# Professional writers' usage and appreciation of computer tools: Results from a pan-Canadian survey

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## About the Author

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She is also a research member of the CRTL.

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## Ethics Certification

This study was approved by the Ethics committee of research with human subjects at the Université du Québec en Outaouais.

**Executive Summary**

This research report presents the results of a survey on usage and appreciation of computer tools, in which participated 414 Canadian professional writers. The survey was divided in three sections: frequency of use, reasons for not using the computer tools, and appreciation.

First, based on the frequency of use, computer tools were classified according to four categories:

- Always used by almost all professional writers (Web search engines, word processors).

- Frequently used by at least 50% of the professional writers (MS™ Word's review functions, MS™ Word's spelling and grammar checker, online reference materials, electronic encyclopedia).

- Occasionally used by 15-35% of the professional writers (text correction software, terminological databases, file-hosting services, blogs, collaborative work platforms).

- Practically never used by professional writers (authoring memory systems, concordancers, mind-mapping tools, discussion groups).

Second, the survey investigated the reasons why some tools are not used by Canadian professional writers. As it is shown, two reasons account for 76.1% of all cases for not using a tool: not knowing about the tool's existence (42.7%) and the belief that the tool is not needed (33.4%). The third reason in importance for not using a particular tool, but less prevalent (9.5%) than the other two, is not knowing how to use it.

Third, the survey aimed to quantify the appreciation of computer tools by Canadian professional writers. The statistics undeniably prove that positive opinions are more common than negative ones, but there is still room for improvement. The most irritating aspect seems to be the difficulty to work with several computer tools at the same time.

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# 1. Introduction

I teach professional writing at the Université du Québec en Outaouais (UQO) since 2007. In order to best inform my students about the skills they should develop, I have dedicated a part of my research program to the subject of professional writing and computer tools. We can assume that professional writing implies using many computer tools. Which tools are the most frequently used in Canadian workplaces? Why are some computer tools practically never used? What do professional writers think about the computer tools they use? These are the general questions that I address in this research report. More precisely, I will present the results from a pan-Canadian survey on usage and appreciation of computer tools, in which participated 414 Canadian professional writers.

The research report is organized as follows. In the next section, I will summarize the most relevant empirical research on digital writing in the workplace. In the third section, I will present detailed descriptive statistics from the survey with 414 professional writers and discuss the results. In the conclusion, after a brief summary of the most significant findings, I will discuss the implications and provide some ideas for future research on writing tools.

# 2. Background

The most comprehensive prior survey on computer tools used by Canadian professional writers is the one done by Lesage *et al.* (1993). This group of researchers interviewed 225 Canadians in 72 public and private organizations, in order to gather data on computers' characteristics, on software, on reasons for rejecting software or for consulting printed resources, and on appreciation of computer tools. Three types of computer tools were included in the questionnaire: the electronic dictionary, the dictionary of synonyms, and the grammar correction software. The results show that, at the time of the survey, 76% of the respondents were using the electronic dictionary integrated in the word processor (that was a condition to participate in the study), 50% of the respondents were using a grammar correction software, and 18% were using an electronic dictionary of synonyms.

Furthermore, many reasons for not using the writing tools were identified by Lesage *et al.* (1993), for example the feeling that the tools are not needed, the lack of training that would facilitate the effective use of the tools, and the perception that the tools are not efficient. As for the appreciation of computer tools, Lesage *et al.* reported that it was in general positive, even though the respondents made a few demands. To give just an example, the professional writers denounced the absence of specialized vocabulary in electronic dictionaries. While Lesage *et al.*'s research was comprehensive in 1993, we have to admit

that workplace writing has changed a lot over the last 25 years: many writing tools have been created (Max, 2012) and the Internet has been democratized.

The research presented in this report is unique in many aspects:

- It includes 15 computer tools.
- It's recent.
- It's pan-Canadian.
- It has the power of generalization with 414 participants.
- It has quantitative data on reasons and on appreciation.

# 3. Methodology

## 3.1 Participants' recruitment

To be eligible, participants had to meet the following criterion: either write texts on a daily basis as part of their job, or spend at least half of their work time writing. Because the study aspired to generalize to all Canadian professional writers, I estimated the size of the population, that is, the number of Canadian professional writers. According to the most recent available data from the National Occupational Classification (Statistics Canada, 2006), there are 54,550 "professional writers" in Canada. As shown in table 1, this estimation is based on three categories of writers.

**Table 1.** Number of professional writers working in Canada (Statistics Canada, 2006).

| **Occupations** | **N** |
|---|---|
| Authors and writers | 25,020 |
| Editors, writer-editors and news service editors | 16,120 |
| Journalists | 13,320 |
| Total | 54,550 |

The number of participants required for a population of similar size is 381, with a precision level of ± 5% in 95% (see Dépelteau, 2010, 233). The objective was thus set at 400 participants. The recruitment consisted principally of sending out invitations by email. Email addresses were found directly on employers' websites, for example universities, Canadian government departments, provincial government departments, city halls, public relations and media agencies, political parties, non-profit organizations, businesses, research groups or institutes, editors, tourism offices, and advertising agencies. It was assumed that those organizations would employ writers. It was also assumed, however, that professional

writers would not be easy to find because many of them have other job titles. To a lesser extent, websites for language professionals such as writers.ca provided email addresses for self-employed writers. This writers' hunt proved successful. In total, 3,585 emails were sent and 414 full surveys were received[1], rendering a satisfactory response rate of 11.6%.

### 3.2 Survey's design

The survey was created with LimeSurvey (limesurvey.org), in both French and English, Canada's official languages. The survey was available by clicking a link in a message. It comprised 97 questions, divided into 3 sections. The first section focused on the professional writers' profiles and the genres of texts they write, the second section focused on their usage patterns and appreciation of specific computer tools, and the third section focused on their opinion on advantages and disadvantages of using those tools for writing at work.

Data collection took place in 2013, from May to October[2]. All responses were saved in LimeSurvey and then imported into Excel™. Descriptive statistics were automatically computed by LimeSurvey.

## 4. Results from the survey and discussion

Before plunging into results, I will provide some information about the participants' profiles. As shown in table 2, 27.9% of the participants work in public services, 23.3% are self-employed, 20.7% work in universities, 11.1% work in the media, and 7.9% work in non-profit organizations.

**Table 2.** Survey results for the question concerning the type of organization where professional writers work.

| **Type of organization** | **N** | **Percentage (N/484)** |
|---|---|---|
| Public services | 135 | 27.9 |
| Self-employed | 113 | 23.3 |
| University | 100 | 20.7 |

[1] Surveys completed only partially are not taken into account here.

[2] Data collection took place in two waves: a first wave from May to August 2013 in which 146 people participated, and a second wave in September and October 2013 in which 268 people participated. The questionnaire used in the second wave included some minor differences in terms of possible responses for 10 (out of 97) questions. To verify the equivalence of samples in the two waves of data collection, comparisons of means and proportions were performed using t-tests and $Chi^2$ tests on targeted variables such as frequency of use of computer tools, and on a number of randomly selected variables. No significant difference in mean or proportion was generated by these tests, which enabled the merging of data from the two waves.

| | | |
|---|---|---|
| Media | 54 | 11.1 |
| Non-profit organizations | 38 | 7.9 |
| Private sector | 20 | 4.1 |
| Research centers | 10 | 2.1 |
| Professional associations | 9 | 1.9 |
| Political parties | 5 | 1.0 |

*Note.* Respondents could choose more than one answer.

Participants have between 1 and 55 years of experience in professional writing. One half of them write texts in English, and the other half in French. Professional texts cover many subjects, "from coffee to engine oils or even birds" (participant 194, 2nd wave). Table 3 shows the range of documents produced by Canadian professional writers. They could choose more than one response.

**Table 3.** Survey results for the question concerning the genres written by professional writers.

| **Genres** | **N** | **Percentage (N/414)** |
|---|---|---|
| Letters and memos | 217 | 52.4 |
| Newspaper or magazine articles | 172 | 41.5 |
| Web pages | 168 | 40.6 |
| Press releases | 135 | 32.6 |
| Instructions | 126 | 30.4 |
| Minutes from meeting | 116 | 28.0 |
| Ads or promotional material | 116 | 28.0 |
| Briefing notes | 112 | 27.1 |
| Information in social media | 111 | 26.8 |
| PowerPoint presentations | 108 | 26.1 |
| Pedagogical material | 97 | 23.4 |
| Research reports | 92 | 22.2 |
| Blogs | 90 | 21.7 |
| Annual reports | 89 | 21.5 |
| Policies | 55 | 13.3 |
| Grant applications | 55 | 13.3 |
| Popular scientific work | 54 | 13.0 |
| Technical documents | 52 | 12.6 |
| Scientific documents | 46 | 11.1 |

*Note.* Respondents could choose more than one answer.

Statistics in table 3 confirm that Canadian professional writers produce a wide range of documents. For example, 52.4% of the respondents write letters and memos, 41.5% write

newspaper articles[3], 40.6% write Web pages, 32.6% write press releases, and 30.4% write instructions. Some of the professional documents in table 3 are accounted for in Spartz & Weber (2015)'s study of writing entrepreneurs, for example: letters, memos, PowerPoint presentations, blogs, and grant applications.

## 4.1 Computer tools' frequency of use by professional writers

The survey aimed to measure computer tools' frequency of use. The 15 computer tools listed in the survey were selected after a focus group conducted in 2012 (Goulet, 2012). For each tool, respondents were asked "How often do you use this tool?" This question was accompanied by 4 exclusive options: "always", "often", "occasionally, and "never". The results are presented in table 4.

**Table 4.** Survey results on computer tools' frequency of use, ranked by number of responses for "always" (n = 414).

| **Computer tools** | **Frequency of use %** | | | |
|---|---|---|---|---|
| | **Always** | **Often** | **Occasionally** | **Never** |
| Word processors (ex.: MS™ Word) | 85.5 | 11.1 | 1.9 | 1.5 |
| Web search engines (ex.: Google™) | 69.6 | 28.7 | 1.5 | 0.2 |
| MS™ Word's spelling and grammar checker | 34.3 | 22.7 | 24.4 | 18.6 |
| Text correction software (Antidote™ or WhiteSmoke™) | 25.9 | 8.9 | 4.3 | 60.9 |
| MS™ Word's review functions | 22.5 | 43.0 | 27.5 | 7.0 |
| Online reference materials (ex.: Bescherelle™) | 13.1 | 37.2 | 41.5 | 8.2 |
| Terminological databases (ex.: Termium™) | 10.1 | 18.6 | 24.9 | 46.4 |
| File hosting services (ex.: Dropbox™) | 9.7 | 16.9 | 37.4 | 36.0 |
| Electronic encyclopedia (ex.: Wikipedia™) | 7.0 | 43.2 | 44.0 | 5.8 |
| Collaborative work platforms (ex.: SharePoint™) | 5.6 | 9.9 | 24.1 | 60.4 |
| Blogs | 4.3 | 13.5 | 26.6 | 55.6 |
| Authoring memory systems (ex.: Congree™, Author-it™) | 2.7 | 2.4 | 5.1 | 89.8 |
| Concordancers (ex. TransSearch™) | 2.4 | 4.8 | 3.4 | 89.4 |
| Discussion groups | 1.4 | 6.5 | 27.8 | 64.3 |
| Mind mapping tools (ex.: CmapTools™, MindViews™) | 0 | 1.4 | 11.4 | 87.2 |

[3] It should be reminded that 11.1% of the survey participants work in media, which could explain the relatively high proportion (41.5%) of persons that reported writing newspaper or magazine articles.

The second column of this table indicates the proportion of professional writers who "always" use each tool. As we can see, 85.5% of professional writers always use the word processors, and 69.6% of professional writers always use the Web search engines. The proportion then drops to 34.3% for MS™ Word's spelling and grammar checker, and so on. If we look at the third column, we notice that some tools obtained relatively high proportions for the "often" option. For example, 43.0% of professional writers reported that they often use the MS™ Word's review functions, 43.2% reported that they often use the electronic encyclopedia, and 37.2% reported that they often use the online reference materials. If we merge professional writers who always use a tool with those who often use it, we obtain a new total, as shown in table 5.

**Table 5.** Survey results on computer tools' frequency of use, ranked by number of responses for "always" + "often" (n= 414).

| **Computer tools** | **Frequency of use (always + often) %** |
|---|---|
| Web search engines | 98.3 |
| Word processors | 96.6 |
| MS™ Word's review functions | 65.5 |
| MS™ Word's spelling and grammar checker | 57.0 |
| Online reference materials | 50.3 |
| Electronic encyclopedia | 50.2 |
| Text correction software | 34.8 |
| Terminological databases | 28.7 |
| File hosting services | 26.6 |
| Blogs | 17.8 |
| Collaborative work platforms | 15.5 |
| Discussion groups | 7.9 |
| Concordancers | 7.2 |
| Authoring memory systems | 5.1 |
| Mind mapping tools | 1.4 |

Table 5 shows that, among the 15 computer tools listed in the survey, Web search engines and word processors are the two most frequently used computer tools, with respectively 98.3% and 96.6% of professional writers who use them "always" or "often". Four computer tools are frequently used by 50% or more: MS™ Word's review functions, MS™ Word's spelling and grammar checker, online reference materials (for ex. grammar books), and electronic encyclopedia (for ex. Wikipedia™). Let me briefly comment on results for MS™ Word package. The survey indicates that MS™ Word's spelling and grammar checker is more frequently used (57.0%) than WhiteSmoke™ or Antidote™ (34.8%). However, these statistics have to be interpreted in light of the fact that MS™ Word package is omnipresent in Canadian workplaces. In other words, this preference could be contextual.

Table 5 also reports that 50% of the respondents frequently use online reference materials and electronic encyclopedia, which confirms that professional writers use electronic resources to look for linguistic information and to find information relevant to a project. If we add the fact that 17.8% of the professional writers frequently use blogs, and that 7.9% frequently use discussion groups, we can conclude that the Web is becoming (or has already become) a predominant source of information for professional writers. This conclusion is in line with Ferro & Zachry (2014), who reported that many knowledge workers use publicly available services such as blogs and forums to complete work tasks.

Nine computer tools received scores below 50%. More precisely, 15-35% of professional writers occasionally use text correction software (WhiteSmoke™ or Antidote™), terminological databases, file-hosting services, blogs, and collaborative work platforms. According to these results, two hypotheses can be drawn: either these tools are in the "process of spreading" or writers do not find them useful for professional purposes. As we will see later, the survey provides information about the reasons why some computer tools are not used by professional writers.

Finally, the results also show that some tools are practically never used: 1-8% of professional writers frequently use authoring memory systems, concordancers, discussion groups, and mind-mapping tools. These tools were added after the focus group study, because they were mentioned by some participants. However, results from the survey clearly indicate that these three tools are not widespread in Canadian workplaces. Finally, based on these results, computer tools can be classified into four categories:

1. Always used by almost all professional writers: the Web search engines, and the word processors.
2. Frequently used by at least 50% of the professional writers: the MS™ Word's review functions, the MS™ Word's spelling and grammar checker, the online reference materials (ex.: grammar books and dictionaries), and the electronic encyclopedia (ex.: Wikipedia™).
3. Occasionally used by 15-35% of the professional writers: the text correction software (WhiteSmoke™ or Antidote™), the terminological databases, the file-hosting services, the blogs, and the collaborative work platforms.
4. Practically never used by professional writers: the authoring memory systems, the concordancers, the mind-mapping tools, and the discussion groups.

To sum up, the results presented in this section provide a general picture of the computer tools' usage by Canadian professional writers. As it was demonstrated, the computer tools' frequency of use can vary a great deal. To remind just two opposite results, we saw that 85.5% of the survey respondents always use a word processor, while 0% of them always use an authoring memory system. In the next section, I will identify the main factors that

motivate the professional writers to integrate (or not) technologies into their writing environment.

## 4.2 Reasons for not using computer tools

The survey gathered data in order to determine why some computer tools are not used by Canadian professional writers. When respondents ticked the "never" option, a block of possible reasons appeared, and they had to decide which one(s) related to them. Reasons included in the survey were inspired by the focus group study (Goulet, 2012). Respondents were allowed to check more than one reason. For example, someone may have ticked "I do not need this tool" along with "This tool is not effective". Table 6 presents the proportion that each reason represents, all tools considered. The total number of possible answers (N) for each row is 15 computer tools *x* 414 respondents = 6210.

**Table 6.** Survey results on the reasons for not using computer tools, all tools considered, ranked by number of responses.

| **Reasons** | **N** | **Percentage (N/2534)** |
|---|---|---|
| I did not know this tool existed. | 1082 | 42.7 |
| I do not need this tool. | 847 | 33.4 |
| I do not know how to use this tool. | 241 | 9.5 |
| This tool is not efficient. | 89 | 3.5 |
| I do not want to modify my work habits. | 63 | 2.5 |
| I prefer to use printed resources. | 52 | 2.1 |
| My work environment is resistant to this type of tool. | 46 | 1.8 |
| My employer does not want to buy this tool. | 44 | 1.7 |
| I fear that this tool would slow me down. | 42 | 1.7 |
| I cannot afford to buy this tool. | 28 | 1.1 |
| Total | 2534 | 100 |

*Note.* Respondents could choose more than one answer.

Table 6 shows that, from a quantitative point of view, the most common reason for not using a computer tool is not knowing about its existence, which represents 42.7% of all cases. In second place, the belief that the tool is not needed represents 33.4%. Together, these two reasons account for 76.1% of all cases for not using a tool. In third place, but less prevalent, the lack of knowledge on how to use a computer tool represents 9.5% of all reasons for not using a tool. All tools considered, the seven other reasons listed in the survey were not very popular. For example, "I cannot afford to buy this tool" represents 1.1% of all cases. For the rest of this section, I will concentrate on the three main motives chosen by Canadian professional writers to justify why they do not use some tools. Table 7

reports on the three main reasons chosen by professional writers, for each tool listed in the survey.

**Table 7.** Survey results on the reasons for not using specific computer tools, ranked by number of responses.

| **Computer tools** | **Main reasons for not using %** | | | **N** |
|---|---|---|---|---|
| | Did not know it existed | Do not need it | Do not know how to use it | |
| Authoring memory systems | 64.2 | 11.4 | 11.4 | 405 |
| Concordancers | 64.4 | 20.1 | 10.3 | 379 |
| Mind mapping tools | 38.2 | 39.3 | 11.6 | 361 |
| Text correction software | 63.5 | 11.1 | 4.8 | 271 |
| Collaborative work platforms | 23.5 | 48.6 | 12.5 | 255 |
| File hosting services | 19.7 | 47.6 | 7.5 | 147 |
| Discussion groups | 2.6 | 67.1 | 5.1 | 234 |
| Blogs | 0.5 | 74.2 | 6.7 | 209 |
| Terminological databases | 47.9 | 30.2 | 10.4 | 192 |
| MS™ Word's checker | 2.3 | 23.0 | 1.1 | 87 |
| MS™ Word's review functions | 5.4 | 32.4 | 13.5 | 37 |
| Online reference materials | 25.0 | 39.3 | 14.3 | 28 |
| Electronic encyclopedia | 19.2 | 26.9 | 3.8 | 26 |
| Word processors | 0 | 60.0 | 20.0 | 5 |
| Web search engines | 0 | 0 | 0 | 1 |
| | | | | 2637 |

We first notice, in table 7, that the most frequent reason for not using a tool, "I did not know that tool existed", is the most important one for four tools: the authoring memory systems, the concordancers, the text correction software (WhiteSmoke™ or Antidote™), and the terminological databases. We also notice that the second most frequent reason for not using a tool, "I do not need that tool", is the most important one for nine tools: mind mapping tools (although almost equal to the first reason), collaborative work platforms, file-hosting services, discussion groups, blogs, MS™ Word's review functions, online reference materials, electronic encyclopedia, and word processors (only 1 case).

The third reason included in table 7, "I do not know how to use this tool," was formulated after some participants of the focus group had expressed their desire to use new computer tools, but, at the same time, feared that they would not know how to use them. Statistics

from table 7 indicate that this obstacle is not the most important reason, for any of the tools listed in the survey.

This leaves us with the MS™ Word's checker and the Web search engines. As we can deduct from table 7, the most important reason for not using the MS™ Word's checker is not one of the three most prevailing ones. In fact, the most important reason for not using the MS™ Word's checker is the belief that it is not efficient with 42.5%. Considering that this reason represents only 3.5% of all cases in the survey (see table 6), it is clearly over-represented for this tool. Finally, the reason for not using Web search engines (only one case) is the preference for printed resources.

To summarize this section, these survey results emphasize the main motives that could explain why some computer tools are not used by professional writers. As we saw, the most common reason for not using a computer tool is not knowing about its existence, as it represents 42.7% of all cases. In second place, the belief that the tool is not needed represents 33.4%. In third place, not knowing how to use a tool represents 9.5% of all cases. If we put aside the one professional writer who never uses Web search engines, the only tool that doesn't fit into this general pattern is the MS™ Word's spelling and grammar checker. As a reminder, the most important reason for not using the MS™ Word's checker is the belief that it is not efficient (42.5%), while this reason represents only 3.5% of cases, all tools considered. Does this mean that Canadian professional writers have a negative opinion about the MS™ Word's checker? In the next section, I will provide quantitative data on professional writers' appreciation of each computer tool.

## 4.3 Professional writers' appreciation of computer tools

Several survey questions were designed to quantify the professional writers' opinions regarding the advantages and disadvantages of using computer tools. The first strategy used to measure the professional writers' appreciation was to present them with nine statements about computer tools. Once again, the contents of the survey were inspired by the focus group study.

The statements were divided into two separate blocks, a block of positive statements and a block of negative statements. Fig. 1 summarizes the general statistics for this section of the survey.

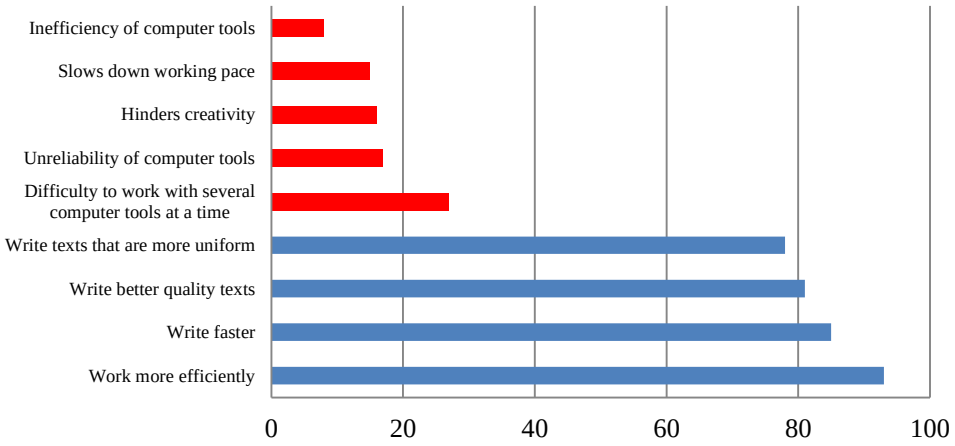


**Fig. 1**. A chart of the proportions of professional writers who agree or strongly agree with statements describing advantages (blue) and drawbacks (red) of using computer tools.

As we can see in fig. 1, 78-92% of the professional writers "agree or strongly agree" that computer tools allow them to work more efficiently, write faster, write better quality texts, and write texts that are more uniform. On the other hand, 8-27% of professional writers "agree or strongly agree" that computer tools are inefficient, slow down their working pace, hinder creativity, are unreliable, or that it is difficult to work with several computer tools at the same time. Concerning the latter, in 1993 Lesage *et al.* advised the language industry to integrate writing technologies in a generic tool. While some steps have been made towards that goal, for example in MS™ Word and Antidote™, it seems that improvement is desirable. But generally, it can be concluded that positive evaluations are more common than negative ones.

The second strategy used to gather information on computer tools' appreciation by professional writers was to present them with statements each time they confirmed using a tool. The respondents could select one or more statements among the following: "I like using it", "I could not work without it", "I like using it, but can work without it", "I would like to know how to use it better", "It is difficult to work with it", and "I do not like using it". Results from this part of the survey are presented in table 8.

**Table 8.** Survey results for computer tools' appreciation, ranked by total number of responses.

| | % | | | | | | |
|---|---|---|---|---|---|---|---|
| | Like using it. | Could not work without it. | Like using it, but can work without it. | Would like to know how to use it better. | Difficult to work with it. | Do not like to use it. | **N** |
| Word processors | 28.7 | 43.7 | 11.0 | 14.3 | 1.0 | 1.4 | 575 |
| Web search engines | 28.9 | 58.0 | 4.5 | 8.5 | 0 | 0 | 553 |
| MS™ review functions | 29.0 | 18.1 | 27.0 | 15.5 | 4.4 | 6.2 | 504 |
| Electronic encyclopedia | 40.3 | 14.9 | 36.3 | 5.9 | 0.2 | 2.4 | 424 |
| Online reference materials | 36.1 | 11.5 | 36.3 | 12.2 | 1.7 | 2.2 | 410 |
| MS™ Word spelling and grammar checker | 30.7 | 13.9 | 34.8 | 9.1 | 1.5 | 10.0 | 378 |
| File hosting services | 32.2 | 16.6 | 26.3 | 15.9 | 4.7 | 4.4 | 320 |
| Terminological databases | 33.0 | 23.4 | 22.7 | 15.6 | 5.0 | 0 | 282 |
| Correction software | 29.9 | 40.3 | 14.5 | 11.3 | 2.3 | 1.8 | 221 |
| Blogs | 37.3 | 12.3 | 34.3 | 9.3 | 2.9 | 3.9 | 204 |
| Collaborative work platforms | 26.0 | 8.3 | 26.5 | 20.4 | 13.3 | 5.5 | 181 |
| Discussion groups | 38.4 | 6.7 | 34.1 | 10.4 | 6.7 | 3.7 | 164 |
| Mind mapping tools | 23.0 | 4.9 | 34.4 | 31.1 | 6.6 | 0 | 61 |
| Concordancers | 40.0 | 34.5 | 16.4 | 9.1 | 0 | 0 | 55 |
| Authoring memory systems | 45.5 | 36.4 | 21.2 | 24.2 | 6.1 | 3.0 | 33 |
| Total | 32.1 | 25.7 | 23.9 | 12.4 | 2.8 | 3.1 | |
| N | 1393 | 1113 | 1036 | 538 | 122 | 136 | 4326 |

As we can see in the last row of this table, the most predominant assertion, all tools considered, is "I like using it" (32.1%). In second and third places, we have respectively "I could not work without it" (25.7%) and "I like using it, but can work without it" (23.9%). "I would like to know how to use it better" comes in fourth place with 12.4%. Finally, the two negative statements "It is difficult to work with it" and "I do not like using it" represents respectively 2.8% and 3.1% of all cases.

To summarize, quantitative data presented in this section demonstrate that overall, more professional writers have positive opinions about computer tools than negative ones, and this conclusion applies to all tools listed in the survey.

# 5. Conclusion

In this research report, I presented results from a pan-Canadian survey on usage and appreciation of computer tools, in which participated 414 professional writers. Using evidence from general statistics, I was able to establish that almost all Canadian professional writers always use the Web search engines and the word processors. I also identified the four other most frequently used computer tools, that is, the MS™ Word's review functions, the MS™ Word's spelling and grammar checker, the online reference materials (ex. grammar books and dictionaries), and the electronic encyclopedia (ex. Wikipedia™). As I have underlined, the MS™ Word package is omnipresent in Canadian workplaces, which could amplify the MS™ Word's review functions' and the MS™ Word's spelling and grammar checker's popularity. In other words, the preference for Word's checker over another software could be contextual.

The survey also revealed that five computer tools are occasionally used by Canadian professional writers: the text correction software, the terminological databases, the file-hosting services, the blogs, and the collaborative work platforms. Lastly, Canadian professional writers practically never use the authoring memory systems, the concordancers, the mind-mapping tools, and the discussion groups. Why? The survey provided valuable insight to answer this question. As we saw, two reasons account for 76.1% of all cases for not using a tool: not knowing about the tool's existence (42.7%), and the belief that the tool is not needed (33.4%). The third reason in importance for not using a particular tool, but less prevalent (9.5%) than the other two, is not knowing how to use it. Furthermore, the quantitative study undeniably proved that positive opinions about computer tools are more common than negative ones, but there is room for improvement. The most irritating aspect, from a quantitative point of view, is the difficulty to work with several computer tools at the same time.

These results could have implications related to industry, university and research. First of all, could the fact that professional writers are not using some potentially useful computer tools suggest that is a "digital divide" between the workplace and the industry? If so, scholars (including me) could play a role in creating or maintaining bridges between developers and users. For example, knowledge about writing tools could be disseminated to self-employed writers by offering conferences to professional associations or by publishing popular scientific work on open-access platforms such as blogs. Knowledge about the software industry should also be disseminated to the employers and to the people who have the power to decide on which writing tools can be used at work.

In Canada, and possibly in the United States, pressure is put on universities to take responsibility for practical training. According to Takayoshi & Huot (2003), the fact that

technological skills are required for workplace writing commands for them to be taught in universities. Many teachers are against this transformation of the university and expect employers to take some responsibility for training, but the fact remains that it is happening. As a teacher, I ought to give my students the necessary practical and critical skills in order for them to become effective and intelligent users of writing tools. Hopefully, the empirical data gathered in this research report can contribute, even modestly, to guide other instructors and administrators in the implementation and use of technologies in writing classes.

Thirdly, we now know which computer tools are the most frequently used by Canadian professional writers, but we do not know what they actually do with those tools. If we agree that computer tools and other digital technologies have transformed the writing activity, we must collect empirical data on *actual* writing. What are the concrete affordances of existing as well as emerging computer tools? Do professional writers make unusual use of some tools? How do they customize their writing environment? What are the most popular combinations? These research questions are the more meaningful that the computer industry will continue to offer new tools to assist professional communicators in writing, revision, and text structuring (Max, 2012). The question is: will writing transform according to writers' needs or be shaped by the industry offering?

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