

Computer-Assisted Language Use: An Internet Survey

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Abstract

Non-native speakers of English often use computers to enhance their use of English without necessarily trying to learn the language. Computer applications promoting such use are termed computer-assisted language use or CALU and may be of particular importance in occupational contexts. Examples of CALU applications include computer-mediated communication, online dictionaries, and word processing. To investigate how frequently such CALU applications are used, an Internet survey was conducted in Thailand. The 95 responses to the survey highlighted the high frequency of use of CALU applications suggesting that CALU is an important area. However, although they are frequently used by non-native speakers, many current CALU applications are not designed for these users and do not promote incidental learning. Directions for developing CALU applications to be more beneficial are given.

Introduction

In this paper, I will examine how non-native speakers who are not engaged in formal learning of English use computers to enhance their use of English. In doing this, these language users are not necessarily trying to learn anything about the language; rather, their focus is on comprehending and producing English more effectively. This paper, then, does not directly concern computer-assisted language learning (CALL) since the final 'L' for learning is not a focus. Instead, it concerns computer-assisted language use, or what we might term CALU.

For many non-native speakers, being able to use English effectively may be of more importance than learning the language. After all, learning is usually not a goal in itself but rather a means to the end of effective language use. In non-learning situations such as the workplace where non-native speakers are focused on using English, any language-oriented computer use is more likely to involve CALU than CALL. It should be stressed that CALL and CALU should not be seen as a contrastive dichotomy; rather, they should be viewed as a continuum from a pure language use focus through a mix of focuses to the pure use of computers for language learning.

Although much exposure to and production of English by non-native speakers is a mixture of CALL and CALU, Within the ELT literature there has been a heavy focus on CALL with little attention paid to CALU, even though for many non-native speakers the latter may be more important. This paper attempts to redress the balance a little by reporting on a survey investigating English users' perceptions of the importance of various CALU applications.

Background

Categorisations of CALL

Even though this paper focuses on CALU rather than CALL, the wide-ranging literature on CALL does provide a useful starting point from which to investigate CALU. The extensive use of a wide range of computer applications in language learning has spawned several attempts to provide order to a sprawling discipline. These attempts generally fall into two types. Most frequent are taxonomies of different applications, but there have also been a few attempts to provide more theoretically grounded categorisation systems.

Taxonomies of CALL applications first appeared in the 1980s as a greater variety of applications became available. Most taxonomies (e.g. Beatty, 2003; Desroches and Gentry, 2004; Jarvis, 2002, 2004; Otto, 1988; Schreck and Schreck, 1991; Shrum and Glisan, 1994; Warschauer and Healey, 1998) have a high degree of overlap and typically include dedicated software (including tutorials and drill-and-practice), simulations, synchronous and asynchronous Internet-based communication, dedicated ELT and non-dedicated websites, concordancing, authoring programs, word processors, spelling and grammar checkers, dictionaries and thesauruses, and text analysis tools. While useful in presenting the range of alternatives available, these taxonomies are purely descriptive and do not usually provide meaningful groupings of the applications.

In contrast to the list-like nature of most CALL taxonomies, the categorisation systems aim to classify CALL applications into a limited number of groups, the bases of which are theoretically grounded. The best-known categorisation is the division of CALL into three historical stages of Warschauer (1996) and Warschauer and Healey (1998). These stages of behavioristic, communicative, and integrative CALL can be matched with the teaching methodologies dominant in ELT in the same timeframe as the CALL stages. This model has been criticised by Bax (2003) who argues that Warschauer's three historical stages of CALL should be replaced by the alternative stages of restrictive, open, and integrated CALL. Whichever interpretation of the historical stages of CALL is used, these categorisations have two limitations. First, their historical basis limits their usefulness to teachers and language users for analysing the current range of CALL applications. Second, since they are categorisations of CALL, they are concerned with how non-native speakers can use computers to help in learning languages and do not consider how computers can help in using non-native languages, the focus of this study.

A third categorisation is even more explicit in its applicability to CALU. Warschauer's historical stages of CALL are partly based on three models of computer-assisted instruction developed by Taylor (1980). The first model is of the computer as tutor, applicable to drill-and-practice CALL activities, where the computer delivers the learning materials and provides feedback. Secondly, there is the computer as stimulus, where the computer stimulates students' discussion and writing, such as in role-playing games. The third model, exemplified by word processors and grammar checkers, is the computer as tool, in which the computer does not provide learning material, but empowers users to actually use language. This third model of computer as tool, with its emphasis on language use over learning, has clear implications for CALU.

Although they make up the third model of computer as a tool and may also concern the second model of computer as a stimulus, many CALU-oriented applications – word

processors, spelling and grammar checkers, online dictionaries and thesauri, automatic translation programs, text summarisers and so on – have generally received short shrift in the CALL literature, presumably because they are not designed for learning. In many of the taxonomies of CALL applications, these tools have the feel of being add-ons to the lists just to ensure comprehensive coverage. Yet, even though their importance for learning language is unclear, Beatty (2003) highlights their importance in business environments where the language learnt is often to be used. In many ways, this sidelining of CALL applications mirrors a general tendency in ELT, understandable given the nature of the discipline, to focus on language learning at the expense of language use.

The importance of language use

In English as a foreign language context, most learners of English, if they have a purpose, are learning the language for instrumental reasons. Greater proficiency in English generally leads to better educational and occupational opportunities. Many employers emphasize English language skills in a wide range of posts, since these skills can be important for financial reasons and company image (Clowes, 1994), and they may pay for training to improve their staff's English skills. The content of such English for occupational purposes (EOP) training is often dictated by the product-oriented needs of the learners which are derived from how the learners will use the language within the target situations of their jobs (Dudley-Evans and St. John, 1998). Despite the stress on improved language use at work as the goal of such training, only rarely is serious attention paid to the learners' later work-related language use.

Martin and Lomperis (2002), basing their work on Kirkpatrick (1996, 1998), argue that EOP training should be evaluated on four dimensions:

1. The learners' reactions to the training, such as whether they enjoyed the course.
2. Their learning of the course content.
3. Their subsequent behaviour at work, especially in terms of whether their job performance has changed.
4. Any beneficial results for the organisation requiring the training.

The first two of these dimensions are the traditional foci of both course evaluation and most of ELT, and these two dimensions concern the process and product of language learning. The third and fourth dimensions, which concern using, more than learning, language, are often overlooked, and yet, from the organisation's perspective, it is these two dimensions that are most important. While it would be nice to be able to ensure that both learning and use improve concurrently, companies, and indeed many non-native speakers, may be far more concerned with language use than with learning. After all, companies' and individuals' communications in English are more likely to be judged on how English is used in the communications than on whether the individuals making the communications have learnt anything.

If such a great concern for language use does exist, we might expect non-native speakers to use English in non-learning situations to use computers to improve their English use to a far greater extent than they would use CALL. In this paper, I intend to

conduct a survey of computer use by non-native speakers in Thailand to see if this expectation concerning the importance of CALU is justified.

Survey methodology

To survey how non-native speakers employ CALU is problematic. The target group is non-native speakers who use computers regularly, who need to communicate in English at least occasionally, and who are not studying English formally. Accessing a representative sample of this target group is difficult. It is possible to focus on particular sub-groups, such as students who are not studying English or workers at a specific company, but ideally, a broader perspective is needed. In this study, therefore, a questionnaire-based Internet survey was used.

A questionnaire was used in preference to other survey instruments (e.g. interviews) for two main reasons. First, questionnaires are cheap, and second, where in-depth data is not required, they allow wide sampling to be conducted relatively easily (Weir and Roberts, 1994).

To gain a broad sample, the questionnaire was distributed as an Internet survey. In other words, links to the questionnaire were placed on popular websites, and anyone who wished to could follow these links and complete the questionnaire. The survey, therefore, involved a self-administered questionnaire (Brown, 2001), and, in deciding to distribute such a questionnaire over the Internet, there are four potential sources of errors that need to be accounted for (Dillman and Bowker, 2001).

The first potential type of error to be aware of is measurement errors, which arise from inaccurate responses due to a poor questionnaire or question design. While such errors may be an issue in any kind of survey, they may be particularly important in Internet surveys where respondents may take a casual approach to answer the questionnaire.

For Internet surveys, potential measurement errors can be controlled for in two main ways. First, as with all questionnaires, the questions should be designed carefully and set at an appropriate language level (Brown, 2001; Wallace, 1998). Given that the target group in this survey consists of non-native speakers of English, it was decided to make questions simple by using the respondents' first language (L1). To avoid the need for multiple translations, one L1 group (Thais) was chosen for convenience. The second way to control for measurement errors in an Internet survey concerns website design (Dillman and Bowker, 2001), which needs to use a predictable, conventional format that is easy to navigate and avoid drop-down boxes in which respondents may not notice.

The second potential source of errors is sampling errors. These can occur when the respondents form a particular sub-group of the target population. In such cases, the actual population of the survey is this sub-group rather than the originally planned population. The target population in the present study is Thai speakers who use computers regularly, who communicate in English occasionally and who are not engaged in the formal study of English. The respondents, however, are restricted to those who visit the three most popular Thai-language websites and who self-select themselves to answer a questionnaire. For all web-based surveys, there are no methods available for selecting random samples

of a large population (Gunn, n.d.), and therefore we need to be clear about what population the respondents are a sample of.

Related to sampling errors are coverage errors, the third potential source of errors. Coverage errors occur when some units of the population do not have a chance of being included in the survey. Traditionally in web-based surveys, the main cause of coverage errors has been a lack of Internet access (Dillman and Bowker, 2001), but as access has expanded, this has become less of a problem, particularly for populations of computer users as in this study. Nevertheless, two issues could potentially lead to coverage errors: representativeness and low response rates.

In examining sampling errors, we have already seen that the actual population of the survey is likely to be a sub-group of the original target population. Even within this sub-group, there may be problems of representativeness. Despite the potential for collecting biased samples, there is some evidence that Internet surveys are as reliable as other types of surveys (e.g. Comley, 1997). In addition, representativeness can be increased by ensuring that all units of the population have at least the option of completing the survey if they want to by, for instance, using programs that are accessible from all computer platforms.

There is also the issue of low response rates to be addressed. This issue can lead to both coverage errors and non-response errors which concern the potential changes to the results had non-respondents responded. Previous research into web-based surveys (e.g. Fricker and Schönlaue, 2002; Gunn, n.d.) has shown at best modest response rates, although this may apply to most survey methods (Balter et al., 2005). The response rates can be improved by promoting the survey, especially through the use of incentives (Ballantyne, 2000; Sills and Song, 2002), and therefore in this survey, a small financial prize was offered as part of the survey promotion.

In this study, therefore, a survey was conducted using a web-based questionnaire that was completed by volunteers. To reduce the chances of errors in the data collected, the questionnaire was brief with a clear basic design and consisted of short simple questions in the respondents' L1. In addition, a small financial incentive was used to increase the response rate. Despite these efforts, the respondents represent a restricted population of Thai computer users who visit popular websites and answer surveys. Drawing implications from the results beyond this immediate population is problematic.

Focus of the survey

The survey aimed to collect two types of data: first, whether the respondent was currently studying or working; and second, how often the respondent used seven categories of computer applications in English. The survey, therefore, contained eight questions. Each question was presented as a separate webpage with respondents clicking radio buttons to indicate their choices.

The first page explained the purpose of the survey and asked respondents to give a contact e-mail address and to choose whether they were currently studying or working. The following seven pages each presented a category of computer applications and asked respondents to indicate whether they used these applications nearly every day, about once a week, about once a month, very rarely or never. The seven categories of computer applications were:

1. Use commercial multimedia software (e.g. CD-ROMs) specifically designed to improve your English proficiency (e.g. Discoveries, Tensebuster)
2. Surf websites in English on the Internet (e.g. newspaper websites, entertainment websites)
3. Use websites specifically designed to improve your English proficiency
4. Use English in communicating with other people through computer e.g. e-mail, bulletin boards, chat (i.e. computer-mediated communication or CMC)
5. Use an online or computer-based dictionary to help your English
6. Type in English using a word processing program (e.g. Microsoft Word)
7. Check your written English using a spelling checker or grammar checker (e.g. in Microsoft Word)

Of these seven applications, multimedia software and dedicated language learning websites are more likely to be used for learning, whereas general websites, CMC, dictionaries, word processing, and language improvement tools can be used for both language learning and language use but may be more associated with CALU.

The responses to the survey were automatically collected and stored for analysis.

Survey responses

There were 95 respondents to the survey, although not every respondent answered every question. Of these 95 respondents, 41 stated that they were currently working, and 54 were currently studying.

To analyse the frequency of use of the seven categories of computer applications in English, the choices of the frequency of use were converted into ratings where nearly every day = 4; about once a week = 3; about once a month = 2; very rarely = 1; and never = 0. Then, mean ratings were calculated for the seven categories for all respondents and the working and studying sub-groups. The results are shown in Table 1.

Table 1:
Results of the survey

		1 Multimedia software	2 Internet	3 Language websites	4 CMC	5 Dictionary	6 Word processing	7 Spelling checker etc.
Work	N	41	42	39	39	38	40	39
	Mean	0.902	2.619	1.487	2.410	2.763	2.950	2.385
	SD	1.020	1.413	1.355	1.650	1.478	1.339	1.515
Study	N	54	47	45	48	45	44	50
	Mean	0.889	2.872	1.578	2.583	2.822	2.614	1.860
	SD	1.040	1.361	1.305	1.397	1.336	1.262	1.443
All	N	95	89	84	87	83	84	89

Mean	0.895	2.753	1.536	2.506	2.795	2.774	2.090
SD	1.021	1.376	1.313	1.500	1.386	1.294	1.481

From Table 1, it appears that there are very few differences between respondents who are currently working and those who are currently studying. Indeed, comparing the two groups, we find that $t = 0.106$ (not significant) suggesting that the respondents use the various applications at very similar levels of frequency irrespective of their current work/study status.

There are, however, clear differences in the average frequencies of using different computer applications. Those applications most closely associated with CALL (multimedia software and websites designed for learning English) are used far less frequently than the applications more associated with CALU (dictionaries, word processing, general websites, computer-mediated communication, and language improvement tools). Overall, the CALL-oriented applications receive an average rating of 1.196, whereas the average rating for CALU-oriented applications is 2.579.

Before we conclude that CALL applications are used so infrequently that they are of little importance, there are some issues we need to consider. First, while the 95 respondents in this survey generally appear to use CALU applications more frequently than CALL applications, the generalisability of this finding to other computer users is unclear. Since the survey was self-selected, there is no guarantee that the respondents are representative of the whole population of Thai computer users who communicate in English at least occasionally.

Second, the target population of the survey was computer users not engaged in the formal study of English. Thus we should perhaps expect CALU applications to be used more frequently than CALL applications. If, on the other hand, the survey had targetted people attempting to learn English through computers, the results might have been different. Nevertheless, the majority of actual respondents to the survey were students (many of whom are likely to be studying English given the language's prominence in Thai education), and there were no real differences in frequency of use of applications between respondents currently studying and those currently working. Again, the generalisability of the findings is an issue, but it seems likely that CALU-oriented applications will generally be used more frequently than CALL-oriented applications for most respondents.

Third, the frequency of use of applications may not reflect their importance. An application that is used relatively infrequently may have a large impact on the user on those infrequent instances when it is used. Concluding that the infrequent use of CALL applications means that they are unimportant may, therefore, be invalid.

Fourth, as we saw earlier, the distinction between CALL and CALU applications is an unreal dichotomy. Although it is very unlikely that a computer user will apply CALL multimedia software or language learning websites for CALU, the opposite is not necessarily true. All of the categories of computer applications that have been identified as CALU-oriented may be used for learning. For instance, general websites are often a key input in project learning (e.g. Kayser, 2002; Luzon Marco, 2002), and computer-mediated communication is often used as a learning tool (e.g. Fedderholdt, 2001; Nutta and Spector-Cohen, 2002). The frequency ratings in the survey do not indicate whether

the applications are being used primarily for CALL or CALU purposes, or for both simultaneously.

Despite these caveats, the results of the survey do suggest that computer applications that primarily concern CALU (dictionaries, word processing, general websites, CMC, and language improvement tools) are used frequently and thus are likely to be of importance to computer users. Given this probable importance, it is surprising that these CALU-oriented applications have not been the focus of a more concerted research agenda than they have been up till now. It is, therefore, worth exploring CALU-oriented applications in more detail.

Exploiting CALU-oriented applications

As we have seen, the CALU-oriented applications can be used both to improve language use without the user necessarily learning and to learn English explicitly. The latter has been the focus of much research, but the former has received little attention. This former point, although concerned with improved use, has implications for both use and learning.

Some of the CALU-oriented applications are either not explicitly designed for improving language use (e.g. CMC) or are designed primarily for native speakers (e.g. the spelling and grammar checkers in Microsoft Word; see Liu, 1991). If these applications are to be of real help in improving the language use of non-native speakers, new versions of these applications specifically designed for these language users may be needed.

Even though users may be concerned with using English and not necessarily with learning when using CALU-oriented applications, it might be beneficial if the CALU-oriented applications could encourage incidental learning while being used, especially since many CALU users appear to be students and since there is evidence that most words are learnt incidentally (Hunt and Beglar, 2002). Incidental learning can be encouraged through the promotion of three factors: need, search, and evaluation (Laufer and Hulstijn, 2001). For vocabulary learning, these three factors involve a need to know a word to achieve a task, a search to find meaning, and an evaluation of a word through comparison. Encouraging incidental learning while engaged in CALU would require new versions of the applications to be designed.

As an example of how programs designed specifically for CALU could be designed to promote improved language use for non-native speakers and incidental language learning, let us look at grammar checkers. Most grammar checkers are designed primarily to improve the accuracy of the written use of English and are not designed to promote learning (Liou, 1993; Vernon, 2000). However, it should be possible to achieve both goals. Many non-native speaker users have an intrinsic need to achieve accurate writing and like using grammar checkers (Kenner, n.d.), suggesting that one factor in incidental learning is present. It may be possible to also address another factor, evaluation. Where error messages are accompanied by brief but clear explanations (Dodigovic, 2005) and where help in interpreting such information is provided (Chapelle, 2003), grammar checkers may prove useful in focusing learners' attention on errors. In this way, these programs could play a role in the initial stages of learning through noticing (see Schmidt, 1995). In this way, a program designed for CALU could also lead to CALL.

Conclusion

The purpose of this paper has not been to denigrate CALL. Where language learning is the goal, computer applications specifically designed to foster learning are clearly of great potential benefit and importance. Rather, the purposes of this paper are to highlight the importance of another set of computer applications more closely associated with using language than with learning and to identify directions for the development of these CALU-oriented applications.

As teachers, we should be concerned with our students' immediate learning and with their future application of that learning in using English. Well-designed CALU-oriented applications can help with both of these, through implicit learning and support for improving language use. In these ways, CALU may provide a useful tool for teachers, learners, and language users.

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