Online Translator, Dictionary, and Search Engine Use
Among L2 Students

Errol M. O'Neill (emoneill@memphis.edu)
University of Memphis, U.S.A.

Abstract

Three online tools that students often use to assist them with their language needs are online translators, online dictionaries, and search engines. An experimental study was conducted with 310 participants taking Spanish or French to investigate both the amount of usage of these three resources among third- and fourth-semester university students, and student attitudes related to online dictionaries and translators. The results show that nearly nine out of ten students (87.7%) say they use online dictionaries for graded work at least sometimes. Surprisingly, the exact same percentage (87.7%) report online translator use despite the fact that online translators are prohibited at the institution where the study was conducted. Search engine use was lower, but still represents just over three out of four students. Similar but smaller percentages were found for all three tools on non-graded language practice. Participants held almost exclusively positive views of online dictionaries (93.9%), whereas opinions on online translators were mixed, but still mostly positive (75.6%). This study highlights the prevalence with which these online tools are used as well as a variety of student opinions. The results are discussed, suggestions for further research are given, and implications for teaching are provided.

Keywords: online dictionaries, online translators, search engines, CALL, attitudes

Introduction

Technology use for learning, both inside and outside the classroom, is now commonplace. While some inroads have been made into understanding the use of computers and portable devices among second language learners, much still needs to be explored further. Three common resources sometimes used by language students to practice or complete work are online bilingual dictionaries (for example, http://wordreference.com or http://spanishdict.com), online translators (e.g., http://translate.google.com or http://freetranslation.com), and search engines (e.g., http://google.com or http://yahoo.com). With the entire Internet only a click or tap away, it is not surprising that students are availing themselves of these technologies. In order to understand motivations behind using these tools and make sound pedagogical decisions about them, it is important to understand to what extent online dictionaries, translators, and search engines are being used by students, what these resources are being used for, and student perceptions about their effectiveness.

To get a better understanding, this article will first present a brief overview of literature previously published about the use and attitudes towards online dictionaries (ODs), online translators (OTs), and search engines (SEs). Next, an experimental study will be described which asked students to report their opinions about and frequency with which they use these technologies. The results of this study will then be given and discussed. Limitations and further avenues for research will be presented, followed by a conclusion discussing the implications of the results for language learning and teaching.

Review of the Literature

Previous research on the three resources that have informed the current study will be presented below. Articles related to the amount of usage of these tools by students will be discussed first. Second, student attitudes towards the three resources will be presented to understand positive and negative views about their use in general, as well as different purposes they are used for related to language learning.

Use of Online Translators, Dictionaries, and Search Engines Among L2 Students

While various aspects of online translators have been mentioned in the literature for about twenty years now, it is only relatively recently that several articles have been published specifically quantifying the amount online translation is used by students. White & Heidrich (2013) asked a class of intermediate German students at the university level to report their use of OT. Twelve out of 18 participants (67.8%) admitted to using OT to complete work for class, for 27.7% of their assignments on average. Another study (Jolley & Maimone, 2015) of 128 students of Spanish found that 74.22% of participants admitted to frequent (35.92%) or occasional (38.28%) OT use. In the largest study to date, Clifford, Merschel, & Munné (2013) surveyed 905 Romance language students about their using of online translation. 88% reported having used an OT at some point, with 71% reporting they use online translators sometimes (39%) or often (32%), and only 12% saying they had never used one.

Online dictionary use has also been investigated in the literature; search engine usage much less so. In a survey of 265 foreign language students at the postsecondary level, Jin and Deifell (2013) found that 85% of first- through fourth-year students reported using an online dictionary. 27.7% of respondents said they used ODs daily, 39.7% weekly, 3.6% monthly, 2.2% rarely, and 26.8% "whenever" (p. 521). In the same year, Larson-Guenette found similar overall total usage numbers, but with a different breakdown of frequency. 87% of participants mentioned using an online dictionary or thesaurus at least once during the current semester, with 43% saying they used it daily, 26% weekly, 13% "only when writing," 8% rarely, and 2% saying they never use OT at all (although it should be noted that 10% of participants did not answer the question).

Some previous authors have compared use of ODs, OTs, and SEs in general or on specific tasks, with varying findings. In a study of 14 first-year university students learning English (Wuttikrikunlaya, Singhasiri, & Keyuravong, 2018), all students chose to use an online bilingual dictionary at least once to assist in writing an English composition task where students were told they could use whatever tool they chose. While all participants used an online dictionary, ODs accounted for only 16.25% of all queries, trailing far behind OTs (74.91%). The same study found search engines were only used 0.70% of the time by participants. Another study (Tight, 2017) tracked online tool usage by intermediate learners on compositions over a three-month period. While an OT, Google Translate, was the most consulted online resource (114 consultations, 38% of queries), three online dictionaries combined accounted for more total consultations (186 consultations, 62% of queries), with search engines not being consulted at all during the study. Similarly, Niitemaa & Pietilä (2018) conducted a study in which their 22 participants (EFL students in secondary school) could use whatever online resources they chose to complete vocabulary recognition tasks. Google Translate was the most used resource (120 times), followed closely behind by an online dictionary (Sanakirja.org, used 109). In addition, eleven other multilingual online dictionaries were used as well as one search engine (Google). While exact usage numbers are not given for these remaining resources, it is stated that "all the other sources were used from one to thirteen times," suggesting that online dictionaries combined were consulted more often than the OT was, and both of these resource types were again used much more than a search engine overall. Xu & Wang (2011), on the other hand, found that search engines were the second-most chosen option on a self-report questionnaire given to 100 third- and fourth-year English L2 students studying translation at the university. 22.9% of students reporting using a search engine, just behind online dictionaries (23.5%) and well ahead of online translators (7.1%). 57% reported using SEs often, 41% sometimes, and only 2% never. The variation in these usage numbers among studies that looked at multiple online resources may be due in part to different student populations (e.g. secondary school language students versus third- and fourth-year translation students at university) and study designs (ranging from composition tasks to self-report questionnaires).

Student Attitudes Towards Online Translators and Dictionaries For L2 Learning

A number of studies have asked students about their views on online resources. In Clifford, Merschel, & Munné (2013), among those students who admitted using online translation, 94% said they found it to be always or sometimes helpful, with only 6% saying OTs were rarely helpful. The top three reasons given for their positive impressions overall were that OTs increase vocabulary, improve grammatical accuracy, and build confidence. Only 29% said they used OTs specifically to improve their grade. As for how students thought online translation should be used, looking up individual words "as a dictionary" was the most cited (66%), followed by writing (44%), double-checking (43%), and pre-writing (42%). Niño (2009) surveyed 16 advanced-level Spanish students who had taken a ten-week course on machine translation, including OTs. 75% of students reported that they found machine translation to be a helpful tool for language learning, with only 19% reporting that they would not use it again, mostly due to concerns about its accuracy. Some reasons cited for future use

included the ability to use it quickly, to understand texts in other languages, to get a rough draft for writing, to look up or check vocabulary, to reflect on their own language use and errors, and to build confidence in their ability to write in the L2. Larson-Guenette (2013) found participants were motivated to use OTs for three main purposes: speed and efficiency (41%), vocabulary (31%), and to "check" or "compare" their work with the output of the translator (11%).

Bahri & Mahadi (2016) conducted a study of 16 university students who discussed both positive and negative impressions of online translation. OTs, in particular Google Translate, were described by participants as effective, easy to use, fun, and non-threatening for students to express themselves in the target language. At the same time, some students thought that the results of OTs were not reliable and online translation did not help with all aspects of learning, in particular speaking and listening skills. In a case study of three advanced language students, Cornell, Dean, & Tomaš (2016) also found that students had conflicting views about online translation. Even though all three participants reported using an OT more than any other resource, they had serious doubts about online translation's accuracy, and one participant in particular had negative feelings towards Google Translate, saying she felt like a failure when she had to use it. Some students in Reza (2016) also had misgivings about online translation, with one participant stating "sentences in Mandarin when I translate them into English by Google Translate, they are not very good. I need to correct them... but for words and phrases, online translation is very good." (p. 158). One noteworthy aspect of these three articles is the fact that they involve speakers of non-Western languages: Arabic, in the case of Cornell et al. (2016), Malay for Bahri & Mahadi (2016), and Mandarin Chinese, in Reza (2016). If another study (Wuttikrikunlaya et al. 2018) is any indication, students who are not satisfied with Western tools may turn towards ones geared for learners of other languages, such as Thai students who turned to the online dictionary and translator Longdo (http://longdo.com), which students used nearly as often as Google Translate (30.48% versus 43.48%) at the word level and more than Google Translate (40% versus 20%) at the phrase level. These articles indicate the need for increased analysis of the usefulness of online tools for speakers of less common language pairs and non-Western languages.

ESL participants in Jin & Deifell's (2013) study, who had a variety of L1s ranging from Western (e.g. French and Czech) and non-Western languages (e.g. Hebrew and Maori) described online dictionaries as "fast," "convenient," and "easy to use." They reported turning to ODs for pronunciation, conjugation, slang, phrases, and sentences. According to Fredholm (2015), whose participants were L1 Swedish students learning Spanish, students believe online dictionaries to be more "*fiable*" (author's note: "reliable") than online translation and that they help reduce the errors they make, but some negative views included that it is difficult to use an online dictionary to find information, and too "time-consuming" to use. The current research does not investigate attitudes towards search engines, since the larger study from which the data are reported only looked into student writing using online dictionaries and translators.

Methods

Research Questions

In order to expand the field's understanding of how much students use online dictionaries, translators, and search engines, as well as their views on such tools, an experimental study was conducted. This article focuses on results addressing the following two research questions:

1) How much do students use online dictionaries, translators, and search engines?
2) What are students' attitudes towards online dictionaries, translators, and search engines?

Research Design and Analysis

To investigate these questions, the current study collected two types of data via a self-report questionnaire. First, quantitative data was gathered regarding the amount these tools are used in two different situations: non-graded language use and graded language work. A Likert-style scale was used for which students were asked to circle 1 (Never), 2 (Rarely), 3 (Sometimes), 4 (Often), or 5 (Always). These categories were chosen in part so as to be comparable to similar questionnaires used in previous studies: for example, the above-cited Jolley & Maimone 2015, who asked students to rate their usage of OTs on a 5-point scale of never, infrequently, occasionally, frequently, and always; and Clifford et al. (2013), who similarly asked students to rate their OT use on a scale of never, rarely, sometimes, and often. Participants in the current study reported on their usage of online dictionaries, translators, and search engines in response to the following question:

Please rate how frequently you use computers for **things that are NOT graded** for the following purposes, **EITHER FOR PRACTICE / REVIEW FOR CLASS OR JUST FOR FUN**.

● To <u>look up</u> words in an online dictionary site/app to go to or from French/Spanish (WordReference, etc.)
● To <u>translate</u> words or text to or from French/Spanish using an online translator or app (Google Translate, etc.)
● To <u>search</u> for expressions to or from French/Spanish using a search engine or app (Yahoo search, etc.).

The second question was similar but asked specifically about graded work:

Please rate how frequently you use computers for **things that ARE graded** for the following purposes, **EVEN IF THEY WEREN'T ALLOWED** for whatever graded work you were doing.

- To <u>look up</u> words in an online dictionary site/app to go to or from French/Spanish (WordReference, etc.)
- To <u>translate</u> words or text to or from French/Spanish using an online translator or app (Google Translate, etc.)
- To <u>search</u> for expressions to or from French/Spanish using a search engine or app (Yahoo search, etc.).

Second, two qualitative questions were asked about student opinions of online dictionaries and translators. This qualitative data was then quantified by categorizing and counting instances of positive and negative descriptions provided by participants. The questions asked were as follows:

- Whether or not you have used them personally, **what is your opinion / impression about online <u>dictionaries</u>**? (For example, do you like them, do you think they are useful, etc.)
- Whether or not you have used them personally, **what is your opinion / impression about online <u>translators</u>**? (For example, do you like them, do you think they are useful, etc.)

Sample

A total of 310 students completed the questionnaire. All participants were current students of third-semester or fourth-semester courses in Spanish or French at the university level in the United States. Participants filled out the questionnaire during class and were offered extra credit for doing so; students who chose not to participate completed an alternate assignment. To encourage participants to answer freely and honestly, the researcher explained to students that their answers were anonymous and would not be shared with their instructor. This guidance was deemed particularly important since one of the tools (online translators) are expressly prohibited from use.

Results and Discussion

Use of Online Dictionaries and Translators

As Table 1 shows, all three resources (online dictionaries, online translators, and search engines) are widely used by participants for non-graded purposes ("practice," "review," or "fun"). 19.2% of participants reported always using online dictionaries in non-graded language situations. Close behind this was the percentage of participants who said they "always" use online translators for non-graded work (18.1%), followed by only 15% who reported always using search engines (15.0%). Percentages were higher for participants who reported using these tools "often." ODs and OTs are often used by over a third of participants

(34.5% for each) when no grade is involved, while SEs are often used by about quarter of participants (26.1%). OTs are "sometimes" consulted by 29.7% of participants for non-graded use, while slightly fewer participants sometimes use an OD (27.0%) or a SE (24.8%).

Table 1
Self-reported frequency of non-graded use of technology.

	Never	Rarely	Sometimes	Often	Always
To look up words in an online dictionary site or app to go to or from French/Spanish (WordReference, etc.)	8.8% (27)	10.4% (32)	27.0% (83)	34.5% (106)	19.2% (59)
To translate words or text to or from French/Spanish using an online translator or app (Google Translate, etc.)	7.7% (24)	10.0% (31)	29.7% (92)	34.5% (107)	18.1% (56)
To search for expressions to or from French/Spanish using a search engine or app (Yahoo search, etc.)	14.7% (45)	19.5% (60)	24.8% (76)	26.1% (80)	15.0% (46)

Note. n = 310. Not all respondents chose to answer every item; percentages based on total responses for that item.

On the other end of the spectrum, 8.8% of participants reported "never" using an online dictionary for their non-graded language needs, with a slightly lower percentage (7.7%) indicating they never use online translators in situations where they aren't being graded. A somewhat larger percentage of participants (14.7%) said they never use search engines to look for words or expressions. The number of participants who only "rarely" use these tools is also relatively small, with about 10% of respondents saying they seldom use an OD or OT and nearly twice as many (19.5%) reporting rarely availing themselves of SEs for non-graded language use. Overall these results indicate high, similar amounts of usage for ODs and OTs, with somewhat smaller percentages of use for SEs.

To get a better overview of the results and make comparison among tools easier, the data can be summarized by combining related categories and displaying them in pie charts to see what percentage of participants use each resource for non-graded language needs at least sometimes. For all three tools, those who never or rarely use that resource are largely outnumbered by those who use it sometimes, often, or always. Figure 1 shows that 80.7% of participants reported using online dictionaries at least sometimes, while 19.3% use them never or rarely. Reported use of online translators (Figure 2) is slightly higher, with 82.3% of students saying they sometimes, often, or always use an OT for non-graded language situations. Usage of SEs (Figure 3) is comparatively low, still representing the majority of

students (65.8%) but with a higher percentage (34.2%) never or rarely using them. Based on these data, OTs are the most popular of the three resources when no grade is involved, with over four out of five participants using them, followed closely by ODs, used at least sometimes by about two-thirds of participants.

Figure 1
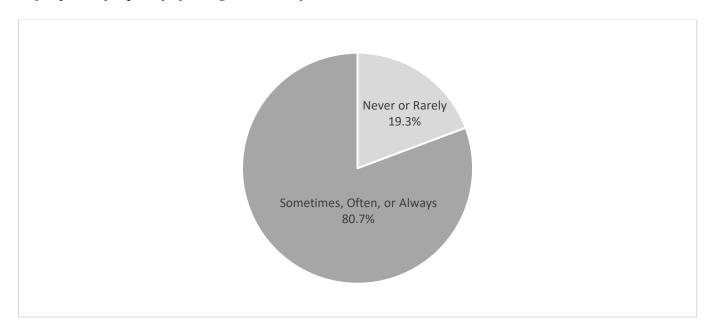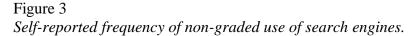*Self-reported frequency of non-graded use of online dictionaries.*

.
Figure 2
Self-reported frequency of non-graded use of online translators.

Figure 3
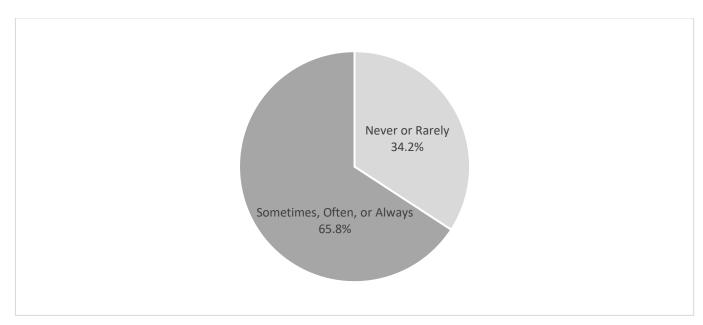*Self-reported frequency of non-graded use of search engines.*

Table 2 below shows the flipside of the coin: which resources students use not for practice, but when their grade is at stake. 11.5% of participants reported never using a search engine for graded language use, with about half as many participants saying they never use an online dictionary (5.8%) or online translator (5.5%). Those who rarely use each resource are similar in number, but slightly higher, than those who never used it. 13.4% reported only using a SE rarely for graded work, while 6.5% and 6.7% of participants said they rarely used an OD or OT, respectively. Both the never- and rarely-used figures are somewhat lower for graded language use as compared to non-graded contexts mentioned above.

Table 2
Self-reported frequency of graded use of technology.

	Never	Rarely	Sometimes	Often	Always
To look up words in an online dictionary site or app to go to or from French/Spanish (WordReference, etc.)	5.8% (18)	6.5% (20)	24.6% (76)	39.2% (121)	23.9% (74)
To translate words or text to or from French/Spanish using an online translator or app (Google Translate, etc.)	5.5% (17)	6.7% (21)	25.6% (79)	37.2% (115)	24.9% (77)

To search for expressions to or from French/Spanish using a search engine or app (Yahoo search, etc.)	11.5% (35)	13.4% (41)	24.6% (75)	29.5% (90)	21.0% (64)

Note. n = 310. Not all respondents chose to answer every item; percentages based on total responses for that item.

Nearly a quarter of students reported "sometimes" using OTs (24.9%) or ODs (23.9%) on graded work, while about one-in-five said they used SEs (21.0%). There are much higher percentages of participants who "often" use these tools, with nearly 40% using an OD, 37.2% using an OT, and 29.5% using a SE. A large percentage of students also said they "always" use these tools: 24.9% of participants use an OT always, followed by those reporting OD (23.9%) and SE (21.0%) usage. These results indicate that the use of online dictionaries, online translators, and search engines is higher for graded work than it is when students are just practicing, reviewing, or using the language for fun.

When categories are again combined and compared, there are some rather surprising results. One way in which these results are noteworthy is that the exact same percentage of participants report sometimes, often, or always using an online dictionary (Figure 4) as an online translator (Figure 5), both 87.7%. Looking beyond the percentages, the raw number of participants reporting using each tool at least sometimes (sometimes, often, or always) is also the same, a total of 271 respondents for each tool as presented above in Table 2. Finer-grained descriptions of usage show only very small differences between the two resources when broken down into the categories of sometimes, often, and always. The fact that the percentages of use are so high is also notable. Nearly nine out of 10 students are sometimes, often, or always using ODs or OTs on their graded work. Perhaps the most surprising finding of this study is the percentage of graded online translation usage. It should be noted that online translators are prohibited at the institution where this questionnaire was administered. This means that an overwhelming majority of students are choosing to use a tool that is not allowed for graded work, not only when practicing on their own but also when submitting work for a grade.

Figure 4
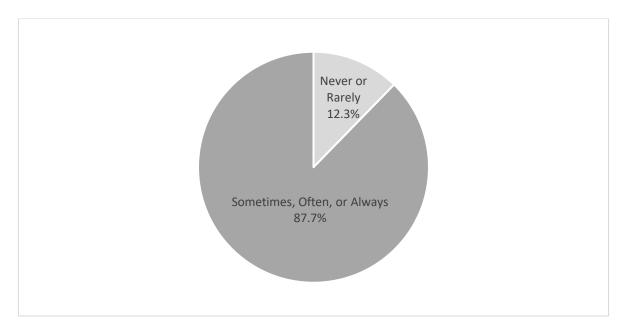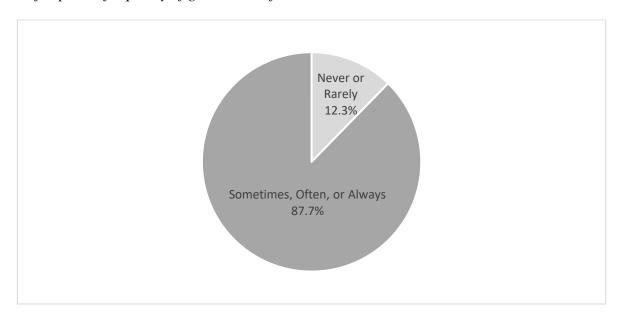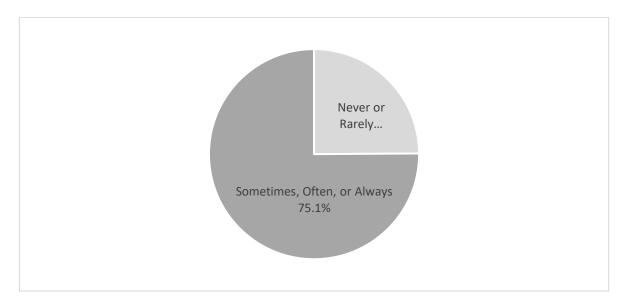*Self-reported frequency of graded use of online dictionaries.*

Figure 5
Self-reported frequency of graded use of online translators.

Lastly, more than three in four students reported using a search engine to help them on graded language work (Figure 6). While representing a lower percentage of use than the other two tools, this figure is still more than the percentage of participants that went to a SE for non-graded language use (75.1% for graded; 65.8% for non-graded). These data indicate a large majority of students are using SEs, OTs, ODs, or some combination thereof, to complete graded work in the language they are learning.

Figure 6
Self-reported frequency of graded use of search engines.

Attitudes Towards Online Dictionaries and Translators

Participants were also asked to give their opinions on online dictionaries and translators. In order to gauge the opinions of participants about these two tools, three types of words or phrases were categorized and counted: opinions or judgments about the tool (for example, "I like" or "it's useful"), actions mentioned by participants that can be done with the tool (for example, "double-check" or "understand"), and aspects that they mentioned could be positively or negatively affected by the tool (for example, "grammar" or "general idea"). No notable difference was discerned between positive and negative comments based on the self-reported frequency with which participants used OTs and ODs, so the comments are considered together as a whole.

Views about online dictionaries and translators varied widely. As can be seen in Table 3, there was a greater number of total comments about OTs (402 comments, versus 329 for ODs); however, the number of positive comments about each is nearly the same. ODs had relatively few negative opinions associated with them, while students overall did not view OTs as favorably. 93.9% of comments about online dictionaries were judged to be positive, while only 75.6% of opinions expressed about online translators were. This result is

somewhat surprising for two reasons. First, there were more participants who reported using OTs than ODs at least sometimes for non-graded purposes, and an equal percentage of students using each tool for graded work. Given comparable usage, it might be expected that the percentage of positive opinions would be more similar.

Table 3
Impressions of online dictionaries and online translators.

	Number of positive opinions expressed	Number of negative opinions expressed	Total number of opinions	Percentage of positive opinions
Online dictionaries	309	21	329	93.9%
Online translators	304	98	402	75.6%

A list of the positive opinions mentioned participants had of these two tools can be found in Tables 4 (ODs) and 5 (OTs). 187 participants described online dictionaries as being useful (109 participants) or help(ful) (78), representing a clear majority (60.52%) of all positive comments submitted. A large number of student comments, 16.18%, also said the students like (40) or love (10) ODs. These comments suggest that students do not use ODs simply because their teachers recommend them as an alternative to online translation — a view that was not expressed by any participant in the study — but rather because students generally perceive ODs to be an aid in their writing. Specifics are lacking in most students' comments, however, about the ways in which, or for what purposes, the tool is considered to be useful or helpful; for example, a number of comments were short sentences (e.g. "I find them useful"; "They are always very helpful for me").

Table 4
Positive comments about online dictionaries.

Positive opinions of OD	Positive actions associated with OD	Aspects helped by OD
useful [109]	looking up [13]	words [32]
helps/is helpful [78]	checking/double-checking [6]	conjugations [15]
like [40]	understanding [5]	meanings [10]
good/well [11]	learning [4]	vocabulary [6]
love [10]	remembering [4]	verbs [3]
better/best [7]	communicating	phrases [2]
reliable [6]	finding information	sentences [2]
accurate [6]	finding new words	spelling [2]
quick [4]	hearing words	definitions
beneficial [3]	making sure	dialects
easy [3]	refreshing your mind	general idea
handy [3]	studying	idioms
convenient [2]		insights

detailed [2]		slang
fantastic [2]		usage
fast [2]		
great [2]		
okay [2]		
prefer [2]		
trustworthy/trust [2]		
accessible		
clear		
correct		
dependable		
effective		
fine		
free		
not that bad		
practical		
rapid		
speedy		
simple		
vital		

Note: Figures in brackets indicate the number of participants that used that descriptor.

The following trends emerged from the qualitative data. Many descriptors used by participants point to issues of reliability, accuracy, and usability, and the following section examines these themes. As presented in Table 5, 208 participants (68.42% of positive student comments on online translation) found OTs to be "useful" or "help(ful)," which is slightly higher than the number of participants who thought ODs to be so. The number of students who like (41) and love (8) OTs is nearly the same as those who reported feeling this way about online dictionaries, representing 16.12% of the positive comments. One student's comment was representative of what many said: "I think they are useful." Others were used stronger language in their praise of OTs, with one commenting: "I think translators are amazing…they are very useful when stumped about the language and have helped me a lot." Other descriptors given by participants may shed some more light as to why there were overwhelmingly positive views related to online dictionaries and translators.

Table 5
Positive comments about online translators.

Positive opinions of OT	Positive actions associated with OT	Aspects helped by OT
useful [132]	understanding [12]	words [26]
help / helpful [76]	learning [5]	phrases [8]
like [41]	checking/double-checking [4]	sentences [8]
good/well [12]	communicating	main idea/general idea [4]
love [7]	confirming	meanings [3]
okay [4]	explaining	conjugations [2]
accurate [3]	figuring out what to say	structures [2]
reliable [3]	gaining knowledge	verbs [2]
beneficial [2]	getting a clue	vocabulary [2]

correct [2] effective [2] great [2] necessary [2] amazing at your fingertips convenient dependable easy essential faster improved needed practical prefer quick speed(y) spot on understandable	looking up making sure remembering studying	definitions expressions gist grammar paragraphs phrasing slang

Note: Figures in brackets indicate the number of participants that used that descriptor.

The issues of reliability and dependability

Counts of positive descriptors used for online dictionaries can be found above in Table 4. Beyond the general comments of usefulness or likability mentioned above, several notable descriptions used for ODs stand out. A number of students state that ODs are reliable (6), trust(worthy) (2), and dependable (1). In some cases, students directly compared ODs to OTs: one expressed the opinion that "Dictionaries are more reliable than translators," while another said "I love online dictionaries. They are much more trust worthy and are very detailed." One participant went so far as to say that ODs are "[d]ependable: I could not pass this course without it."

A large number of participants also expressed negative opinions about online translators (98), and to a much lesser extent, online dictionaries (21). For the latter (Table 6), many comments did not point to a specific reason the participant had a negative view, stating just they didn't prefer (3) or didn't find ODs useful (3) or helpful (1). As can be seen in Table 5 above, fewer participants mentioned finding OTs to be reliable (3) or dependable (1), representing fewer than half as many positive comments on this issue for OTs as compared to ODs. The flipside of the coin, the negative opinions students expressed about the two tools related to reliability, may also shed some light on this issue. Table 6 below contains negative comments given by students related to online dictionaries. Not a single student characterized ODs as being unreliable, untrustworthy, or not dependable.

Table 6
Negative comments about online dictionaries.

Negative opinions of OD	Negative actions associated with OD	Aspects not helped by OD
don't prefer [3] not useful [3] not as good as online translators [2] takes longer [2] not correct don't like hard inaccurate not easy not helpful not modern not user friendly tedious time consuming wrong	not good for learning [2] not good for getting a translation	sentences [5] conjugations [2] gender meanings phrases

Note: Figures in brackets indicate the number of participants that used that descriptor

The same cannot be said for online translators. As seen in Table 7 below, the reliability of OTs was a common area of concern: eleven participants said online translation was unreliable or that you "can't rely on" it; four participants called OTs not trustworthy or said they don't trust them; another said they were not dependable. This issue may be one of the most important difference in opinions between the two tools, since a total of 16 negative comments for online translation mentioned either a perceived unreliability or a lack of trust in them, whereas not a single respondent expressed a similar distrust in ODs. This trend reiterates what Larson-Guenette (2013) and Cornell et al. (2016) found in their respective articles about online translators. In many cases, students are using OTs in spite of the fact that they are not confident about the results they receive when using this tool. Possible reasons for this will be discussed shortly. A few comments exemplify this general tendency towards a lack of trust in online translation, with some comments treating the subject broadly (e.g. ""Not completely reliable, only useful if you actually know the material") and others hinting at possible reasons behind this distrust: "They are often not grammatically correct and should not always be trusted." This comment broaches another general theme: perceived accuracy of the two tools.

Table 7
Negative comments about online translators.

Negative opinions of OT	Negative actions associated with OT	Aspects not helped by OT
incorrect / not correct [22] inaccurate / not accurate [20] unreliable / can't rely on it [11] wrong [6] literal [4]	not good for learning [5] making errors/mistakes [3] messing up [2] abusing the translator causing laziness	sentences [12] grammar [7] phrases [6] conjugations [5] meanings [4]

not trustworthy / don't trust [4] confusing [3] not good/well [3] not helpful / doesn't help [3] misleading [3] don't like [2] not perfect [2] not right [2] useless / (not) useful [2] basic don't care for faulty flawed hard to use improper (it's a) crutch not dependable not effective not a fan problematic	causing over-reliance not good for checking not translating properly not understanding showing a lack of respect for native speakers	words [3] structures [2] verbs [2] context definitions dialogue expressions format tenses vocabulary

Note: Figures in brackets indicate the number of participants that used that descriptor.

The issues of accuracy and correctness

Some participants also offered their impressions about the performance of ODs, finding them to be accurate (6) or effective (1), or to have "correct results" (1). Some sample comments talk about ODs' performance in this area (e.g. "Online dictionaries are very helpful. It is quick and accurate from experience"), while others specifically compared the correctness of ODs as compared to OTs: "I like online dictionaries because they are really helpful for remembering specific words. They are more accurate."

Despite this, positive views on online translator accuracy were similar overall to those for ODs, with eight students mentioning they think OTs are accurate (3), effective (2), provide correct results (2), or are "spot on" (1). These opinions do not mean that ODs and OTs have similar accuracy in practice — further research would be needed to see whether students commit more errors with one compared to the other, or whether students complete compositions with similar speeds when using the two tools — but it is interesting to note that some students mentioned these factors for both tools. One participant stated: "I use them to get correct results," while another said "I believe they are helpful and accurate."

Negative opinions expressed about accuracy, however, show a marked difference between the two tools. Only three participants questioned the accuracy of ODs (saying they were either "inaccurate" (1), "wrong" (1), or not "correct" (1) in their opinion). Conversely, the main focus of negative comments about OTs was accuracy, with over 50 comments directly addressing this. OT output was view as incorrect/not correct (22), inaccurate/not accurate (20), wrong (6), not right (2), faulty (1), flawed (1), or not effective (1). As with ODs, these negative comments may indicate an underlying expectation that is not being met: students

may be anticipating accuracy from online translators, but the actual output from the OTs does not correspond to their preconceived notions in this area. Accuracy appears to be a noteworthy difference in the perceptions of online dictionaries and translators. As mentioned above, only three participants specifically called out ODs as being inaccurate. Other negative views for the use of OTs and the aspects of language they deal with include making errors or mistakes (3) or "mess(ing) up" (2). The views on perceived lack of accuracy and reliability for OTs points to a core issue: while 87.7% of students use OTs, there are clearly a number of students who are not confident that online translation can give them reliable data that they can use in their writing.

It is also important to note that while initially appearing to be a more objective assessment by respondents, "accuracy" can in fact mean different things to different people: how many mistakes, if any, would still be considered accurate results likely varies from one person to another; in addition, while not co-occurring in a given comment, reliability and accuracy are related concepts between which students may not be drawing a clear distinction.

The issues of usability and (over)reliance

According to the data, there are no distinct patterns in how students use ODs or OTs. Several people found ODs to be quick (4), fast (2), rapid (1), or speedy (1); while similar numbers found them to be handy (3), convenient (3), accessible (1) or practical (1). These descriptors, taken as a whole, are generally related to emotional or personal attitudes or preferences related to ODs: this is the reaction to their experiences with the tool. Somewhat surprisingly, reports about speed for OTs were similar to those of online dictionaries, with only one student each mentioning that online translation was faster, quick, or good for speed.

Compared to ODs, fewer participants said that OTs were convenient (1), practical (1), or available "at your fingertips" (1). This does not necessarily mean that participants find online translators to be slow or inconvenient; it just means they did not mention speed and convenience as often in their opinions, perhaps due to choosing to discuss other issues. In fact, several respondents directly compared ODs unfavorably to online translators, saying an OD "take(s) longer" to use. An additional person said using online dictionaries was "time consuming," which one comment each for ODs being tedious and "not user friendly"). It is interesting to note that these comments were generally in the negative, which may indicate that students had prior expectations for ODs that are not being met in actual use. On the other hand, only one student stated that OTs were "hard to use," which suggests that at least some students find OTs comparatively easier to use.

Two areas from the data that may be related are whether or not ODs and OTs are essential for learning, or rather an unwelcome guest in the learning process. One opinion of online translators not mentioned by anyone for ODs was the idea that online translators are "necessary" (2), "essential" (1), and "needed" (1). An area that drew some attention from participants was the possibility of relying too much on online translation: participants raised the risks of "abus(ing)" the translator (1), laziness (1), and over-reliance on the OT, in

addition to one participant characterizing OTs as a "crutch when it comes to learning." These views were not mentioned in relation to online dictionaries. The comments about abuse of the translator appear to go beyond ease of use (is the interface or function of the tool user-friendly?) and speak towards a negative overuse (is the tool being used too frequently without sufficient reflection or effort on the student's part?). The following two comments also would support this possible interpretation: one student "like[s] them [OTs], but they take away from the amount of Spanish you actually learn," while another asserts that OTs "are useful, but a slippery slope to laziness."

On the other hand, one area that was less negative for OTs as compared to ODs was in convenience. It is possible that the three issues are related: some students may believe that OTs are unreliable, but use them anyway because they perceive them to be more convenient or easier to use. They may also be using OTs as a sort of "crutch" to help them complete assignments. This intersection between ease of use and overuse may point to a tendency on the part of some students to use OTs as an expedient way to complete a given assignment, as opposed to a tool that assists in reflection and learning. Since the literature mentions that this is a concern expressed by some instructors (e.g. Clifford et al. 2013), such comments may be confirmation that at least in some cases, online translation is being used as a means to an end as opposed to a learning tool. An important caveat, however, is the fact that so many students (82.3%) report using an online translator sometimes, often, or always even in cases when there is no graded assignment. This finding would suggest that finishing an assignment is not the only motivation for student use of OTs.

Since these comments are isolated responses from different respondents and did not co-occur within a student's questionnaire, it is important not to overemphasize this possibility: future research could specifically ask students about why they use online translation in spite of the fact that some view it as inaccurate, or why some feel they may be overusing OTs.

What students use or do not use ODs and OTs for

Participants also mentioned for what areas they use online dictionaries and translators, and with what aspects of the language they receive assistance. Some similarities can be noted; for example, participants mentioned using an OD for help with individual words (32) and vocabulary (6); similar but somewhat smaller numbers of participants use OTs for individual words (26) and vocabulary (2). Participants check or double-check usage with an OD (6) or an OT (4). Six participants said that OTs help them with their learning (5) or gaining knowledge (1); similarly, four participants said ODs help with learning. While a number of other common uses are mentioned for both online dictionaries and translators, the number of participants mentioning them for each tool sometimes varies widely. One use of ODs, looking something up (13), was mentioned by only one participant as something they perform via online translation. Participants also report turning to ODs for conjugations (15) and meanings (10) more than they reported using OTs for these purposes (2 and 3, respectively). On the other hand, more participants reported using OTs for understanding (12) as compared to doing so with online dictionaries (5). More students also said they use online translation for

phrases (8) and sentences (8) as compared to those reporting doing so with online dictionaries, with two participants each saying they use ODs this way. Some items that participants mentioned only using ODs for include finding new words (1), hearing new words (1), spelling (2), and information about dialects (1). Other items were mentioned solely for OTs, including figuring out what to say (1), structures (2), and translating paragraphs (1). Although participants use online dictionaries and translators in similar percentages, these numbers show the ways in which they use them can sometimes diverge. There appears to be a slight trend towards using ODs for more specific, concrete skills (e.g. looking up, double-checking) and using OTs for broader, less concrete language use (e.g. understanding, learning).

Specific aspects mentioned by participants holding a negative opinion of online dictionaries were that they believed ODs did not perform well with sentences (5) and conjugations (2), or were not good for learning (2). Since the percentage of negative comments about ODs was small, representing only 6.38% of all views expressed about this tool, it appears that students had relatively little critique to make of ODs. Some judged that OTs were not good for grammar (7), phrases (6), conjugations (5), meanings (4), words (3), structures (2), and verbs (2). It is interesting to note that some of these (e.g. words, phrases, sentences) were mentioned by other participants as aspects affected positively by OT use, suggesting that participants have had different experiences, or have at least perceived the output of OTs differently.

There was one main point of commonality between negative views of ODs and OTs. Interestingly, the top aspect mentioned as a negative for ODs, sentences, was also at the top of the list for OTs (12), even though OTs are arguably more suited for translating complete sentences; dictionaries generally allow only for searching isolated words or some common short phrases. Given these results, and the fact that students found ODs and OTs to be useful at similar rates, perceived performance on full sentences does not seem to be a differentiating factor in student opinions on the two tools.

In summary, online dictionaries are largely viewed positively by participants, with positive opinions outweighing negative ones by over a nine-to-one ratio; online translators, while enjoying nearly the same number of positive comments, were somewhat more polarizing, with nearly one in four comments expressing a negative opinion about OTs. Several quotations from participants are indicative of the positive opinions of some participants related to both ODs and OTs. Most spoke positively in absolute terms about ODs (e.g. "Online dictionaries are great tools for reference for outside class assignments"; "I could not pass this course without it"), while others compared them favorably to online translation (e.g. "I feel that online dictionaries are better because they show you how to use the words"; "I have found that online dictionaries, unlike translators, are typically more helpful. They cannot help form full sentences but give more insight into individual words and their conjugations." There were fewer critiques of ODs than OTs, with one student saying that it is "tedious and inaccurate" to "piece a sentence together by looking up each word."

Although there were a large number of positive comments related to online translators (e.g. "I do believe they are useful because we take time to look at more Spanish"; "They are the reason I have passed Spanish through the years"), it is important to point out that most negative comments in the survey were directed towards OTs, including some harsh critiques: one student said that "online translators keep students from actually doing work themselves" and another going as far as to say "I wish I never would have used it because I think I now rely on it far too much."

Limitations and Further Research

The current study looked at third- and fourth-semester students at a university setting at one institution. It is possible other levels and settings (such as K-12) would find different rates of use for online dictionaries, translators, and search engines, and other opinions related to ODs and OTs. It might be fruitful to divide question items further, for example by asking students when they use the tools for more specific purposes (e.g., not just graded work globally, but specifically for compositions, online workbook exercises, etc.). The questions related to participant opinions contained the word "useful"; although the question does not require the use of this word in the response, it may explain in part why this word and the semantically-related words "helpful" and "help" were often included by participants. The Likert-type scale used for the survey could have been better operationalized, with more explicit instructions or examples of what descriptors such as "sometimes" or "always" might mean within or across assignments to ensure inter-subject reliability in their self-reporting. Attitudes on search engines can be investigated to see what students' opinions are, and perhaps to discover why they are used often but to a lesser degree than the other two tools.

Additionally, it would be enlightening to see how much overlap there is in usage between online translators, dictionaries, and search engines: students may use two or all three resources on a given task, either in tandem or for different portions of the task; for example, one participant in the current study indicated that s/he uses "dictionaries to make sure the translators are giving me the right words." The contexts and extent to which the three online resources are used could provide more insight into how much they are being used.

An important avenue of future research would be looking into specific ways that online translation, ODs, and SEs might be introduced to students. A number of articles, both historically and recently (e.g. McCarthy 2004, Niño 2009, Clifford et al. 2013, Ducar & Schocket 2018), call for at least some role for using OTs in the classroom to guide students in how best to use or not use this tool, with no clear consensus on best practices. An upcoming article from the current author (O'Neill submitted) looks at an example of specific online training sessions for online dictionaries and translators in a study conducted to investigate, in part, the effects of such guidance on student written production.

Lastly, while out of the purview of the current article, the effect of these tools on learning and written expression should be explored further to see what positive or negative impact, if any, the prevalent use of online resources has on student learning.

Implications and Conclusion

The fact that nearly nine in ten participants reported using online dictionaries and translators for graded work, and three in four using search engines, suggests a need for teachers to talk openly about these tools with their students. With so many language students using OTs even when they are prohibited, it may be time to reconsider classroom policies and instructional strategies related to their use. Students do not appear to be using online resources just to get a good grade or make their work easier, as evidenced by over four out of five students using OTs and ODs even for practice, review, or fun on their own.

Just as with a calculator for math, online tools may be able to assist students in their learning, as well as enhance their understanding and expression in the target language. It is not surprising that 21st-century students are turning to 21st-century technologies to assist them with understanding and communicating in an increasingly globalized world. It is important to acknowledge the use of these resources and attempt to give our students guidance in how to use technology responsibly.

References

Bahri, H., & Mahadi, T. S. T. (2016). Google Translate as a Supplementary Tool for Learning Malay: A Case Study at Universiti Sains Malaysia. *Advances in Language and Literary Studies, 7*(3), 161-167.

Clifford, J., Merschel, L., & Munné, J. (2013). Surveying the landscape: What is the role of machine translation in language learning? @*tic.revista d'innovació educativa,* 10, 108-121.

Cornell, R., Dean, J., & Tomaš, Z. (2016). Up Close and Personal: A Case Study of Three University-Level Second Language Learners' Vocabulary Learning Experiences. *TESOL Journal*, *7*(4), 823-846.

Ducar, C., & Schocket, D. H. (2018). Machine translation and the L2 classroom: Pedagogical solutions for making peace with Google translate. *Foreign Language Annals*, 1–17. https://doi.org/10.1111/flan.12366

Fredholm, K. (2015). El uso de traducción automática y otras estrategias de escritura digital en español como lengua extranjera, *Estudios de Lingüística Aplicada* 62, 9-32.

Jin, L., & Deifell, E. (2013). Foreign language learners' use and perception of online dictionaries: A survey study. *MERLOT Journal of Online Learning and Teaching,* 9, 515-532. Retrieved from: http://jolt.merlot.org/vol9no4/ jin_1213.pdf.

Jolley, J. R., & Maimone, L. (2015). Free online machine translation: Use and perceptions by Spanish students and instructors. In A. J. Moeller (Ed.), *Learn Languages, Explore*

Cultures, Transform Lives (pp. 181-200). Minneapolis: 2015 Central States Conference on the Teaching of Foreign Languages.

Larson-Guenette, J. (2013). "It's just reflex now": German language learners' use of online resources. *Die Unterrichtspraxis/Teaching German,* 46(1), 62–74.

McCarthy, B. (2004). Does online machine translation spell the end of take-home translation assignments? *CALL-EJ online, 6.1.* Retrieved from http://www.clec.ritsumei.ac.jp/english/callejonline/9-1/mccarthy.html.

Niitemaa, M. L., & Pietilä, P. (2018). Vocabulary Skills and Online Dictionaries: A Study on EFL Learners' Receptive Vocabulary Knowledge and Success in Searching Electronic Sources for Information. *Journal of Language Teaching and Research*, *9*(3), 453-462.

Niño, A. (2009). Machine translation in foreign language learning: language learners' and tutors' perceptions of its advantages and disadvantages. *ReCALL,* 21(2), pp. 241-258. Retrieved, 14.01.2013.

Farzi, R. (2016). *Taming Translation Technology for L2 Writing: Documenting the Use of Free Online Translation Tools by ESL Students in a Writing Course* (Doctoral dissertation, Université d'Ottawa/University of Ottawa).

Tight, D. G. (2017). Tool usage and effectiveness among L2 Spanish computer writers. *ELIA: Estudios de Lingüística Inglesa Aplicada*, 17, 157-182.

White, K. D. & Heidrich, E. (2013). Our Policies, Their Text: German Language Students' Strategies with and Beliefs about Web-Based Machine Translation. *Die Unterrichtspraxis,* 46(2), 230-250.

Wuttikrikunlaya, P., Singhasiri, W., & Keyuravong, S. (2018). "The Use of Online Tools in L2 Writing: A Study of Thai University Students." *Journal of English Language Teaching and English Linguistics* 30(1). Retrieved from http://culi.chula.ac.th/publicationsonline/files/article2/EOVAIjqqFhSat105231.pdf.

Xu, M. & Wang, C. (2011). Translation students' use and evaluation of online resources for Chinese-English translation at the word level. *Translation & Interpreting Studies*, *6*(1), 62-86.