Comparing Dictionary Lookup Expertise
Two Groups of English Learners

Donna M. T. Cr. Farina, Marjeta Vrbinc, Alenka Vrbinc
New Jersey City University, University of Ljubljana
dfarina@njcu.edu, marjeta.vrbinc@ff.uni-lj.si, alenka.vrbinc@ef.uni-lj.si

Abstract

Studies of two distinct groups of undergraduate students looking up words in an online learner's dictionary investigated habits of dictionary use, lookup abilities and lookup problems as well as perceptions of the quality and usefulness of definitions and illustrative examples. Both student cohorts attended the University of Ljubljana; one cohort majored in English and could be deemed language specialists (Vrbinc et al. 2023). This cohort was compared with a group of undergraduates majoring in business and economics (Farina et al. 2019). Study participants had to read nine contexts, each containing a clearly-marked English common word used in an infrequent meaning. After reading each context, the study participants attempted to locate the uncommon meaning in an online learner's dictionary. Both of these user studies employed a script of fourteen questions; before, during, and after their lookup activities participants were asked the interview questions. At the time of the both studies, the online dictionary used was the *Merriam–Webster Learner's Dictionary*, now rebranded as *The Britannica Dictionary*. The two studies revealed that the participants varied significantly in how well they grasped the dictionary information presented and in how well they could retrieve relevant information.

Keywords: dictionary use; user study; online dictionary; learner's dictionary; definition; examples; part of speech

1 Introduction

Dictionaries are primarily targeted toward an audience with education, but an audience of non-language specialists (see Béjoint 2010). These educated users seek swift access to specific information; they are not interested in the leisurely browsing of a lexicographic masterpiece but in moving on with whatever non-dictionary task they are engaged in. The primary task of lexicographers is to develop online dictionaries that can accommodate such users who do not have an extensive grasp of linguistic principles (cf. Gouws 2014; Lew & De Schryver 2014). However, this leads to the question: To what extent does the general educated user differ from an individual who does have a background more aligned with that of a professional lexicographer? Do such language specialists demonstrate enhanced

performance in dictionary look-up tasks? If (as we would expect) they do perform better, then to what degree is the specialist's performance enhanced?

2 Methodology

This paper compares two separate investigations (Farina et al. 2019; Vrbinc et al. 2023) of dictionary lookup behavior in two distinct cohorts of third-year undergraduate students at the University of Ljubljana, Slovenia. The first cohort, consisting of nine people, pursued studies within the School of Economics and Business (SEB group), while the second cohort, consisting of eight participants, studied English in the Faculty of Arts (FA group).

Participants in both cohorts were tasked with deciphering the meanings of nine commonplace English words that were used in an uncommon sense, in nine contexts. After reading a context in which the target word was underlined and boldfaced, participants had to locate the infrequent sense of that context within an unfamiliar American English learner's dictionary. At the time of both studies, this dictionary was called the *Merriam–Webster Learner's Dictionary*; it has been rebranded as *The Britannica Dictionary*. The nine lexical items used in both studies are:

tax (verb)
fix (verb)
score (verb)
pitch (noun)
plug (noun)
ticket (noun)
sharp (adjective)
mean (adjective)
rich (adjective)

For instance, consider one of the contexts used, below. The word *tax* (verb) is not used in the conventional sense of "to force someone to pay a tax," but in the infrequent sense of "to stress someone/something or to require a lot of effort of someone/something":

> This small desert nation of six million opened its doors to the newcomers but was quickly overwhelmed as they gobbled up jobs, **taxed** scarce water resources and forced schools into double shifts. About two-thirds of the refugees are squatting in Jordanian cities and villages, but the pathos and problems are most profound in Zaatari [...]. (Rudoren 2013)

This particular meaning proved to be challenging, especially for the SEB cohort, as will be shown.

Participants from both cohorts were asked to explain to the researchers what they were thinking while conducting the word lookups in the online dictionary. The researchers both observed and documented what the students did during lookup and what problems they had along the way (Hatherall 1984; Merriam 2009; Qu & Dumay 2011; Rubin & Rubin 1995). Prior to, during, and subsequent to the lookup activity, the participants discussed their dictionary usage habits and provided insight into their perceptions of the dictionary definitions and examples.

3 Analysis
3.1 Frequency of Use and Heightened Awareness

It comes as no surprise that a more frequent use of dictionaries correlates with enhanced lookup performance. The superior dictionary proficiency of the students from the Faculty of Arts (FA) compared to their counterparts in the School of Economics and Business (SEB) in recognizing infrequent meanings of common words is to be expected. As English majors, the FAs used dictionaries extensively and were trained in their use.

The FA participants reported that their consultation of dictionaries occurred minimally several times per week, while the SEB group reported a minimum usage of a few times per month. As for maximum usage, some SEB participants claimed they used dictionaries on a weekly basis, in contrast to the FA students who maximally employed dictionaries daily. This statement from a Faculty of Arts participant exemplifies the full group's extensive involvement in dictionary activities:

"If I don't find the exact thing [being sought] then I explore."

The FA group's heightened awareness that the meanings under their consideration were not commonplace contributed to their superior lookup performance, whereas the SEBs displayed less awareness and encountered more lookup difficulties. In the examination of the nine target words presented in specific contexts, the FAs accurately identified the correct sense in the dictionary for eight, whereas the SEBs chose only five senses correctly.

3.2 Lookup Challenges

Three words posed particular challenges for the SEBs: the verb *tax* and the adjectives *sharp* and *mean*. For *tax*, seven out of eight FAs selected the correct sense; five of nine SEBs erroneously opted for the *Britannica Dictionary* Sense 1 and not the correct (and infrequent) Sense 2:

1
a : to require (someone) to pay a tax
b : to require someone to pay a tax on (something) — often used as *(be) taxed*

2
: to require a lot from (something or someone) **:** to put demands on (something or someone)

The SEBs' initially proposed definitions, offered prior to the lookup process but following the reading of the provided context for *tax*, aligned with Sense 1, the common meaning of *tax*. Due apparently to their initial confidence that they knew the meaning of *tax*, the SEBs were unable to alter their opinion during the lookup process. Not all SEBs followed this pattern; among the four who eventually chose the correct Sense 2 for *tax*, three of them first first entertained the incorrect Sense 1. Nevertheless, they gradually abandoned this choice and moved over to the infrequent and correct Sense 2. One of the SEBs who transitioned to the correct meaning remarked that it was "not the same as what I thought."

Regarding the adjective *sharp*, the process that the researchers witnessed was comparable to that observed for *tax*. Ultimately, six out of nine SEBs arrived at the correct interpretation of *sharp* as contained in the following context, while seven out of eight FAs did so:

Her rock 'n' roll friends might have expected a hip 'n' cool outfit for her English country wedding. But it was her husband, Jamie Hince, the guitarist from The Kills, in his **sharp** blue Yves Saint Laurent suit, who brought a touch of music-world fantasy. (Menkes 2011)

The time invested varied significantly between the two groups, with four SEB students using considerable time moving back and forth between correct and incorrect senses in the *Britannica Dictionary*, and three of these four eventually selecting the correct sense:

12 *informal* **:** stylish or fashionable
He's a *sharp* dresser.
a *sharp* outfit
You're looking very *sharp* today.

Looking up the correct sense of *sharp* posed a challenge for both sets of participants due to the dictionary's listing of 13 different senses, with the correct one being #12, almost last. However, the SEBs spent a substantial amount of time not only on *sharp* but on all words. It was almost always difficult for them to relinquish their preconceived notions of the meanings of the target words, and they took considerable time to align with the correct senses tied to the provided contexts. In a scenario where the SEBs were not participating in a study requiring the selection of just one meaning, it is doubtful that they would have persevered.

On *tax*, *mean*, and *sharp*, the FAs outperformed the SEBs. The FAs made swift choices for *tax*, barely considering the incorrect sense. For *sharp* and *mean*, there was some vacillation among the FAs between a more common sense and the correct, infrequent sense. However, compared to the SEBs, the FAs exhibited a faster transition to the correct senses that would become their final answers. It is worth pointing out that while the FAs took longer to arrive at their answers for *sharp* than for the other eight words of their study, their overall performance in terms of both correct answers and lookup duration was superior, for *sharp* as well as for *tax* and *mean*.

3.3 Part of Speech

The philologist-FAs demonstrated superior performance in lookup tasks as compared to the SEBs. The SEBs encountered more challenges in navigating meaning, primarily due to their limited sensitivity to unknown aspects of meaning (infrequent meanings) in the contexts that they read. Moreover, factors not directly related to word meaning impacted performance. The SEBs faced more difficulties recognizing the part of speech of words, both in the contexts and in the dictionary entries, compared to the FAs. While the FAs had fewer issues, they were not entirely exempt from the challenge of recognizing part of speech in English.

The noun *plug* posed the most difficulty for the FAs, with five out of eight correctly identifying the sense. Of the three FAs who gave incorrect responses on this item, two struggled to recognize that *plug* in their context was a noun:

Microsoft says that the wireless sharing is a new way to discover music. But you can't shake the feeling that it's all just a big **plug** for Microsoft's music store. If it's

truly about the joy of music discovery, why doesn't Microsoft let you buy your discoveries from any of the PlaysForSure stores? (Pogue 2006)

These FAs who struggled opted for a verb sense in the *Britannica Dictionary* that is semantically linked to the correct noun sense:

[2] plug /ˈplʌg/ ***verb***
plugs; **plugged**; **plugging**
[+ object]
…

2 : to praise (something, such as a book, movie, or restaurant) publicly in a way that makes people want to buy it, see it, etc. **:** to advertise (something) by talking about it especially on the radio or television
One of the DJs on the local radio station has been *plugging* the band's new album.

The SEBs performed unusually well on *plug*, with eight out of nine providing the correct answer:

[1] plug /ˈplʌg/ ***noun***
plural **plugs**
[count]
…

6 : something that is said on the radio, on television, etc., in order to create interest in something (such as a book, movie, or restaurant) — often + *for*
I heard a *plug for* that café on the radio.
He **gave a plug for** [=talked about] his new film during the interview.
She **put in a plug for** the band's new album on her radio program.

However, this good performance on *plug* did not mitigate the overarching issue faced by the SEBs throughout their study—identifying part of speech. As has been noted, part of speech was generally less problematic for the more linguistically adept FAs.

3.4 Definition

A substantial majority within both undergraduate cohorts expressed the belief that the definition represents the most valuable component of the dictionary entry. The two groups agreed on the overarching utility of the definition in comparison to other elements within the entry. The FAs could often identify particular words or segments within the definition that they found to be the most useful, whereas the SEBs did so less frequently.

A difference of opinion between the two cohorts emerged regarding the definition in two entries. First, we will examine the noun *fix*, which had the following context in both studies:
ROVANIEMI, Finland—A man arrived at the police station here in 2011 with an unusual tip. He told the police that a Singaporean man was **fixing** matches with the local professional soccer team. The police were incredulous. (Seelye 2018)

All eight of the FAs regarded the definition of the noun *fix* as the most useful, while only four out of nine SEBs agreed:

[1] fix /ˈfɪks/ ***verb***
fixes; **fixed**; **fixing**
[+ object]
…
5 : to control or affect (something, such as a game or election) in a dishonest way
They were accused of *fixing* games in college.
The election was *fixed*.
fix a parking ticket [=arrange for someone to not have to pay a fine for parking illegally]

The second difference of opinion of the two cohorts is the case of the noun *ticket*, with the context as shown below:

The state's Republican chairman, Edward F. Cox, offered a respectful, if cautious statement about Mr. Kolb's candidacy. 'We're glad he has formally announced his intentions,' Mr. Cox said, before saying he was excited by the possibility of other candidates, too. [. . .] He added that the party would be 'working collaboratively with our county chairs over the coming weeks and months to put together the statewide **ticket**.' (Mckinley 2017)

All nine SEBs agreed that the definition was the most useful, whereas only two out of eight FAs held this view:

[1] ticket /ˈtɪkət/ ***noun***
plural **tickets**
…
5 [singular] *chiefly US* **:** a list of the candidates supported by a political party in an election
The senator heads her party's *ticket*. [=she is the leader of her party in the election]
the Republican/ Democratic *ticket*
— see also split ticket, *split the ticket* at [1]split

3.5 Illustrative Examples

The participants in both studies infrequently expressed a preference for illustrative examples over definitions. Variations of the sentiment, "If the definition is good, you don't need examples" were recurrent among the FAs. In contrast, the SEBs did not appear to perceive a conceptual link between the definition and examples; they mentioned that they only consulted examples when they felt a specific "need" for them.

The SEBs, it seemed, had never given any thought to examples until they were actively examining them. This stands in stark contrast to the FAs, who clearly had already developed numerous opinions about dictionary illustrative examples prior to their participation in our study.

4 Conclusions and Recommendations

These two qualitative studies, involving direct observation of dictionary users along with a "think aloud" process as they worked with an online learner's dictionary, provide insights that would be unattainable through other means.

4.1 Who is Sharper?

In particular, at looking up *sharp* and the other target words, the University of Ljubljana English majors from the Faculty of Arts had greater proficiency than their counterparts in the School of Economics and Business. The SEBs took a different approach than did their FA peers and did not achieve the same positive result (i.e., location of the correct sense without great expenditure of time) for their efforts.

While it is a reasonable expectation that the English philology students would exhibit greater "dictionary-awareness" and outperform other educated dictionary users, a detailed understanding of how and why the FAs excelled is crucial, because potentially this knowledge could impact the design of future dictionaries.

4.2 Do They Know the Road?

The FAs' consistent success in lookup tasks can be attributed to their pre-existing schema of the structure of a dictionary, its components, and how to navigate it. The FAs knew the dictionary road and had traveled it frequently. Conversely, the SEBs did not have the same knowledge base: they did not have an internal "dictionary map" and relied on a "GPS," an imperfect one at that, often subject to "recalculation." The ride through the dictionary was often frustrating for them, such as when the SEBs navigated through parts that they perceived of as "noise" (see Farina et al. 2019). It is important to recognize that the SEBs are like most general educated dictionary users. Assumptions from the lexicographer about the familiarity of such users with their products are likely to lead to unsatisfactory lookup outcomes.

4.3 Will the Trip Be Too Long?

Taking the example of looking up *sharp*, the main challenge for SEB users was the positioning of the correct information (Sense 12 of 13). Many SEBs were not persistent in navigating their way that far down the entry, and some were misled by an earlier sense (#3) so they failed to explore further. This issue of lookup persistence is relevant not only to the *Britannica Dictionary* used in the two studies being discussed here, but to other online learner's dictionaries as well, where the correct sense is also positioned deep within the entry. The *Longman Dictionary of Contemporary English* has this sense of *sharp* as #12 of 16 and the *Oxford Advanced Learner's Dictionary* has it as #12 out of 15. Simply put, many (or most?) users will not travel this great distance, notwithstanding the quality of the information that they could potentially find.

4.4 Do They Enjoy Going There?

Beyond the issue of navigating long entries, these two studies revealed that dictionaries lack personal significance for SEBs. Unlike FAs, SEBs do not have a preferred dictionary; they perceive dictionaries as nameless entities: a dictionary for the SEBs is not a "thing." This distinction is crucial; for the FAs, dictionaries are part of their (pleasant) life experience, and this influences their online consultation behavior.

For lexicographers and future lexicographic work, these findings underscore the importance of addressing scrupulously the needs of users similar to the SEBs. We cannot afford for online lexicographic products to remain rooted in the same formats as the print dictionaries of the past, and we cannot make assumptions about how familiar the general educated user is with either online or print lexicographic media. Finally, dictionary formats cannot be designed as if the FAs are the primary target users, because there are few users out there like the FAs. Users similar to the FAs can handle easily any flaws in a dictionary's presentation of information; their navigation skills and experience are such that they can drive without a GPS. But if the more typical, SEB-type user is led astray, they will hesitate before ever turning to an online dictionary again.

Acknowledgements

References

Béjoint, H. (2010). *The Lexicography of English: From Origins to Present*. Oxford: Oxford University Press.

The Britannica Dictionary / Merriam-Webster Learner's Dictionary. Accessed at: https://www.britannica.com/dictionary. (BD)

Farina, D.M.T.Cr., Vrbinc, M. & Vrbinc, A. (2019). Problems in Online Dictionary Use for Advanced Slovenian Learners of English. In *International Journal of Lexicography*, 32(4), pp. 458–479. doi.org/10.1093/ijl/ecz017

Gouws, R.H. (2014). Article Structures: Moving from Printed to e-Dictionaries. In *Lexikos*, 24, pp. 155–177. doi.org/10.5788/24-1-1256

Hatherall, G. (1984). Studying Dictionary Use: Some Findings and Proposals. In R.R.K. Hartmann (ed.) *LEXeter '83 Proceedings*. *Papers from the International Conference on Lexicography at Exeter, 9–12 September 1983*. Tübingen: Max Niemeyer, pp. 183–189.

Lew, R. & de Schryver, G.-M. (2014). Dictionary Users in the Digital Revolution. In *International Journal of Lexicography*, 27(4), pp. 341-359. doi:10.1093/ijl/ecu011

Longman Dictionary of Contemporary English. Accessed at: https://www.ldoceonline.com/.

Merriam, S.B. 2009. *Qualitative Research: A Guide to Design and Implementation.* (Revised and expanded from *Qualitative Research and Case Study Applications in Education*). San Francisco, CA: Jossey-Bass.

Oxford Advanced Learner's Dictionary. Accessed at: https://www.oxfordlearnersdictionaries.com/.

Qu, S.Q. & Dumay, J. (2011). The Qualitative Research Interview. In *Qualitative Research in Accounting & Management*, 8(3), pp. 238–264. doi.org/10.1108/11766091111162070.

Rubin, H.J. & Rubin, I.S. (1995). *Qualitative Interviewing: The Art of Hearing Data*. Second edition. London: Sage Publications.

Vrbinc, M., Vrbinc, A. & Farina, D.M.T.Cr. (2023). The Lexicographer's Dream Audience: Dictionary Use among English Majors at a Slovenian University. In *International Journal of Lexicography*, 36(2), pp. 149–172. https://doi.org/10.1093/ijl/ecac019

References for Contexts

Mckinley, J. (2017). Republican Assemblyman Enters Race to Challenge Governor Cuomo. *New York Times*. December 12, 2017. Accessed at: https://www.nytimes.com/2017/12/12/nyregion/brian-kolb-cuomo-governor-new-york.html [*ticket*].

Menkes, S. (2011). 3 Weddings and a Dior Carnival. *New York Times*. July 4, 2011. Accessed at: https://www.nytimes.com/2011/07/05/fashion/first-dior-couture-show-since-john-gallianos-departure-offers-confetti-but-no-finesse.html [*sharp*].

Pogue, D. (2006). Trying Out the Zune: IPod It's Not. *New York Times*. November 9, 2006. Accessed at: https://www.nytimes.com/2006/11/09/technology/09pogue.html [*plug*].

Rudoren, J. (2013). A Lost Generation: Young Syrian Refugees Struggle to Survive. *New York Times*. May 8, 2013. Accessed at: https://www.nytimes.com/2013/05/09/world/middleeast/syrian-refugees-in-jordan-struggle-to-survive.html [*tax*].

Seelye, K. Q. (2018). 1 Son, 4 Overdoses, 6 Hours: Drug Deaths Draw the Most Notice, but More Addicted People Live Than Die. For Them and their Families, Life Can Be a Relentless Cycle of Worry, Hope and Chaos. *New York Times.* January 21, 2018. Accessed at: https://www.nytimes.com/2018/01/21/us/opioidaddiction-treatment-families.html [*fix*].