Structure of the FLAX system

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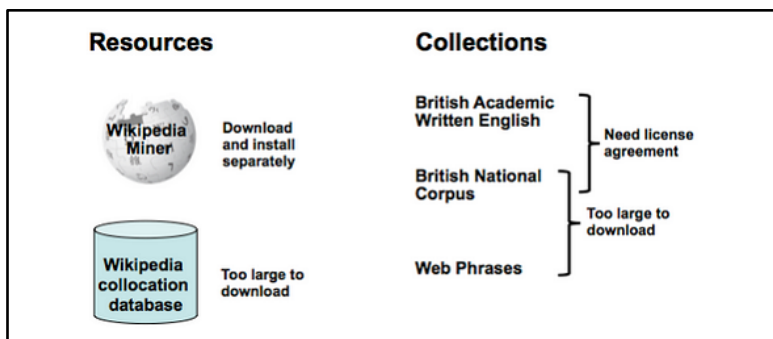
The FLAX server runs on Linux, Windows, and Mac. It is easy to install. Download the server from http://flax.nzdl.org: full installation instructions are given there. Moodle users need to download the MoodleFLAX module from the Moodle website and make the connection with their FLAX server.
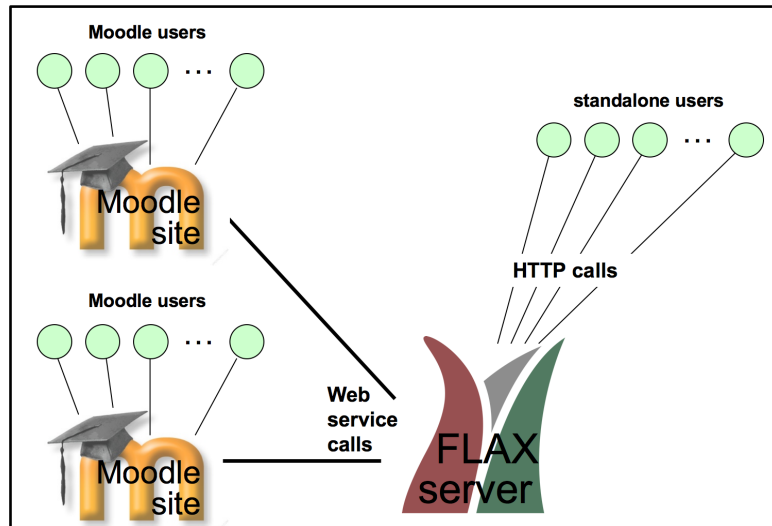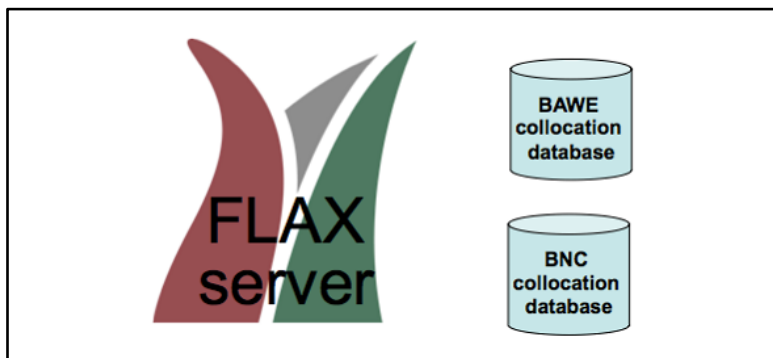
More details of the FLAX downloads

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)
    - 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
    - "Contemporary English collocations" selection (Section 7.2)
    - Definitions of query terms, and related topics (Section 7.2)
- Resources
    - 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.

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

Scrambled sentences in Māori: easy? …

… 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.