collocations generates the family word *beneficial*, and also verb usages such as *benefit consumers*, *benefit greatly from*, *able to benefit from*, and *benefit from the use of*.

Third, <u>have + adjective + impact on</u> occurs several times in the example essay in conjunction with weak adjectives like <u>big</u>, <u>bad</u>, <u>small</u>, and <u>great</u>. Searching for phrases by putting multiple words in the query box — in this case <u>have impact</u> — provides an effective way of finding alternatives, such as <u>enormous</u>, <u>considerable</u>, <u>significant</u>, <u>little</u>, <u>adverse</u>, and <u>minimal</u>. Other verbs associated with <u>impact on include assess</u>, <u>examine</u>, <u>consider</u>, <u>minimize</u>, <u>reduce</u>, and <u>measure</u>.



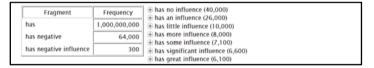
Search for alcohol in Web Phrases



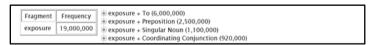
Search for advantage in Web Phrases



Search for begin to in Web Phrases



Search for has * influence in Web Phrases



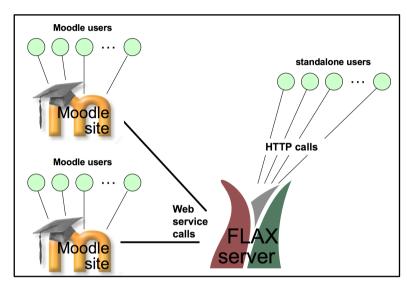
Search for exposure in Web Phrases

7.8 Checking grammar

Should I use a determiner? And which one: *a, an,* or *the*? Is *famous for* or *famous with* correct? Does the word *research* have a plural form? The Web Phrases collection can be used to solve grammatical problems such as these. We will examine the five examples in the Table below: singular *vs.* plural form, appropriate determiners, verbs followed by the word *to,* adjectives *vs.* adverbs, and appropriate prepositions.

1. Singular vs. plural	Eemund (2012) has found the association between alcohol intakes and asthma.
2. Determiners	Alcohol companies take an advantage of the opportunity to promote their products on TV.
3. Verb + to	This situation may make young people begin to drinking alcohol.
4. Adjective vs. adverb	Alcohol products has negatively influence on the social harmony.
5. Prepositions	A study has found that exposure on alcohol advertising encourages people to drink.

- Consulting Web Phrases for phrases that follow the word alcohol shows that the overwhelming majority of nouns are singular: alcohol abuse, alcohol use, alcohol consumption, alcohol rehab and alcohol intake.
- 2. Language learners find it hard to use determiners correctly, because there are many exceptions to the general rules. For example, we say have an advantage, but not take an advantage. In a search for phrases preceding advantage, take advantage (without a determiner) tops the list.
- 3. The word to can be used either as a preposition or as an infinitive marker (used with a verb's base form to indicate that it is in the infinitive). Determining its true function can be difficult, particularly when it follows a verb for example, in contribute to and expose to it is a preposition. Checking Web Phrases for phrases following verb + to helps distinguish them. Here, begin to should be followed by a base form verb: begin to drink.
- 4. Students often confuse a word's adjectival and adverbial forms. Using "wild-card" search in Web Phrases, has * influence generates many <u>adjective + influence</u> phrases, including negative influence.
- Web Phrases makes it easy to find the most commonly used preposition for a particular word. Here, the most common preposition following exposure is to: exposure to.



Structure of the FLAX system

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8. Under the hood

If FLAX is all set up for you, or if you use the demonstration version, you don't need to know anything more about how it works. This chapter is for people who have to set up the system, or for those who are just curious.

8.1 FLAX architecture

In the center of the diagram opposite is the FLAX server. Here it is servicing three groups of users: one group of stand-alone FLAX users (on the right), and Moodle users on two separate sites (on the left). Note that the FLAX server is a completely separate entity from the Moodle server, and that several (in this case two) Moodle sites can use the same FLAX server. All the users in this illustration are on Web browsers (represented by green circles), and there is no distinction between students and teachers.

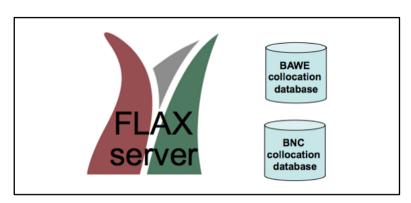
Stand-alone FLAX users communicate with FLAX in the ordinary way; they use it as a Web server over the standard hypertext transfer protocol (HTTP). To do this, all they need is the URL of a FLAX site (http://flax.nzdl.org for the demonstration site). Teachers must register (Chapter 3) to save the exercises they create or to build collections; any collections they build are visible to everyone. We hope that serious users will download the FLAX server and run it on their own computer. The system is available at no cost from the FLAX website.

Moodle users communicate with their normal Moodle service, which must have a module called MoodleFLAX installed. MoodleFLAX sits inside Moodle and communicates with a FLAX server using Web service calls. Communication is fine grained; when students undertake FLAX activities their Moodle server is continually making Web service calls to the FLAX server behind the scenes. Cut this connection and the activities will stall. All the exercises you make and the collections you build are stored on the FLAX server; only the class grades are stored on Moodle.

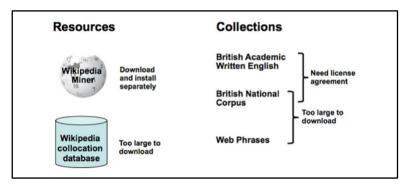
At the time that MoodleFLAX module is installed, you give it the Web address of a FLAX server. The FLAX demonstration site can be used temporarily, but again for serious use please download and install the FLAX server.

When several Moodle sites communicate with the same FLAX server, the collections built on each site are kept separate. Recall from Chapter 3 that collections are shared within your institution – i.e., on a single Moodle site. However, they are not shared *between* different sites.

The FLAX server runs on Linux, Windows, and Mac. It is easy to install. Download the server from http://flax.nzdl.org: full installation instructions are given there. Moodle users need to download the MoodleFLAX module from the Moodle website and make the connection with their FLAX server.



More details of the FLAX downloads



Components that cannot easily be downloaded

8.2 More on FLAX servers

Although the FLAX software is open source, for various practical reasons it is difficult to download everything that can be viewed at the http://flax.nzdl.org website.

If you install just the FLAX server, as described above, everything described in this book will work **except**:

- Activities
 - Related Words (Section 4.2.1)
 - Collocation Matching (Section 4.2.2)
 - Collocation Dominoes (Section 4.2.3)
 - Collocation Guessing (Section 4.2.4)
- Resources
 - Learning Collocations (all of Section 7.2)
 - o British Academic Written English collections (Chapter 5)
 - Usage examples invoked by the British Flag icon (Section 5.6, Chapter 7).

Three collocation databases are available from http://flax.nzdl.org, produced from the British Academic Written English corpus, from the British National Corpus, and from Wikipedia. Even without them, collocations in the documents in the digital library collection will still be identified and marked. But these databases are necessary for other collocations to be shown, and for the above activities. If they are downloaded and installed, most of the above facilities will automatically become available.

At this point, everything described in this book will work except:

- Facilities
 - o "Contemporary English collocations" selection (Section 7.2)
 - o Definitions of query terms, and related topics (Section 7.2)
- Resources
 - o British Academic Written English collections (Chapter 5)
 - Usage examples invoked by the British Flag icon (Section 5.6, Chapter 7).

For these to work, the FLAX components shown in the lower illustration are required.

The British Academic Written English (BAWE) and British National Corpus collections are subject to separate license agreements. If you obtain a license for the former, ¹⁰ we can make it available for you. However, the latter is too large to download: therefore, usage examples invoked by the British flag icon are not available (the icon will not appear in your interface). However, if you download BAWE, examples will be supplied from that instead.

The **Wikipedia Miner** software is used to show definitions of query terms, and related topics. This software is available separately from http://wikipedia-miner.cms.waikato.ac.nz. The **Wikipedia collocation database** is too big to download. This means that the "contemporary English collocations" menu selection described in Section 7.2 will not appear.

¹⁰ from the Oxford Text Archive, http://ota.ahds.ac.uk/desc/2539

Ētahi Tikanga Maori!

Ka mui ngā tikanga Māori e āhei ana ā tātou tamariki ki te ako. Me **āta tohutohu, nō te anō, ko ēnei tohutohu he**mea āta waiho iho nā mea tātou tīpuna mai ō mai anō. Ko ō tātou tīpuna he iwi mōhio ki te tohu i ā rātou

taonga, i ā tātou kai hoki.

Total score: 0 Question No. 2 out of 29

Check Answer Previous question Next question

Scrambled sentences in Māori: easy? ...

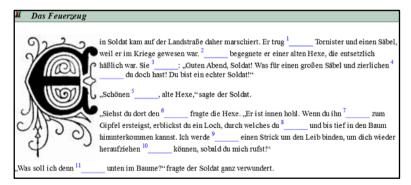
Ētahi Tikanga Maori!

Ka nui ngã tikanga e ki ā Māori tamariki ana tātou āhei te ako. Me āta tohutohu, nō te mea ko ēnei tohutohu he mea āta waiho iho nā ō tātou tīpuna mai anō. mai anō.

Total score: 0 Question No. 1 out of 26

Check Answer Previous question Next question

... or not so easy!



Word guessing, in German

8.3 FLAX in other languages

The ideas underlying FLAX are language independent, and it can be used without any modification for teaching other languages – European ones, anyway. ¹¹ Of course, syntactic structures such as simple vs. complex sentence, or parts of speech, will not work properly for other languages. Such information is utilized as an optional feature in most activities. Also, collocation-based activities will not work, because our collocation dictionaries are in English.

Nevertheless, FLAX can be used just as it stands for different languages. The illustration shows a Scrambled Sentence exercise in the Māori language of indigenous New Zealanders.

Fixing it up for other languages to provide all the features that are available for English is not, in principle, difficult. All that is needed is a syntactic module that can identify syntactic structure and parts of speech in that language. This will provide all the facilities that are available in English, but without any of the additional activities and resources that require external collocation databases (see Section 8.2).

The FLAX project at the University of Waikato is keen to cooperate with people who wish to make it available in other languages.

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¹¹ In its present form it will not work with languages such as Chinese that do not put spaces between words, and we are unsure about right-to-left languages such as Arabic.

Contact details

FLAX project website:

http://flax.nzdl.org

Email:

flax@cs.waikato.ac.nz

MoodleFLAX module:

http://docs.moodle.org/20/en/Flax module

Host organization:

University of Waikato, New Zealand

Project team:

Ian H. Witten, Professor of Computer Science

Margaret Franken, Chairperson, Language Education

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Shaogun Wu, Postdoctoral Fellow

Xiaofeng Yu, Research Programmer

Liang Li, Researcher

Jennifer L. Whisler, Fulbright Fellow

Michael Walmsley, Researcher

9. Over to you!

As we explained at the outset, FLAX is both a vision and a language learning system that you can use. And we invite you to participate in both!

If you're a teacher, please use the FLAX language learning system. There are no charges: it's completely free. Moodle users can download the MoodleFLAX module; others can access FLAX from our website. You're welcome to try it out with your classes. For sustained use, we urge you to download and install the FLAX server, to avoid overloading our computers. It's easy to do, and runs on any computer. However, some advanced FLAX facilities require further work to set up (Section 8.2). If you need help, just ask us.

We like to hear from FLAX users. We're interested in your comments and suggestions, and also in more formal user studies and comparisons, to help us improve the software. If you build collections that you can share, we can put them on our website. We're particularly interested to hear about experiences with non-English language teaching.

We also invite you to help us develop the FLAX vision. And we're also working on new ideas. Here are some.

Writing aids. We are seeking ways of detecting language errors in student writing, and suggesting alternative phrasing. We have noted that lack of collocation knowledge explains why language learners find it hard to express their ideas simply, precisely, and persuasively. Yet FLAX has an enormous vocabulary of collocations – surely it can help critique, and offer constructive suggestions.

Extensive reading. FLAX supports intensive study of particular texts. A complementary approach is to encourage students to read large volumes of text. In an associated project, FERN, we are modeling users by recording their usage of glosses, and their reading speed. The system automatically selects reading material of appropriate difficulty – and on topics that interest the individual user.

Collocation learning. FLAX already includes many facilities to help students learn collocations. However, we are experimenting with further advanced facilities in connection with our three databases of collocations.

Wikipedia mining. In a separate research project, we have discovered how to link topics in documents to Wikipedia articles, and to use this to quantify the semantic relatedness of arbitrary concepts. Both can be applied to language learning, for example by adding explanatory popups for named entities such as people and places, and by assessing the relevance of student guesses in certain exercises.

FLAX is open source software and you can work on it too. Please contact us if you would like to help develop the vision.

Acknowledgements

We gratefully acknowledge the help of all who have worked on the FLAX project, particularly John Brine, Katherine Brown, Jenny Field, and Alannah Fitzgerald.

We would like to acknowledge the stimulating environment provided by the digital library laboratory at the University of Waikato.

This work has been supported by grants from the New Zealand Marsden Fund and the New Zealand Foundation for Research, Science and Technology.

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Further reading

The definitive account of FLAX's support for collocation learning:

 Wu, S. (2010) Supporting collocation learning. PhD thesis, University of Waikato, New Zealand.

Published papers describing the FLAX system:

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