

# Combining learner needs, lexicographic data and digital writing environments

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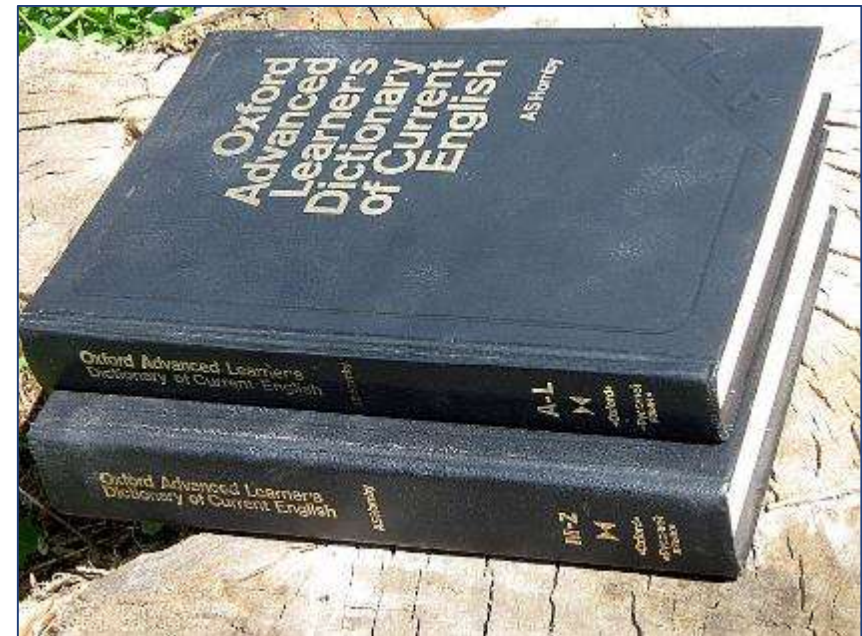
## Dictionaries in the past

- Language inventory
- Word meaning
- Spelling standardization
- Etymology
- Up to users to decipher “cryptic lexicographic content”  
(Lew & de Schryver 2014:341)



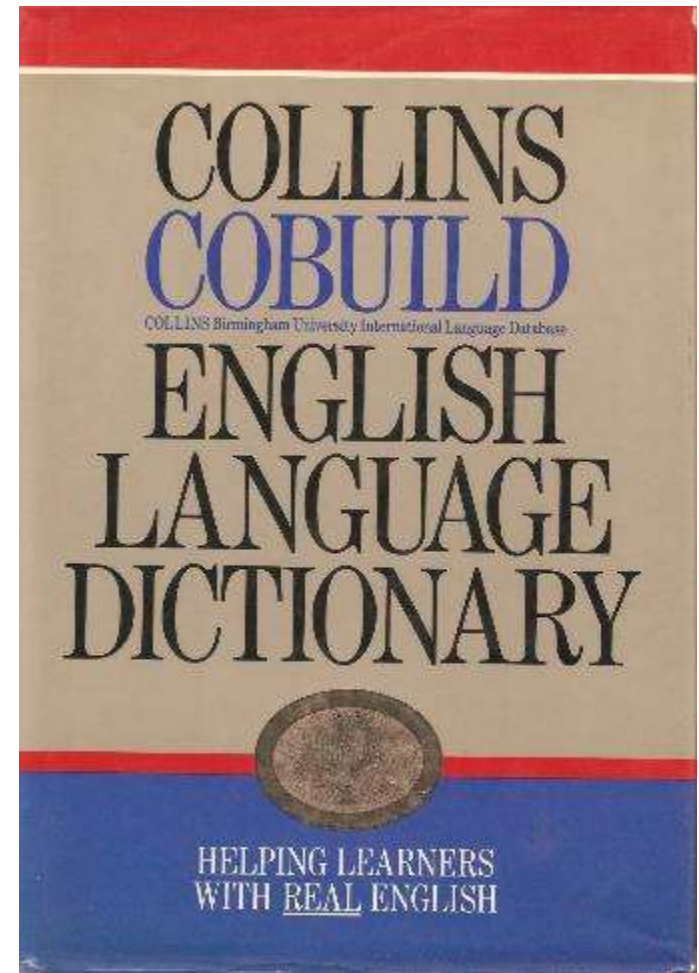
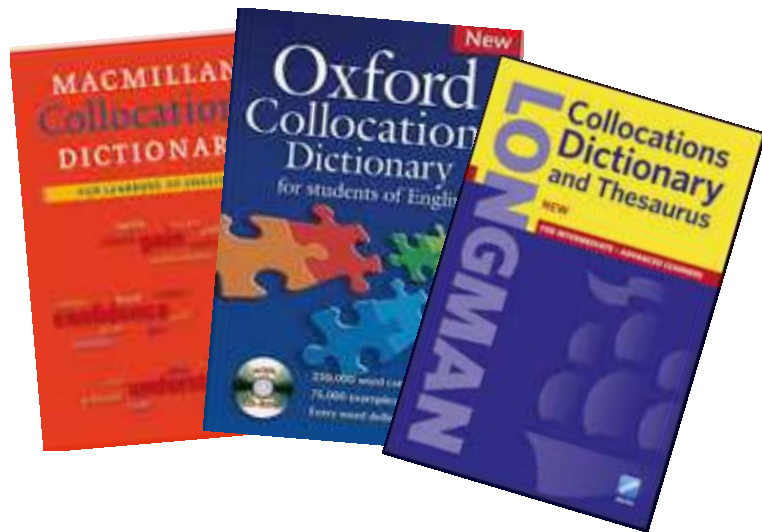
# The user paradigm

- Dictionaries for learners
- Headword list selection
- Defining vocabulary
- Usage labels
- Usage patterns
- Pronunciation



## The corpus paradigm

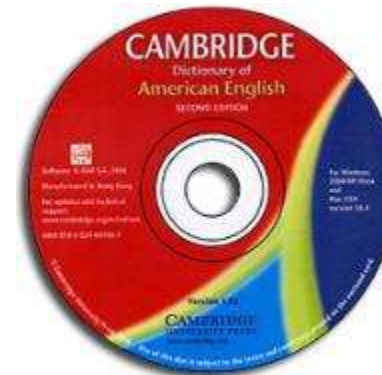
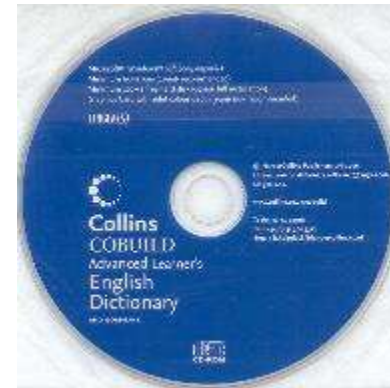
- Huge amounts of empirical data
- Word frequency
- Collocation
- Phraseology
- Authentic examples



- New types of dictionaries

# The electronic medium paradigm

- Free from AZ order
- Spelling cues
- Inflected forms
- Sound files
- Enhanced visuals
- More space
  - More content
  - Content unpacked
  - More readable
- Additional resources
  - Exercises
  - Games



# The real-time paradigm

- Dictionaries anywhere
- Regular updates
- User contribution
- User logs



# And yet...

- Spectacular developments have not had a dramatic impact on actual dictionary-user behaviour.
- Dictionaries used mainly just for meanings
- Both paper-based and digital dictionaries remain by and large underused

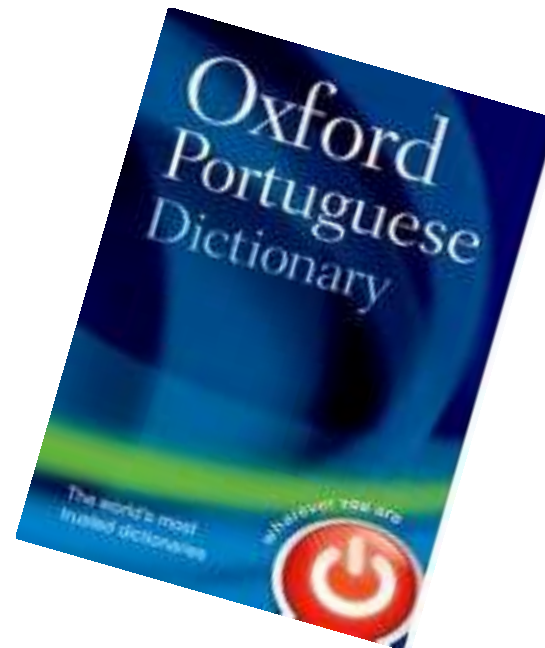


## Dictionary use

In second language and translation, marked preference for bilingual look-ups

(e.g. Frankenberg-Garcia 2005)

- L2-L1 equivalents for comprehension
- L1-L2 equivalents for production





Language users in general are not fully aware of

- What else current dictionaries can offer them
  - e.g. most users didn't know they could use dictionaries look up collocations (Frankenberg-Garcia 2011)
- Their actual language needs
  - *e.g. the queries posed by the students suggested that they felt all they needed to become successful writers of English was a bilingual dictionary and a spelling checker* (Frankenberg-Garcia 1999:104)

- Teach more dictionary consultation skills
  - Practice with dictionary workbooks (Stark 1990)
- Raise more awareness to dictionaries
  - Integrate dictionary training in the curriculum (Carduner 2003, Frankenberg-Garcia 2011)

We use a **dictionary** to .....

- ❖ find the meanings of words.
- ❖ find out the correct spelling of words.
- ❖ find out how to pronounce or say words.
- ❖ find out what part of speech a word is.



<https://www.slideshare.net/acw1217/3rd-dictionary-guide-words> [31/05/2017]

<https://www.wikihow.com/Use-a-Dictionary> [6 /11/2017]

1. Choose the right dictionary
2. Read the introduction
3. Learn the abbreviations
4. Learn the guide to pronunciation
5. Find the section of your dictionary with the first letter of your word
6. Read the guide words (e.g. braid-bread)
7. Scan down the page for your word
8. Read the definition...

## An alternative solution

### Dictionary-like tools that

- Do not require much training or instructions
- Raise language awareness at the same time



- [www.collocaid.uk](http://www.collocaid.uk)
- Project led by Surrey (Frankenberg-Garcia), with Bangor (Roberts), Poznan (Lew)
- Funded by AHRC AH/P003508/1



- An intuitive lexicographic resource integrated with digital writing environments to help learners write more idiomatically
- Focus on Academic English (EAP) collocations
  - The way words combine in academic English
    - *carry out + research*
    - *statistically + significant*
    - *further + studies*



1. Collocations make texts more idiomatic, more readable (Hoey 2005, Ellis et al. 2008; Conklin and Schmitt 2012)
2. Collocations have always been an area of difficulty for language learners (Pawley and Syder 1983; Natinger and DeCarrico 1992; Howarth 1998; Wray 2002)
3. Language users often lack awareness of collocation constraints (Nesselhauf 2005; Durrant and Schmitt 2009; Laufer and Waldman 2011)

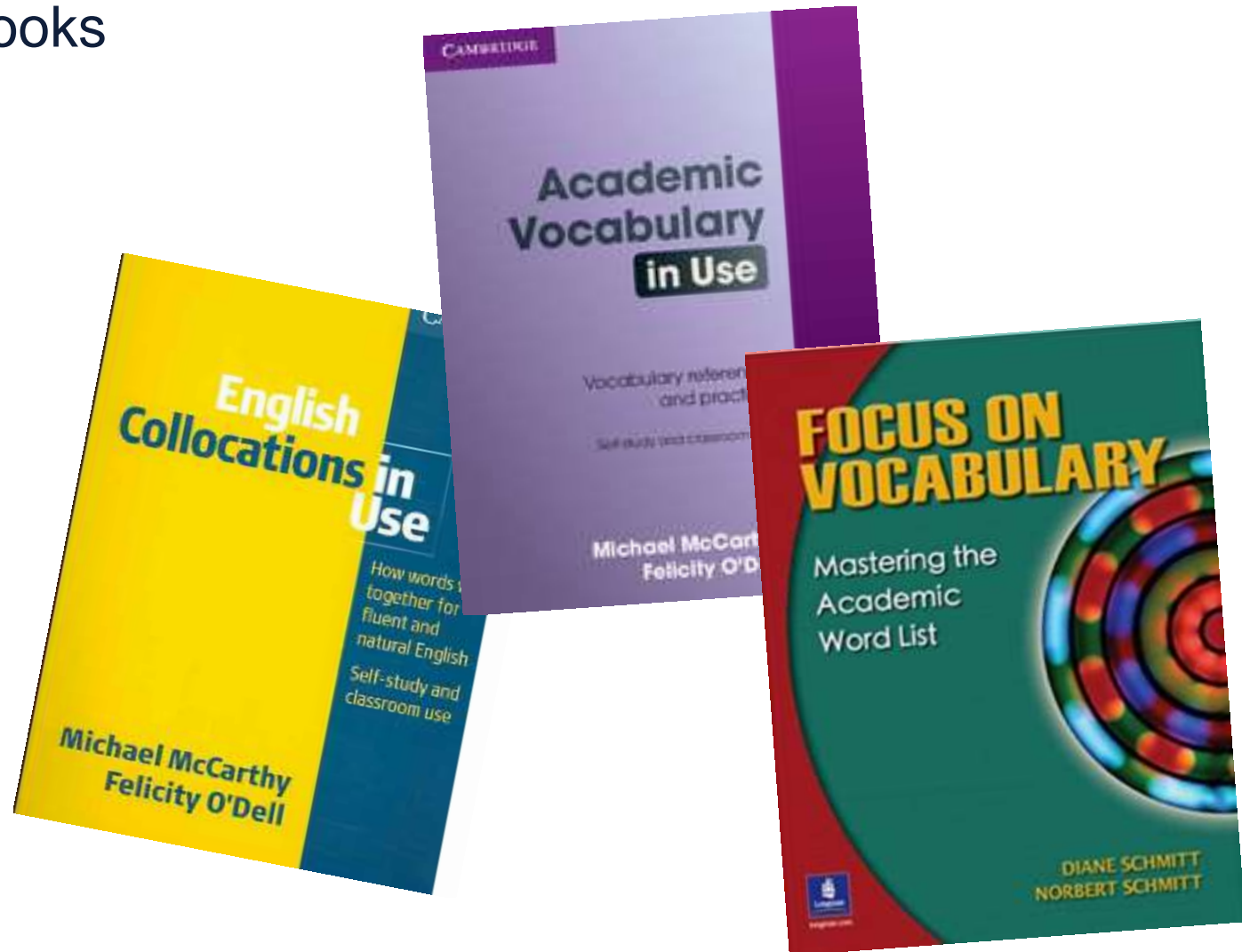


Find the right words you need

1. Not feasible to contemplate every possible collocation in a language
2. Focus on collocations for a specific group of real world users
3. Importance of English as a lingua franca for the dissemination of science (Jenkins 2014)
4. There are no native speakers of academic language (Hyland 2006, Kosem 2010, Frankenberg-Garcia 2017)
  - Of use to both native and non-native writers who do not have sufficient command of EAP collocations



## Textbooks



## General English Dictionaries for Learners


[https://www.macmillandictionary.com/dictionary/british/research\\_1](https://www.macmillandictionary.com/dictionary/british/research_1)

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**research** - definition and synonyms ★★★



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NOUN [UNCOUNTABLE]  Pronunciation /rɪ'sɜ:(r)tʃ/  Pronunciation /'ri:sɜ:(r)tʃ/



Contribute to our Open Dictionary

the detailed study of something in order to discover new facts, especially in a university or scientific institution

*Recent research shows that babies in the womb can be influenced by music.*

*She teaches a lot of classes and doesn't have much time for her own research.*

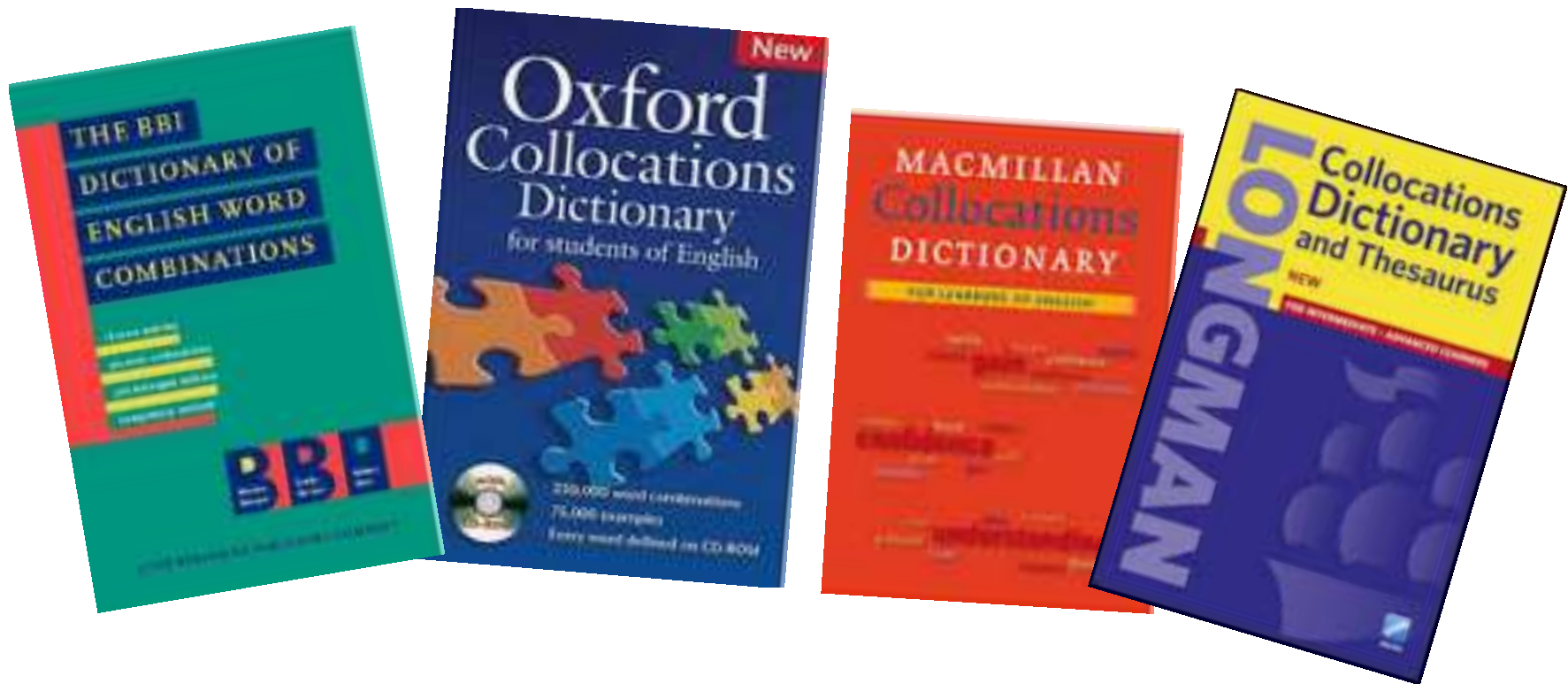
*medical/historical/linguistic research*

**research into:** *research into the causes of schizophrenia*

**research on:** *There is clearly a need for further research on this topic.*

**carry out research:** *Government scientists have carried out extensive research into the effects of these drugs.*

## General English Collocation Dictionaries



## The Academic Collocation List

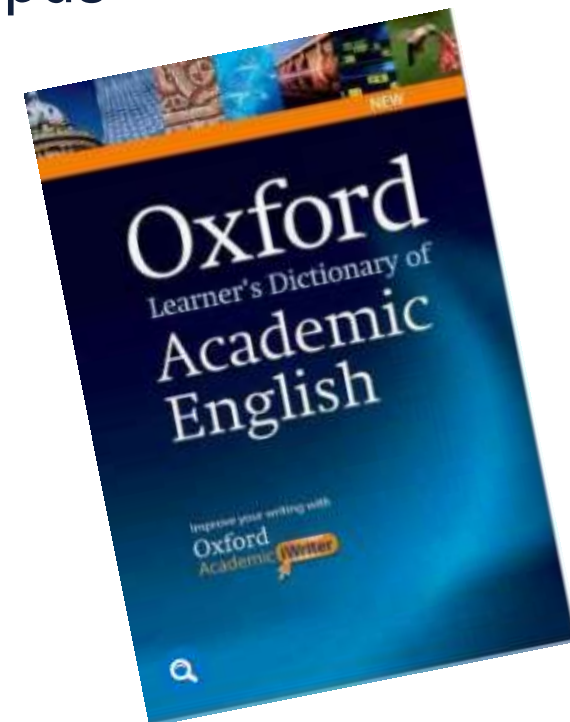
#	Addition	Component I	POS I	Component II	POS II	Addition
1		abstract	adj	concept	n	
2		academic	adj	achievement	n	
3		academic	adj	career	n	
4	(in)	academic	adj	circles	n	
5		academic	adj	community	n	
6		academic	adj	debate	n	
7		academic	adj	discipline	n	
8		academic	adj	discourse	n	
9		academic	adj	institution	n	
10		academic	adj	journal	n	
11		academic	adj	life	n	
12		academic	adj	performance	n	
13		academic	adj	research	n	
14		academic	adj	skills	n	
15		academic	adj	study	n	
16		academic	adj	success	n	
17		academic	adj	work	n	



2468 “pedagogically relevant” EAP collocations (Ackermann and Chen 2013:235)

## Existing help with EAP collocations

- Based on the Oxford Corpus of Academic English
- “700 of the most important, collocationally prolific words [given] a separate section of the entry... in the style of a collocations dictionary” (Lea 2014:185)
- Example sentences derived from the corpus










## Existing help with EAP collocations (fixed phrases)

### Academic Formulas List Simpson-Vlach, R., & Ellis, N. (2010)

- 1 in terms of
- 2 at the same time
- 3 from the point of view
- 4 in order to
- 5 as well as
- 6 part of the
- 7 the fact that
- 8 in other words
- 9 the point of view of
- 10 there is a
- 11 as a result of
- 12 this is a
- 13 on the basis of
- 14 a number of
- 15 there is no
- 16 point of view
- 17 the number of
- 18 the extent to which
- 19 as a result

# Existing help with EAP collocations

Corpus of Contemporary American English       

SEARCH      FREQUENCY      CONTEXT      OVERVIEW

SEE CONTEXT: CLICK ON WORD (ALL SECTIONS), NUMBER (ONE SECTION), OR [CONTEXT] (SELECT) [\[HELP...\]](#) COMPARE

	<input type="checkbox"/> CONTEXT	ALL	SPOKEN	FICTION	MAGAZINE	NEWSPAPER	ACADEMIC	1990-1994	1995-1999	2000-2004	2005-2009	2010-2015	ALL	%	MI
1	<input type="checkbox"/> CENTER	5789	578	78	1613	1490	2030	815	922	1181	1217	1654	153919	7.52	4.85
2	<input type="checkbox"/> DEVELOPMENT	3871	341	47	710	672	2101	851	821	697	631	871	111382	6.95	4.74
3	<input type="checkbox"/> INSTITUTE	3825	280	59	1274	899	1313	659	611	691	722	1142	39673	19.28	6.21
4	<input type="checkbox"/> FUTURE	3775	28	7	101	29	3610	374	399	731	959	1312	115874	6.52	4.65
5	<input type="checkbox"/> EDUCATION	3434	74	4	224	233	2899	375	411	465	584	1599	165391	4.15	4.00
6	<input type="checkbox"/> UNIVERSITY	2800	171	46	772	556	1255	400	456	547	576	821	171482	3.27	3.65
7	<input type="checkbox"/> NATIONAL	2730	171	12	630	463	1454	444	432	487	525	842	216481	2.52	3.28
8	<input type="checkbox"/> PREVIOUS	2590	9	2	69	32	2478	265	288	495	692	850	44127	11.74	5.50
9	<input type="checkbox"/> RESEARCH	2484	169	22	243	218	1832	347	380	413	556	788	173611	2.86	3.46
10	<input type="checkbox"/> STUDY	2457	74	18	213	151	2001	244	270	431	526	986	177856	2.76	3.41
11	<input type="checkbox"/> CONDUCTED	2246	49	17	291	170	1719	296	359	473	539	579	28883	15.55	5.90
12	<input type="checkbox"/> FURTHER	2237	36	17	173	73	1938	324	331	409	520	653	74849	5.98	4.52

Collocates of *research* in COCA  
<https://corpus.byu.edu/coca/> (Davies 2008)




## Learning Collocations

 in  

Family words: *researched researcher researchers researches researching*

[Synonyms](#)


### used as a noun

research + noun	 <b>research</b> project	303	 <b>research</b> contract	103
	 <b>research</b> programme	237	 <b>research</b> work	102
	 market <b>research</b>	209	 <b>research</b> students	95
	 <b>research</b> findings	141	 <b>research</b> interests	82
	 <b>research</b> team	130	 <b>research</b> methods	80

<http://flax.nzdl.org/greenstone3/flax?a=fp&sa=collAbout&c=collocations>



## Learning Collocations















 [My Cherry Basket](#) [Activities](#)

in


Family words: *researched researcher researchers researches researching*


Synonyms

### used as a noun

research + noun	 <b>research projects</b> 2117	 <b>research group</b> 1100
	 <b>research projects</b> 2117	 <b>research work</b> 1040
adjective + research	 <b>research facility</b> 1034	 <b>research institutions</b> 914
	 <b>research activities</b> 900	 <b>research activities</b> 900
	 <b>research</b> >>> more	 <b>research</b> 702
	 <b>research</b> 694	 <b>research</b> 615
	 <b>research</b> 550	 <b>research</b> 540

- ACT-R, a cognitive architecture used in a large number of **research projects**.
- (A few **research projects** are developing CPUs based on asynchronous circuits.)
- One of Steinmetz's great **research projects** was centered with the phenomena of lightning.
- Complete race history of all Brabham F1 models from 1966 to 1982 and links to Brabham **research projects** on other models.
- Students write and submit SURF proposals for **research projects** in collaboration with professors, and about 70 percent of applicants are awarded SURFs.
- BMW itself was not implicated in the documentary, and the firm has

**SkEL**   Examples Word sketch Similar words More features

**research** noun *switch to [research](#) (verb)* **Context** 

**verbs with research as subject**

suggest show focus indicate reveal demonstrate find involve examine aim support confirm investigate  
identify prove


**verbs with research as object**

conduct fund undertake do publish focus support need perform pursue sponsor pioneer promote  
apply continue

**adjectives with research**

ongoing assistant underway online relevant necessary vital essential important critical first available

<http://skell.sketchengine.co.uk/run.cgi/skell>  
(Baisa & Suchomel 2014)

SkEL   [Examples](#) [Word sketch](#) [Similar words](#) [More features](#)

## research + suggest 2.09 hits per million

- 1 Some **research suggests** moods are related to overall job satisfaction.
- 2 Additional **research suggests** the social component of ritual.
- 3 Further **research suggests** cosmic dust might have skewed the results.
- 4 Other **research suggests** that later training is associated with problems.
- 5 Some **research** has **suggested** that exercise may have antidepressant effects.
- 6 This **research suggests** independence of episodic and semantic musical memory.
- 7 Some **research suggests** alternate estimates to the accepted workforce size.
- 8 Some **research suggests** an association between personality and job satisfaction.
- 9 The same **research suggests** they may have fought barefoot.
- 10 Recent **research suggests** that this is untrue.



UCL  
Université  
catholique  
de Louvain

## The Louvain EAP dictionary

Search word:

Go!

### Headwords

research (n.)

### research (n.)

the detailed study of a subject in order to find out new facts or information about it

*Research into the impact of the media in Britain is not extensive.*

### Warning!

The noun *research* is rarely used in the plural.

- Another example concerns scientific *researches*.
- Another example concerns scientific *research*.

### Collocations

#### Adj + research

recent, further, empirical, previous, future, scientific, academic, extensive, detailed, current

#### V + research

conduct, carry, undertake, need, base, require, publish, review, discuss, support, fund, encourage, stimulate

#### research + V

show, suggest, indicate, reveal, demonstrate, support

### Lexical bundles

## Existing help with EAP collocations

### In summary

- Excellent general English resources (which include EAP)
- Excellent specific EAP resources

### But some limitations

- If curated (e.g. dictionaries, textbooks), limited coverage
- If not curated (COCA, SkELL, Flax), noise
- But some combine curated and non-curated data (Louvain)
- Learners will not look up collocations if they are not aware of their shortcomings
- Learners have to stop writing to use collocation resources (which may impair word flow)

Write & Improve <https://writeandimprove.com/>



Cambridge English

# Write & Improve

→ Sign In

## It's simple

- 1) Choose a topic
- 2) *Write* about it in English
- 3) Get instant feedback
- 4) *Improve!*

Write & Improve is a free service for learners of English to practise their written English. Submit your written work and receive feedback in seconds, covering spelling, vocabulary, grammar and general style.

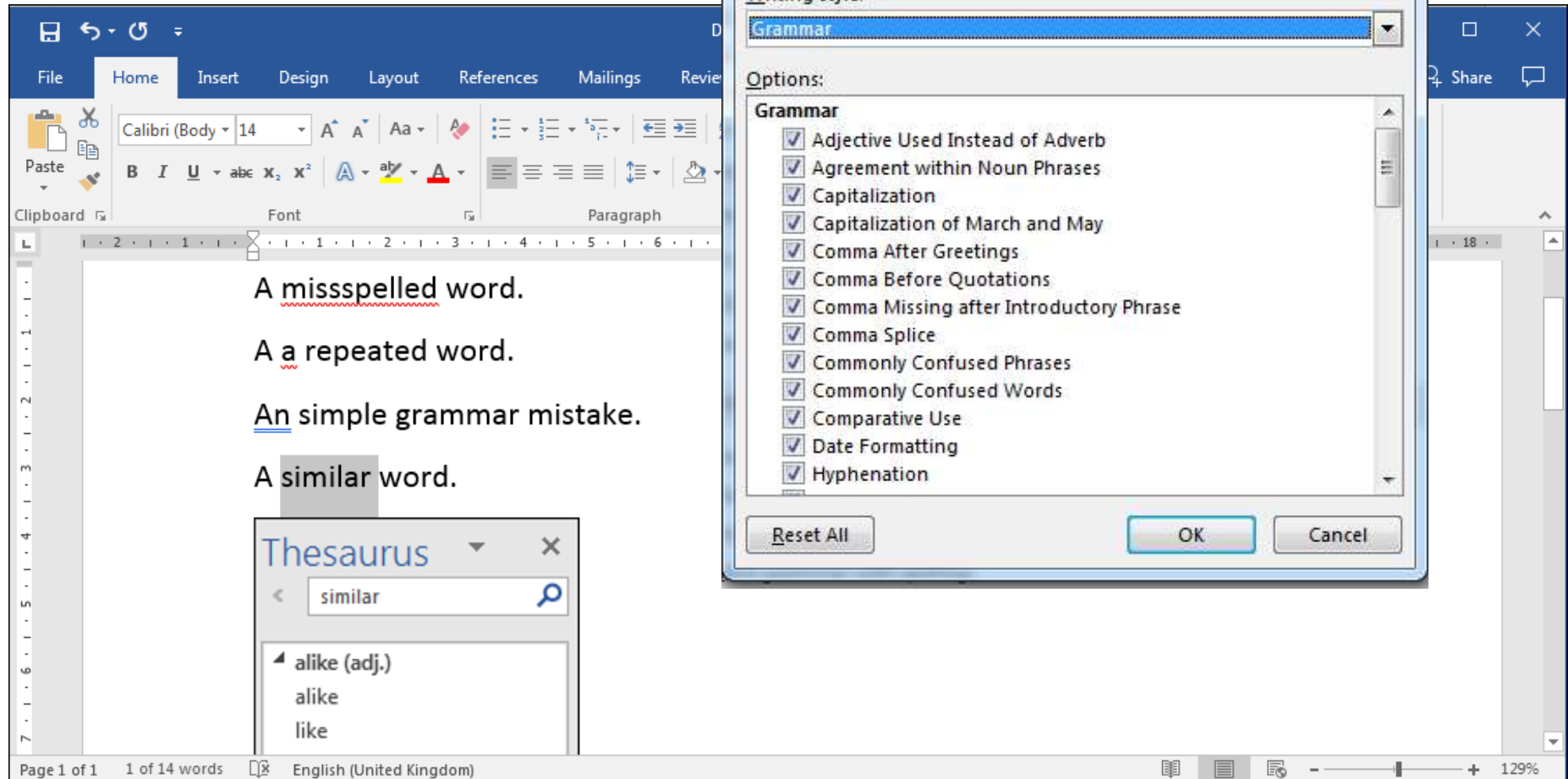
Start writing →

The exciting new way to improve your English

The banner features a woman with glasses working on a laptop, overlaid with a large white question mark on a blue background. The text is in white and black, with a 'Sign In' link in the top right corner.

# Existing real-time help with writing

## MS-Word



Clipboard

File Home Insert Design Layout References Mailings Review

Calibri (Body) 14 A A Aa A

Paste B I U abc x<sub>2</sub> x<sup>2</sup> A a A

Font Paragraph

1 2 3 4 5 6 7

A misspelled word.

A a repeated word.

An simple grammar mistake.

A similar word.

Thesaurus

< similar

alike (adj.)

alike

like

Page 1 of 1 1 of 14 words English (United Kingdom) 129%

Grammar Settings

Writing style: Grammar

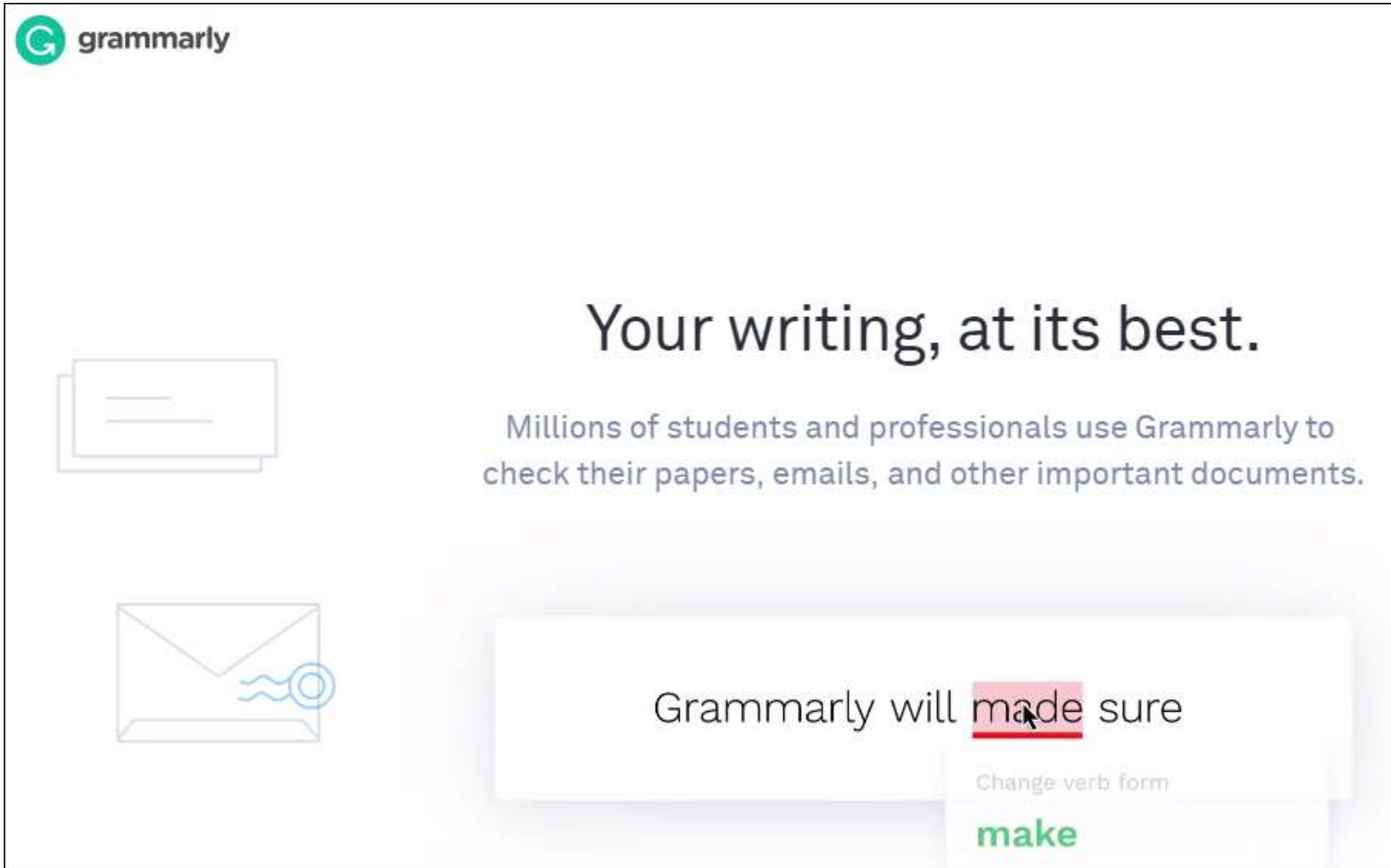
Options:

Grammar

- Adjective Used Instead of Adverb
- Agreement within Noun Phrases
- Capitalization
- Capitalization of March and May
- Comma After Greetings
- Comma Before Quotations
- Comma Missing after Introductory Phrase
- Comma Splice
- Commonly Confused Phrases
- Commonly Confused Words
- Comparative Use
- Date Formatting
- Hyphenation

Reset All OK Cancel

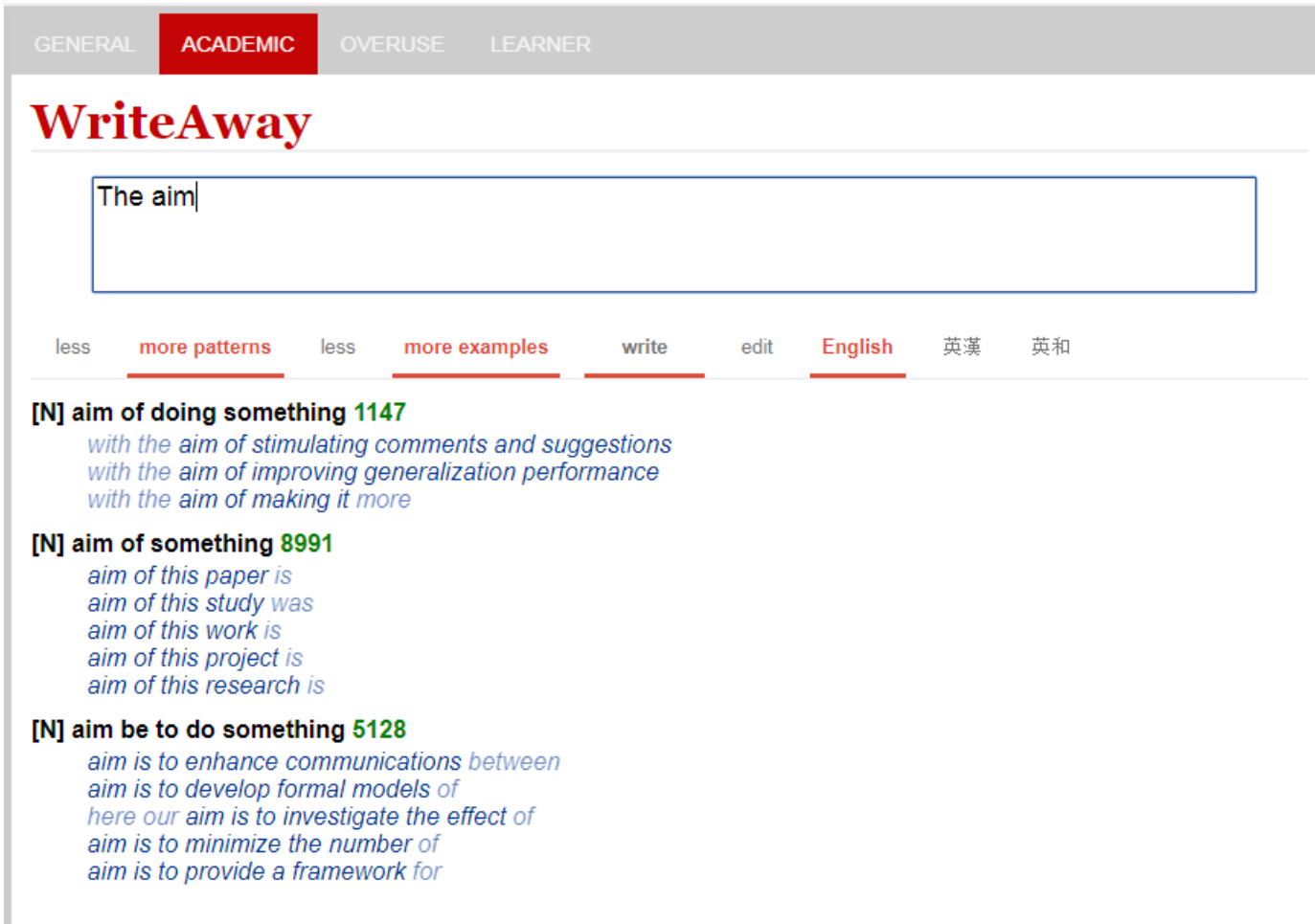
## Grammarly <https://www.grammarly.com/>



The screenshot shows the Grammarly website homepage. In the top left corner is the Grammarly logo, which consists of a green circular icon with a white 'G' and the word 'grammarly' in a lowercase, sans-serif font. Below the logo, on the left side, are two line-art icons: one of a document with lines representing text, and another of an envelope with a circular seal and wavy lines. In the center of the page, the headline reads 'Your writing, at its best.' Below this headline is a sub-headline: 'Millions of students and professionals use Grammarly to check their papers, emails, and other important documents.' At the bottom of the page, there is a large white rectangular box with a subtle shadow. Inside this box, the text 'Grammarly will made sure' is displayed. The word 'made' is underlined in red, and a mouse cursor is positioned over it. Below the underlined word, a dropdown menu is visible, showing the text 'Change verb form' and the word 'make' in a green, bold font.



## WriteAway (<http://writeaway.nlpweb.org/>)



The screenshot shows the WriteAway website interface. At the top, there are navigation tabs: GENERAL, ACADEMIC (highlighted in red), OVERUSE, and LEARNER. Below the tabs is the title "WriteAway" in a large, bold, red font. A text input field contains the text "The aim|". Below the input field, there are several navigation links: "less", "more patterns" (highlighted in red), "less", "more examples" (highlighted in red), "write", "edit", "English" (highlighted in red), "英漢", and "英和". The main content area displays three categories of examples for the word "aim":

- [N] aim of doing something 1147**
  - with the aim of stimulating comments and suggestions*
  - with the aim of improving generalization performance*
  - with the aim of making it more*
- [N] aim of something 8991**
  - aim of this paper is*
  - aim of this study was*
  - aim of this work is*
  - aim of this project is*
  - aim of this research is*
- [N] aim be to do something 5128**
  - aim is to enhance communications between*
  - aim is to develop formal models of*
  - here our aim is to investigate the effect of*
  - aim is to minimize the number of*
  - aim is to provide a framework for*

## Existing real-time help with writing

### In summary

- Some truly innovative tools for real-time help during writing

### But some limitations

- Mostly reactive feedback
- Feedback can be
  - prescriptive
  - distracting
  - intrusive
  - annoying

# What's different about Collocaid?



Find the right words you need

- Will help EAP users with collocations in real time
- Raising awareness of collocation problems

A small increase of temperature

✗ Do not say **increase of** something  
✓ Say **increase in** something

# What's different about Collocaid?



Find the right words you need

- Not just correcting reactively, but helping to learn
- Raising awareness of collocations EAP users may not remember to look up in the first place

Research done as a result of...

- conduct research +
- research suggests +
- emp
- rese
- conduct research +
- carry out research +
- undertake research +

- **research carried out** in the 1990s identified...
- before any **research** is **carried out**, it is essential that...
- this may mean that **research** can only be **carried out** in the dry season

# What's different about Collocaid?



Find the right words you need

- Customizable
- Option to switch off real-time help and check text at the end

A small increase of temperature..

Research done as a result of..

- Useful for revising and proofreading

# What's different about Collocaid?



Find the right words you need

- Customizable in more than one way

Research one as a result of...

- conduct research +
- research suggests +
- empirical research +
- research on something +

Hide

Restore hidden prompts

- research
- hypothesis
- analyse

# What's different about Collocaid?



Find the right words you need

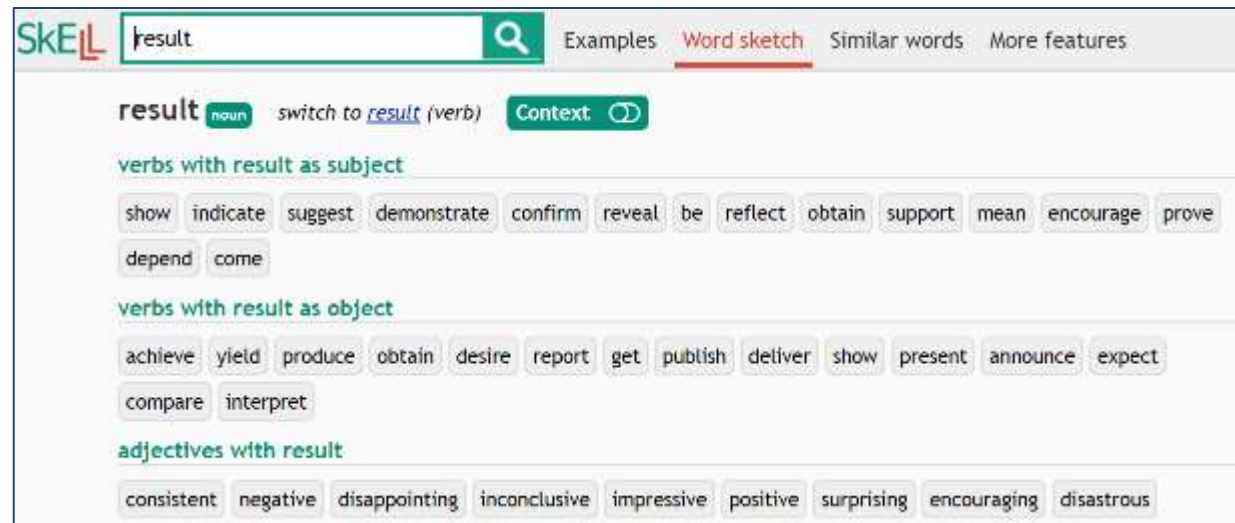
- Prompts will be kept to a minimum, so that
  - they do not occupy too much screen space
  - users don't have to read lengthy explanations
- Metalanguage will be avoided, so that users don't have to know or decypher grammatical terminology
- Lexicographic data will be curated so that
  - we provide just the right amount
    - less is more
  - users don't get distracted from their writing with
    - irrelevant or misleading information
    - an overload of information

# What's different about Collocaid?



- But will provide links to non-curated collocation data not covered in Collocaid

The results of the..



SKELL result   Examples Word sketch Similar words More features

**result** noun switch to [result](#) (verb)

**verbs with result as subject**

show indicate suggest demonstrate confirm reveal be reflect obtain support mean encourage prove  
depend come

**verbs with result as object**

achieve yield produce obtain desire report get publish deliver show present announce expect  
compare interpret

**adjectives with result**

consistent negative disappointing inconclusive impressive positive surprising encouraging disastrous

- User logs feed back to Collocaid database



# What's different about Collocaid?

**collocaid**

Find the right words you need

- Usability testing will be a priority





Find the right words you need

## Compilation of 500 maximally useful collocation bases

- Academic Vocabulary List (AVL) (Gardner & Davies 2014)
  - Data from COCA\_academic
  - Expert writing
- Cross-disciplinary AVL use in student writing (Durrant 2016)
- Academic Keyword List (Paquot 2010)
  - General English words frequently used in EAP
  - *increase, study...*



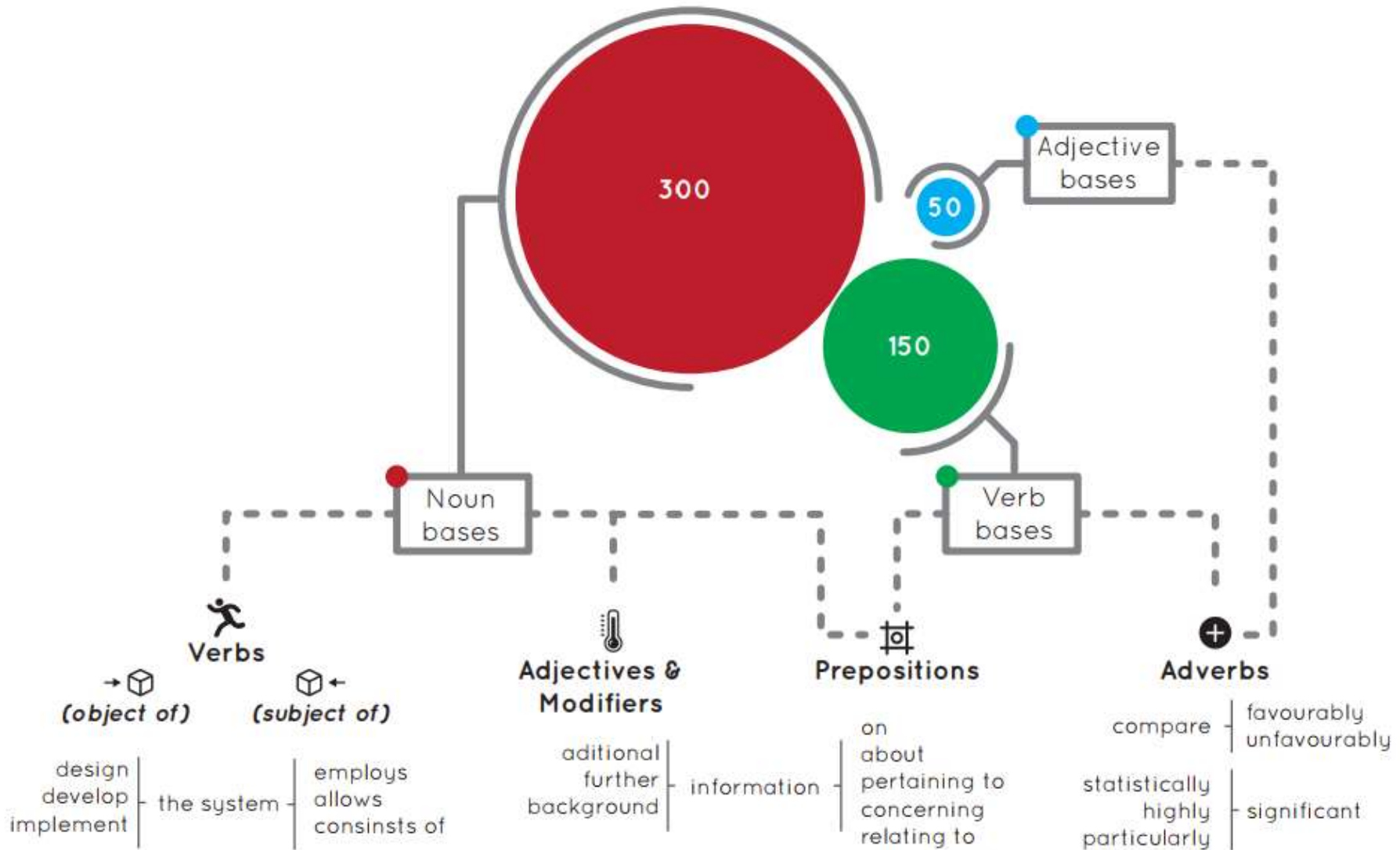
Find the right words you need

Selection of strong collocates from EAP corpora

- Pearson International Corpus of Academic English, 37M
- Oxford Corpus of Academic English, 85M

Sketch Engine (Kilgariff et al. 2004)

 datum (noun) PICA E 2010	 analyse (verb) PICA E 2010	 significant (adjective) PICA E 2010																																													
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Find the right words you need

## Selection of good corpus examples from PICAE & OCAE

- Not too long, not too difficult
  - screen space
- Three examples of each (Frankenberg-Garcia 2014)
- Collocation highlighted in examples (Dziemianko 2014)

- **research carried out** in the 1990s identified...
- before any **research** is **carried out**, it is essential that...
- this may mean that **research** can only be **carried out** in the dry season



Find the right words you need

At the same time...

Research problematic EAP collocations

- Learner corpora
  - BAWE, ICLE, Open Cambridge Learner Corpus
- Existing resources (“get it right” & “error warning” boxes)
- Crowdsourced feedback ([collocaid.uk](http://collocaid.uk))



At the same time...

Research visualisation and graphical techniques to help writers in a maximally helpful and minimally intrusive way (Roberts et al. 2017)



Find the right words you need

## Seek expert feedback from colleagues

Develop a **prototype** to test with EAP users

- build a prototype +
- a prototype featuring +
- an experimental prototype +
- a prototype of something +



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