Supporting Language Learning from a Computer Game

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Abstract

Computer games are a very popular form of entertainment for students, and some games provide extensive exposure to English. Using one of these, Football Championship Manager 4, support material providing help with difficult vocabulary was designed. Users could choose between three types of support: Thai definition, English definition, and examples of use or pictures. From stimulated recall interviews with Thai students who had played the game and used the support, it was found that the Thai language support material was most frequently used, but that the choice between the types of support depended on students' purposes in playing the game.

Introduction

Exposure to authentic language input has come to prominence as a key issue in successful language learning. For example, it has been argued that exposure to authentic use of the target language is a necessary but not sufficient condition for learning (Tomlinson, 1998). Similarly, it has been claimed that authentic language is intrinsically motivating for students (Richards, 2001). If such claims are true, as teachers we should be searching for opportunities to expose students to authentic use of English. Some ways in which this can be done are through extensive reading (Day and Bamford, 1998), through films (Voller and Widdows, 1993), and computers (Mirescu, 1997). In this article, we intend to focus on the last of these, and more specifically on computer games.

The use of computers in language learning is an area that has grown exponentially over the last twenty years or so. One aspect of computer use which has, however, been largely overlooked is computer games (in a recent survey of CALL, Beatty, 2003 included no citations for research into the use of computer games in ELT). While the Internet and computer-mediated communication have received a lot of attention in English language teaching from the perspectives of both pedagogy and research, computer games have been the focus of surprisingly little attention, especially given their popularity as a form of entertainment. This lack of attention is doubly surprising when it is considered that for many people whose L1 is not English, their main exposure to English may be through computer games.

Among the many different kinds of computer games, the type providing the greatest exposure to English is probably simulations. These games involve users in role-playing and making decisions. From an informal survey of 150 students at King Mongkut's University of Technology Thonburi (KMUTT), one particularly popular simulation game involving extensive exposure to English was identified: Football Championship Manager 4 (CM4). In this game, the user pretends to be the manager of a football team, who needs to buy and sell players, select a team, select tactics, and so on. In doing this, the user is exposed to large quantities of English, some of which may be unknown to most non-English speakers. For users to play the game effectively and, at the same time, to have opportunities to learn English, support for the advanced vocabulary items in the game may help.

There are a variety of ways in which this support or scaffolding can be provided (see Beed et al., 1991; Eggen and Kauchak, 1999). In this study, four types of the scaffold were used: Thai definition, English definition, examples of use, and pictures (see below for details). Having prepared such support, we were interested in how the users used it, and thus in this article, we aim to investigate the types of support that the users choose and their reasons for choosing it.

The support program

From the informal survey of 150 students at KMUTT, it was found that the main problems students had with English when playing computer games involved unknown vocabulary, unknown abbreviations, and unclear instructions due to the difficulty of the vocabulary in the instructions. The vocabulary and abbreviations in CM4 were analysed, and 23 words (e.g. aggression, reflexes, stamina) and 12 abbreviations (e.g. AM: attacking midfielder, INE: ineligible) likely to cause problems to non-English speaking users were identified. For each of these, three types of support were provided: Thai definition, English definition, and either example of use or picture.

The following shows how defensive is presented in the support program. Firstly, a definition using more frequent English words and thus simpler English was given as shown in Figure 1.

Figure 1 English definition of defensive

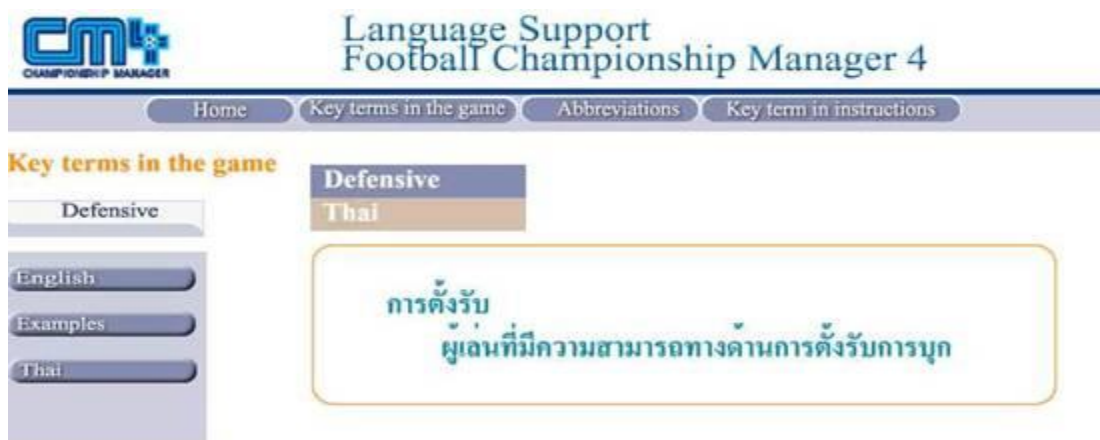Then, the English definition was translated into Thai as shown in Figure 2.

Figure 2 Thai definition of defensive

For concrete words where a picture can illustrate the meaning of the word, a picture was also given. For defensive, however, it is difficult to see how a picture could explain the word. For words for which a picture is inappropriate, then, examples of use of the word in a footballing context were found using the Internet as a corpus, and these for defensive are shown in Figure 3.

Figure 3 Examples of the use of defensive

For those words where pictures may be appropriate, a picture was used rather than examples of use. An example is given in Figure 4.

Figure 4 Picture of aggression

The support materials were designed using IS Adobe Image Styler in the form of webpages, a format which it was believed users would find familiar and thus have few problems using. The support program can be viewed at http://arts.kmutt.ac.th/thai/ webcm4/index.html. To use the support program, users need to open the support program in a browser and then start CM4. They can switch between the two windows using the Alt+Tab command. When the users encounter an unknown word in CM4, they can open the support program, find the word, and then choose between the three types of support provided for each word. They can look at more than one type of support if they want. In this way, it is hoped that the support program can help users play the game more effectively while simultaneously learning English.

Data collection

To investigate the types of support that the users choose and the reasons behind their choices, six students were recorded using the support program and then interviewed. These six subjects were all first-year students from the Faculty of Engineering at KMUTT who were interested in playing CM4.

The subjects were asked to play CM4 for one hour and to use the support program as to help whenever they wanted it. They were recorded using the SnagIt screen video capture program. They were then interviewed concerning their use of the support program using the video capture as input for stimulated recall. The types of support chosen were identified from the video capture records, and the reasons for their choices were elicited from the interviews.

Types of support chosen

To compare the extent to which each of the types of support was chosen, the probability for each type of support to be chosen was calculated by dividing the number of times one type of support was chosen by the number of occasions on which it was available. Thus, if every subject chose to use one type of support at every available opportunity, the probability would be 1; if, on the other hand, a type of support was never chosen despite there being several opportunities to do so, the probability would be 0. The probability values for each type of support are given in Table 1.

Table 1 Probabilities of each type of support is chosen

Type of support	Probability of being chosen
Thai definition	0.90
English definition	0.59
Examples of use	0.70
Picture	0.73

Table 1 shows that Thai definitions were the most popular type of support, with English definitions being less used. However, since all the probabilities are greater than 0.33, we can see that most subjects used more than one type of support for each word they looked up in the support material. In fact, on average for each word subjects chose to use 2.23 types of support.

Reasons for choosing the types of support

The data from the semi-structured interviews showed that the support material was used by the subjects to play the game for several reasons: saving time and convenience, understanding meaning, motivation, independent learning, and learning English. Extracts from the semi-structured interviews are presented in Table 2.

Table 2 Reasons underlying the use of support material

Reasons underlying use of support material	Sample extracts from the interviews
Saving time and convenience (mentioned by 5 subjects)	" … it saves time and is convenient…moreover, the dictionary may take time while playing the game…saves time for looking up the meanings because there are various methods to find meaning such as talking dictionaries… Also, it can help to save time for looking up the meaning of words." (Subject A) "It's more convenient than a dictionary… It's easy to look up the meaning of word and abbreviations because it's fast and

	convenient…the language support is convenient and fast without wasting time using a dictionary." (Subject C)
Understanding meaning (mentioned by 6 subjects)	"I choose language support in the Thai version because I understand the meaning of words easily…The pictures help me to understand and know the meaning of words immediately… I like the picture because I can understand the meaning of words immediately." (Subject C) "… the English language support makes me know the meaning of a word… Opening the support material is helpful because I can understand the meaning of a word…If I understand a lot of words, I can play the game well." (Subject D)
Motivation (mentioned by 4 subjects)	"The language support is fun and I was interested in studying English again." (Subject A) "Language support is more attractive to a player than a dictionary… Moreover, playing the game not only gives me enjoyment but also teaches me English." (Subject C)
Promotion of independent learning (mentioned by 3 subjects)	"I can have learning by myself and an opportunity to learn English with no limit." (Subject D) " I am able to have learning by myself." (Subject F)
Learning English (mentioned by 6 subjects)	"… playing the game is fun. We have knowledge and it helps us develop language skill…the English language support helps me learn English while playing the game." (Subject A) " … the English language support makes me learn more English… I like to learn some words." (Subject E)

Discussion

The reasons underlying the use of the support material given in Table 2 suggest that subjects had two main purposes in using the material. Firstly, using the material for the reasons for saving time and convenience and understanding meaning implies that the

subjects' priority is playing the game quickly and successfully. When the subjects used the material for this purpose, the Thai language support was their primary choice. Although the rationale for designing the support material was not to facilitate effective game-playing, it is hoped that such use of the material leads to incidental learning of vocabulary items.

The second main purpose the subjects had in using the support material was to learn English. This purpose is related to the reasons for motivation, the promotion of independent learning, and learning English. Where learning English was given priority by the subjects, different types of support were used, including the English language support. Using the support material in this way can be considered explicit learning, in contrast to the incidental learning associated with the first main purpose.

It should be noted, however, that for most vocabulary items subjects chose to use more than one type of support and so may have been fulfilling both main purposes at the same time.

The support material investigated in this study was designed simply to explain the meaning of unknown vocabulary items to students using the game. This approach exemplifies a transmission mode of teaching (see Kohonen, 2001), which may not be the most effective approach to facilitating learning. It was therefore decided to supplement the support material with interactive exercises checking users' understanding of the unknown words from CM4 presented in the support material. These exercises were designed using Authorware and can be downloaded from ftp://arts.kmutt.ac.th/setup.exe.

Since the support material and the interactive exercises were designed and made available, more than one thousand people have downloaded these programs to use. Such large-scale use suggests that there is a clear demand for English language support for playing computer games. The worldwide popularity of computer games incorporating English should be seen as an opportunity for encouraging both incidental learnings of English by users wishing to play games effectively and explicit learning by users wishing to simultaneously improve their English. We hope that the support material investigated in this study can provide a model whereby such learning can be encouraged.

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