Online Dictionaries in the School: Pros and Cons

James Lambert

National Institute of Education, Singapore

Abstract

Dictionaries have long been an important part of language pedagogy. Dictionaries designed specifically for school-age learners have been in existence since the sixteenth century (for example, John Withals' *A Shorte Dictionarie for Yonge Beginners*, 1553), and today all major lexicographical publishing houses – Collins, Longman, Oxford, Merriam-Webster, etc. – a have a range of special-purpose dictionaries for learners from kindergarten to the final years of secondary school, all available as printed books. In the classroom of today, there is an increasing move away from print dictionaries towards using dictionaries available over the internet, especially those that the Google search engine places at the top of search results, namely *Dictionary.com* and those provided by some major lexicographical publishers. This raises the question of how suitable are these online dictionaries for school use. This research assesses three online dictionaries against a range of relevant factors (ease of look-up, pronunciation, use of colour, range of vocabulary, use of visuals, and interactivity) and suggests that perhaps the cons of online dictionaries may indeed outweigh the pros.

Keywords: Lexicography, online dictionaries, classroom dictionaries

Online Dictionaries in the School: Pros and Cons

Many teachers today use online dictionaries in the classroom. This is in keeping with the growing demand for greater incorporation of Information and Communication Technologies (ICT) into classroom practice right across the board. The push for more ICT is twofold. There is a top-down push from government education departments and ministries increasingly demanding the use of ICT and online resources, with online dictionaries being an obvious avenue to satisfy such demands. At the same time, a bottom-up push comes from both teachers, preferring online dictionaries for the sake of utility, and students who increasingly identify as 'digital natives' and show a strong preference for ICT use (Furlong & Davies 2012).

There are, however, stark differences between print and online dictionaries. Print dictionaries are the outcome of over 400 years of continual refinement, beginning with the first monolingual English dictionary, Cawdrey (1604), which covered just over 2,500 words, each supplied with a synonym or brief definition of only a few words in length. From this small beginning dictionaries grew not only in the extent of the vocabulary covered, but also in complexity of design through the addition of more extensive definitions, pronunciation guidance, etymologies, usage notes, grammatical labelling, subject labelling, and a host of other information types. Concomitant with the development of the dictionary structure, was the perfection of both book binding and print typography, as evinced in such typesetting and binding triumphs as the *Oxford English Dictionary* (Murray et al. 1888-1928) and the *Webster's Third* (Gove 1961), which remain to this day unsurpassed. This refinement in the art of lexicographical printing was partly driven by the desire to cover ever-increasing amounts of the ever-growing English language in dictionaries. In fact, the growing size of dictionaries pushed bookbinders to the very limits of physical possibilities, and led lexicographers to introduce many of the common

abbreviations that are a well-known part of modern dictionaries (e.g. *n.* = noun, *ppt.* = past participle, *v.t.* = transitive verb, *Gk* = Greek, *cf.* = confer, *mil.* = military). In addition to abbreviations, the need for extreme concision led lexicographers to develop a number of typographical conventions to signify changes from one information type to another, such as having headwords in bold sans serif font, part of speech labels in italic font, cross-references in small capitals, and so on. The upside of this was that these abbreviations and typographic conventions conserved space and allowed more dictionary content to be presented. The downside was that they placed a greater decoding burden on the dictionary user. So complex are modern-day dictionaries that, with few exceptions, they come with a how-to-use guide in the front matter.

With the widespread adoption of the World Wide Web in the 1990s, dictionaries were able to move to a new presentation platform. This platform offered a range of potential affordances that were not possible with print dictionaries. First, online dictionaries offer greater search capacity: fuzzy matching could handle spelling guesses and mistypings of target words. Ease of access was also increased by the possibility of clickable cross-references, as opposed to laborious page turning. Second, the multimedia capabilities of computer technology also promised to confer added affordances to dictionaries. Colours, the use of which add enormously to printing costs and hence book prices, could be used at will without adding any cost to an online product. Recorded pronunciations promised to removing the decoding burden caused by phonetic transcription and respelling systems typically used by dictionaries, which, moreover, differ significantly from dictionary to dictionary, even when using the International Phonetic Alphabet (IPA). Further, not only could images and diagrams (already not uncommon in print dictionaries) be utilised in online dictionaries, audio and video content were also possible. Lastly, online dictionaries were no longer subject to the ultimate restrictions of page extent resulting

from binding and printing costs. The reduction of space restrictions could potentially do away with the complicated set of abbreviations and typographical conventions of traditional lexicography. It would also mean a greater amount of relevant linguistic material could be added to entries, such as citations of actual usage, more detailed usage notes and pragmatic information, more sense relations (synonyms/antonyms/co-hyponyms, etc.), but most of all, more vocabulary could be covered. In their online incarnations dictionaries would no longer be shackled by the printer and binder, no longer at the mercy of the book publisher's accountants, but rather would be free to open the lexicographical doors wide open to all and sundry and thus grandly multiply the amount of vocabulary covered.

Initially, however, any benefits of moving into the online realm were small. The earliest dictionaries available on the Web were essentially just print dictionaries converted to HTML. They did not change the format much. There was very little use of colour, very little in the way of added functionality, and if anything the typesetting got worse (not only were digital fonts not as good as print fonts, the formatting of pages for the computer screen was still in its infancy). Back in 1996, Atkins stated that

> [t]he past is print dictionaries; the present is print dictionaries with some electronic versions of the same text; the future must be print dictionaries and truly electronic dictionaries, compiled afresh for the new medium, enriched with new types of information the better to meet the needs of the multifarious users. (Atkins 1996: 515)

Some twenty years on, it is clear that online dictionaries have indeed made some progress and have brought to fruition a number of the foreseeable technological affordances discussed above. However, the question remains have these improvements made online dictionaries better

for use in the classroom than traditional print dictionaries? In order to assess this question, three widely (and freely) available online dictionaries (*Dictionary.com*, *Oxford online*, [1] and *Wiktionary*) were assessed for five lexicographical features, namely, pronunciations, search capacity, colour usage, vocabulary coverage, and use of graphics). While some improvement over print dictionaries could be seen with regard to these features, this was still limited, and moreover, the use of some features were not very compatible with pedagogical goals.

Methodology

Three dictionaries were chosen for the study: *Dictionary.com* (www.dictionary.com), *Oxford online* (en.oxforddictionaries.com), and *Wiktionary* (en.wiktionary.org). The selection was based on the fact when the if one does a Google search for '[target word] definition,' these dictionaries consistently rate very high in the Google results page. Both *Dictionary.com* and *Oxford online* are commercial concerns using an advertising revenue model. For the purposes of this paper they are to be taken as representative of other similar free dictionary websites from other well-known dictionary publishing houses such as Cambridge, Collins, Longmans, Macmillan, and Merriam-Webster, all of which are offer substantially the same information in similar format and style. In contrast, *Wiktionary* is a crowd-sourced dictionary using the Creative Commons and GNU Free Documentation Licenses. Despite the fact that the three dictionaries offered users the ability to create an account and sign in, doing so did not unlock any additional functionality. Although there are numerous lexicographical features that could be assessed, in order to keep the study to a manageable size, six lexicographical were selected: three of which (pronunciations, search capacity, and vocabulary coverage) were chosen due to their utility for school-age users, and three (colour usage, use of graphics, and interactivity) which were included

to examine if the affordances of digital technology had been adopted and how well they might serve the classroom context.

Results

Pronunciations

English spelling is complicated and irregular and is thus a cause of difficulty for school students. Students often know the spelling of a word through having read it, but not pronunciation. The word *epitome* was chosen to test pronunciation guidance since students unfamiliar with the word may quite reasonably deduce that it is pronounced with two syllables "epi-tome", /ˈepɪ·toʊm/, rather than three /əˈpɪtəmi/ or /ɪˈpɪtəmi/. All three dictionaries provided good pronunciation guidance for this word by having both recordings of the word being spoken and IPA transcriptions. *Dictionary.com* also offered a third style of guidance with the respelling '[ih-**pit**-uh-mee]'. Only *Wiktionary* provided both British and American pronunciations, though only for the IPA, not for the recordings, which were American English. None of the dictionaries had pronunciations for any other major variety of English. Unfortunately for school-age users who may be struggling with or confused by the pronunciation, none offered any guidance, warning, or advice on the common mispronunciation of *epitome*.

Search capacity

Another consequence of the complicated and irregular nature of English spelling is that students often know the pronunciation of a word but not the accepted spelling. The word *epitome* was chosen again to test how well the three dictionaries were able to handle spelling guesses, since students familiar with the pronunciation are potentially liable to spell it "apitome" or "apitomy". Indeed, a Google search (set to 'verbatim')[2] reveals that both these spelling mistakes are not uncommon on the Web. Utilising fuzzy matching, both *Dictionary.com* and *Oxford*

online suggested *epitome* as the probable intended word when "apitome/apitomy" was searched for. *Dictionary.com* was the most helpful, placing *epitome* in large type at the top of the page, whereas *Oxford online* merely included the word *epitome*, in small type, in a list of possible alternatives. This list included the word *anatomy*, and a range of very low-frequency words such as *aplome*, *atomy*, *episome*, and *epistome*, and was unhelpfully in alphabetical order rather than being ranked according to likelihood. Faring worse in this aspect, *Wiktionary* did not suggest *epitome* at all, merely stating that "aptiome" and "apitomy" were not included in the dictionary, and asking the user if they wished to add them. *Wiktionary*'s offer to add the word to the dictionary might conceivably be misunderstood, especially to a novice user, to indicate that either "aptiome" or "apitomy" is the correct spelling and that *Wiktionary* is simply missing the word.

Despite this improvement in searching for difficult-to-spell words, searching across all dictionaries was still very limited. For instance, it is not possible to search in any subfield of the dictionary data, such as by part-of-speech label, pronunciation, etymology, etc. This means that a user cannot find all irregular verbs, or all words that rhyme with *bear*, or all words that are borrowed into English from a particular language. Further, there is no way to search in the definition field, which means a user cannot find a term if they know the meaning (e.g. "a pink bird with long legs" = *flamingo*). Finally, none of the analysed dictionaries allowed wildcard searches. This means that it is not possible to search for bound morphemes such as *-phobia* and obtain a list of all the "phobias" in the dictionary. Only *Dictionary.com* provided a browse function that allowed users to see lists of words beginning with the same prefix (e.g. *ante-*, *anti-*, etc.). None of these suggested search capabilities are technologically difficult to implement, and

all of them offer great potential for use in dictionary-based vocabulary-building lessons (see, for instance, Wright 1998).

Colour usage

In the world of printed books, colour printing increases production costs enormously, and this has a follow-on effect for retail prices and eventual profit margins. For this reason, print dictionaries have traditionally avoided the use of coloured inks. Online the story is different since the addition of colour costs nothing. In lexicography, colour is usually used in two ways. First, dictionary text can be coloured to differentiate different types of lexical information (for example, headwords could be a different colour to definitions), and second, colour can be used in illustrations and diagrams. All online dictionaries surveyed did use colour.

Wiktionary uses three basic colours (black, blue, red) to differentiate types of lexicographic information. Black is the base colour for all entry text; blue is used to indicate clickable hyperlinks to other entries in *Wiktionary* (or its sister project *Wikipedia*); red is used to indicate dead links (that is, where a cross reference is made to another entry that does not yet exist). *Dictionary.com* also had basic black text with blue for hyperlinks to other entries, but further used light grey text for illustrative phrases, and orange text for the sentence 'See more synonyms on Thesaurus.com,' which is present on every page. *Oxford online* used colour similarly, though with part-of-speech labels in orange, other labels (e.g. subject labels, regional labels) in green, and hyperlinked cross-references to other headwords (which were few and far between) in light blue.

The purpose of this use of colour in the dictionary text is to make different information types more easily differentiated and hence increase user-friendliness. However, none of the dictionaries surveyed offered any explanation of the meaning of the colours used. Neither was

explanation provided anywhere else on the websites. In fact, none of the dictionaries surveyed provided a user's guide or how-to-use guide, as opposed to print dictionaries where this is an almost universal feature of the front matter. As with other dictionary components (e.g. Prinsloo & Schryver 2002), instead of making things clearer, it may be that the extra colouration merely adds a further element to the decoding burden for users of the dictionaries, especially students.

Vocabulary

Greater vocabulary coverage was once a selling point of dictionaries. Indeed, the tradition of trying to outdo competitors by covering more vocabulary dates back to Cockeram's *English Dictionarie* of 1623, which noted as a selling point on the title page that it contained 'some thousand words never published by any heretofore'. By the late nineteenth century this type of competition resulted in the creation of enormously massive tomes difficult to carry and needing to be rested on a lectern in order to be used, such as the unabridged editions of Webster's and Funk and Wagnalls. Since electronic lexicography removes the space restrictions necessitated by the physical properties of bookbinding, lexicographers should be free to cover as much material as they wish. However, despite the potential for covering ever increasing vocabulary, current online dictionaries do not seem to be taking advantage of this.

In order to assess the breadth of coverage in the three dictionaries surveyed, seven salient and high frequency words from two Asian varieties of English, Singapore and Malaysian English, were chosen, namely, *alamak* (an exclamation of surprise), *kopitiam* (type of cafeteria), *lah* (an expressive particle), *Manglish* (colloquial Malaysian English), *merlion* (national symbol of Singapore), *Singlish* (colloquial Singapore English), and *stylo* (colloquial term for 'fashionable'). The results are given in Table 1.

| | *Dictionary.com* | *Oxford online* | *Wiktionary* |

alamak	✗	✗	✗
kopitiam	✗	✗	✓
lah	✗	✗	✓
Manglish	✗	✗	✓
merlion	✗	✓	✓
Singlish	✓	✓	✓
stylo	✗	✗	✗

Table 1: Occurrence of Singapore and Malay lexis in surveyed dictionaries

The best dictionary in terms of coverage was *Wiktionary*, which included 5 out of the 7 test items, while *Oxford online* covered only 2 of 7 and *Dictionary.com* only 1. The only word to be covered by all three was *Singlish*. The allied term *Manglish* was found only in *Wiktionary*, raising the question of why *Dictionary.com* and *Oxford online* would cover *Singlish* but not *Manglish*. These figures amount to an overall success rate of only 38.1% (7 hits from 21 individual searches), indicating that little effort has been made to extend dictionary coverage to Singapore and Malaysian English, and suggesting a conservative focus on British and American English as the two 'norm-providing' English varieties, despite the increasing importance and interest in World Englishes, and despite the fact that speakers of the so-called 'non-native' varieties of English today outnumber the so-called 'native' speakers (Galloway and Rose 2015: x, 14-15). Thus the online dictionaries assessed, especially the two commercial ones, seem to be running against the grain of the increasing calls for English-language pedagogy in the postcolonial globalised era to move away from old dichotomies (native/non-native, L1/L2, Inner Circle/Outer Circle, etc.) and to incorporate more nuanced perspectives on English-language pluralism.

Illustrations and other visual material

In terms of lexicography, the traditional type of illustration consisted of small black-and-white line-drawing artwork, and these were usually only found in larger general English dictionaries. Some larger dictionaries in the past also included a small number of colour plates, but printing costs ensured that these were kept to a minimum. These illustrations and graphics are placed there by the lexicographer to add additional information to corresponding dictionary entries. Today, however, a new type of visual has become commonplace in online dictionaries: artwork in advertisements. This artwork has not been chosen by any lexicographer, and is not used to further illuminate or explicate dictionary headwords. The following discussion deals first deals with lexicographically-motivated illustrations in online dictionaries, before moving on to artwork in advertisements.

Lexicographically-motivated illustrations. The age-old adage that a picture paints a thousand words has not been lost on lexicographers, with pen-and-ink illustrations and diagrams appearing in English-language lexicography from as early as Harris' *Lexicon Technicum* of 1704. It is obvious that in many cases, a visual representation may more immediately bring to mind a particular lexical item than a definition. For example, a definition for *guitar* typically will provide a description along the lines of 'a stringed musical instrument with fretted fingerboard, long neck and waisted body,' which necessarily entails a certain amount of lexical decoding and a requisite level of language competency in order to comprehend the definition. In fact, even though it is generally recognised as a lexicographical transgression, definitions often have words of considerably lower frequency than the word being defined. A case in point is the word *dog*, which typically is defined something like 'a domesticated canid, *Canis familiaris*, bred in many varieties,' where the zoological term *canid* and the scientific binomial *Canis familiaris* are less

likely to be known than the word *dog*. This definition requires a greater breadth and depth of vocabulary knowledge to understand than is required to know the word *dog* itself. If a user does not know what the word *dog* means, then certainly a definition using the term *canid* is going to be of little use. In such cases as *dog* and *guitar*, a visual representation will be readily assimilated by a dictionary user, and even though dogs and guitars come in many shapes and forms, a single picture is able to invoke the conceptual class of objects.

To test the use of illustrations in the three dictionaries, 25 common terms were searched for, consisting of 5 animals: *dog*, *cat*, *echidna, pangolin, rat,* 5 plants: *heather*, *mangrove*, *moss*, *oak*, *orchid*, 5 objects: *guitar*, *headphones, hockey puck, sofa, spatula*, 5 verbs: *cry*, *laugh*, *jump*, *ride*, *swim*, and 5 adjectives: *blurry*, *fizzy*, *happy*, *sad*, *tired*. The selected words had to be common enough to be present in the three dictionaries surveyed (obviously there can be no picture for a term if there is no entry for it). The results of this mini-survey was that neither *Dictionary.com* nor *Oxford online* had any illustrative images, whereas *Wiktionary* had images for 18 of the 25 terms, plus video footage for *laugh* and *swim* (the words *Wiktionary* did not have images for were *headphones*, *hockey puck*, *ride*, *moss*, *fizzy*, *sad*, and *tired*). Clearly *Dictionary.com* and *Oxford online* have not lexicographically leveraged the visual affordances of online technology in this respect. For school students who are still learning the language, and who therefore may struggle with comprehending definitions couched in 'dictionary-ese' (see Mackintosh 2006), illustrations are a generally useful complement to dictionary entries.

Non-lexicographically-motivated illustrations. While *Dictionary.com* and *Oxford online* do not use illustrations or audiovisual material to assist users to understand lexical items, their online dictionaries entries are not devoid of graphical content, quite the contrary: entries in these two dictionaries are replete with colourful imagery in the form of advertising, both for the

dictionaries themselves and for unrelated commercial products or services. Further, there is no way to turn off these advertisements. *Wiktionary*, in contrast, has no advertisements.

When using online dictionaries in the classroom, advertisements have, I would argue, a very strong potential to distract the attention of students away from the task at hand, that is, away from the dictionary lookup task and the pedagogical goals underlying it. The reason for this strong potential to distract is the very nature of advertisements themselves. Current-day advertisements are the product of over a century of trial-and-error and continual refinement in the art of getting the reader's or viewer's attention. The advertisements that appear on both *Dictionary.com* and *Oxford online* have a number of features that make them stand out from the page while simultaneously pushing the actual dictionary content into the background. First, unlike the lexicographical material, which is devoid of supporting images, the advertisements in these online dictionaries do have pictures: of cute children, of travel destinations, of beautiful models, of clothing and jewellery, of delicious foods, and so on. Some advertisements even run applets that display dynamically changing content. These advertisement graphics are designed to grab the user's attention and are completely unrelated to the content of the particular dictionary entry being displayed. Thus, in order to use the dictionary as a dictionary and only a dictionary, the user must actually make a deliberate effort to block out or ignore the attention-grabbing pictures of the advertisements and to thence locate the dictionary text within the overall screen content. Certainly none of the advertising content is related to schoolwork, however, that said, while some advertisements (such as advertisements for insurance plans) would be of little interest to school students, some advertisements can be highly appealing, such as advertisements for precision-engineered metal spinning tops from a company enticingly named ForeverSpin. Of

importance here is that neither the lexicographer nor the teacher has any control over the content of these advertisements.

Second, in terms of text, it is the advertisements that have the largest size text on the page, while dictionary text is minimized. The text of advertisements is also more colourful and utilises a great range of font types which are, of course, designed to be eye-catching. The advertising text is often set on brightly coloured backgrounds, and is directly linked to the graphical images of the advertisements. The language of the advertisements is also frequently pithy, quirky, or otherwise attention-grabbing. The dictionary text, on the other hand, while having some lexicographically-motivated colour as discussed above, is in a standard font on a plain white background, and is expressed in the rather dry, perfunctory style of dictionary definitions. Most significantly, it is not linked to any of the images on the page.

Of note here is that not all the advertisements on the pages of *Dictionary.com* and *Oxford online* are commercial in nature. In fact, the bulk of advertisements are for the sites themselves. *Dictionary.com* has a number of enticingly captioned images that link to blog entries, videos, slide shows, interactive quizzes, and so on, about interesting facets of language, such as unusual idioms, words without rhymes, collective nouns for animals, wacky words (*discombobulate*, *hornswoggle*, etc.), teenspeak, onomatopoeic words, nautical vocabulary, etc. While these may be useful resources for an English teacher planning a vocabulary lesson, they will usually be unrelated to the word that was being looked up, and thus may lead students off topic. *Dictionary.com* (at the time of conducting the research) even has a pop-up that jumps out from the bottom left-hand corner challenging users to attempt some tongue twisters. *Oxford online* is little different with colourful advertisements for 'word of the day,' 'word of the year,' and 'trending words,' as well as links to various competitions, quizzes, and blogs with catchy titles

such as 'Which Roald Dahl character are you?' While this material has been created by the lexicographers, it is unrelated to the content of the word being looked up, and is essentially restricted to a subset of lexis that can best be called the oddities and curiosities of the English language. Moreover, such content is not designed with students in mind, as is testified to by an advertisement for a blog about new words added to the *Oxford* dictionary which was pruriently entitled 'Drunk Texts, Squad Goals, and Brewer's Droop,' the last term of which refers to the inability to get an erection when drunk, which, if the title has its intended effect and students follow the link, may definitely become a cause of distraction. The teacher has no control over this content.

Interactivity

Another affordance of the online format is the potential for users to interact with and have input to websites. Overall, the avenues for interactivity in the surveyed dictionaries was minimal. No dictionary offers users the ability to post comments on dictionary material, nor to ask questions from the dictionary experts. The only interactive feature of *Dictionary.com* and *Oxford online* are buttons that allow users 'share' entries on social media platforms such as Facebook, Twitter, and Google+. Both dictionary entries and the content of the blogs, quizzes, slide shows, etc., are furnished with social media connectivity. Of course, should students actually share an entry or any other material on social media, their next goal will be to see if that sharing has garnered any reaction from social media friends, which forms yet another pathway for students to be distracted from lessons. In contrast, *Wiktionary* offers no social media connectivity, and its potential for interactivity consists of being able to edit entries or create new entries. However, since the editing interface is so user-unfriendly, the chance that this will be used by students is very remote.

Conclusion

This article has examined some of the pros and cons of using online dictionaries in the classroom. It assessed three dictionaries widely available and commonly used online dictionaries: *Dictionary.com, Oxford online,* and *Wiktionary.* The online dictionaries surveyed had taken advantage of some of the affordances of the new platform. All three gave pronunciations via recorded speech, and used colour to differentiate different information types in entries. *Dictionary.com* and *Oxford online* used fuzzy matching to assist with looking up difficult-to-spell words. Only *Wiktionary* appears to have responded to the removal of the space restrictions of print dictionaries by covering more vocabulary, and only *Wiktionary* has used illustrations and other visual content to help explain the meaning of lexical items. In contrast, *Dictionary.com* and *Oxford online* use visual material for advertising only. The advertising content is purpose-designed to grab the user's attention while pushing the actual dictionary text into the background. Content unrelated to the headword is more colourful, commands more page space, and is supported by appealing visual images, which, when coupled with the ability to connect to social media platforms, provides an array of tempting avenues for students to disassociate from lessons. In fact, judging from the design effort and the page space devoted to the self-advertisement component, *Dictionary.com* and *Oxford online* appear to be primarily concerned with promoting site traffic through entertainment, and the lexicographical content is clearly sidelined to this greater purpose.

So, while usage of online dictionaries in classrooms is increasing, teachers and educators need to consider whether the disadvantages outweigh the advantages. Unlike print dictionaries, there are no online dictionaries designed specifically for the school market. And while the present research only examined a small number of pedagogically relevant features, the results

suggest a need to assess online dictionaries for school use in conjunction with the creation of

relevant assessment criteria.

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[1] I use the term *Oxford online* to refer to this website since the website itself does not appear to
have a definitive name. At present the site has a banner with the words 'English: Oxford Living
Dictionaries', though in 2016 the banner was 'Oxford Dictionaries: Language Matters', neither
of which seem to be a title *per se*.

[2] The Google search engine, under the Tools menu, allows for searches to be done verbatim, that is, on the exact string of characters typed in to the search field.