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Can Instant Message Agent Enhance Foreign Language Learning?

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Abstract: In today's highly globalized society, English is an important language to communicate with others. But English learning can not be sustained. This study developed an instant messaging system of English learning as the agent to help English learning become an ongoing activity. In this study, 98 college students were divided into a total of three groups, experimental A, B and the control group. The students in group A interact with instant messaging agents for real-time online interactive English tests, the students in group B learn English by the one-way instant messaging agents testing materials, and the control group use traditional learning methods. The experiments were conducted four weeks, and the results of the three different groups made no significant difference in learning outcomes. In addition, this study also discusses about the technology acceptance model(TAM) of using the instant messaging agents for the English language learning; the results showed that learners generally considered this system of the instant messaging agent is easy to use and can help learning English.

Keyword: instant messaging, learning English, instant messaging agents.

Introduction

In today's globally internationalized society, English has become an important communicative tool, but students seem to have poor performance in learning English, and the possibility of such result is that most students study English only for tests, students do not use English in their daily life, we do not have an environment of learning English, and the motivation of learning English is low. Masgoret & Gardner in the 2003 study showed that motivation is an important factor affecting learning. Therefore, we consider it necessary to create the external force to maintain the student's motivation of learning English.

Instant messaging software is very popular in recent years, and its value is real-time and low cost. The learner can be real-time to learn English online through the assistance of instant messaging software, even if the learner is offline, because the system can unilaterally send materials to the learner. The study of Herbsleb et al in 2000 told us that in the workplace of using instant messaging software, it can improve learning efficiency, save time and cost less. According to creating inter-city survey in

2010, Microsoft's MSN (Microsoft Network) launching in 1995 is the most popular instant messaging software. IM agents (Instant Message Agent) provide real-time information for the media inquiry service, and this research uses this system to maintain learner's motivation to increase the interaction between agents and learners. In addition, using instant messaging agents, compared with traditional English learning, can also break the restrictions of time and space.
This study uses instant messaging software, MSN, developing an agent system for helping English leaning, to explore the real-time communication, and also uses one-way delivery of learning materials to see whether it can possibly improve students' learning. Also, by using the technology acceptance model (Technology Acceptance Model, TAM) architecture (Davis, 1989) gets better understanding about learners' acceptance and the effectiveness of TAM.

1. Related Research

Instant messaging software provides users with a peer-to-peer written communication environment via the internet (Rebecca and Leysia, 2002). In addition to passing the text, the software also integrates different functions, such as sending emails and transmitting files. In Goldsborough's study in 2000, it was also mentioned that instant messaging software could become an informal communication channel in an organization.
Instant messaging and communications software agents provide real-time information of inquiry service; therefore, what users need to do is to add IM agent's account in the contact list and then they can query timely information though it. This study uses the MSN instant messaging agents systems, used by more people, and the value of real-time and low cost of this system appears.
Hwang, Huang and Wu in their study in 2009 used timely communication of agents in learning. They developed a platform using MSN Agent for the learning communities to promote interaction among students and increase learning. As a result, although such a system did not significantly enhance the learners' learning, it was found that students could accept this system easily because it was easy to use.
Ajzen & Fishbein's study in 1975 put forward the Theory of Reasoned Action (TRA), trying to understand human behavior and predict it. Davis in 1989, adding the modified technology acceptance model (TAM) which was based on the TRA, offered the information systems technology to predict user behavior. The TAM offered two points, including the perceived usefulness and the perceived ease of use: the perceived usefulness is defined as the user in a particular system can save trouble but increase their level of job performance, and the perceived ease of use is defined as the user in a particular system can save efforts but increase effectiveness. Elena & Detmar in 1999 used TAM to discuss about users' acceptance situation of using e-mails. The results showed that users' acceptance of using emails would influence the perceived usefulness, and furthermore, the perceived usefulness would be trading with the perception of the perceived ease of use. The study of Leader et al (2000) found that TAM fit the case of World Wide Web, showing ease of understanding and ease of finding could predict cognitive easy versatility, and the quality of information could predict the perceived usefulness.
According to the above studies, we might find although MSN agent did not obviously benefit the English learning, MSN could possibly increase interactions in Students' English learning because of students' high acceptance of MSN. As a result, MSN could be expected to be a good tool of elevating motivation of students' English leaning.

2. Research Method

2.1 Experimental Design

The purpose of this research is to understand the learning effect If the agent system is used as a platform for English learning. The Experiment adopting quasi- experimental method is divided into three groups, the experimental groups A, B and the control group included. In group A, agents directly interact with students online, sending tests to the users and giving immediate feedback to them. In group B, agents, not interacting with the users directly, send one-way teaching materials, and give answers and feedback regularly. In control group, the users learn English in a traditional way.

2.2 Experimental Subjects

College students with a total of 98 are divided into three groups, 33 in group A, 34 in group B, and 31 in control group.

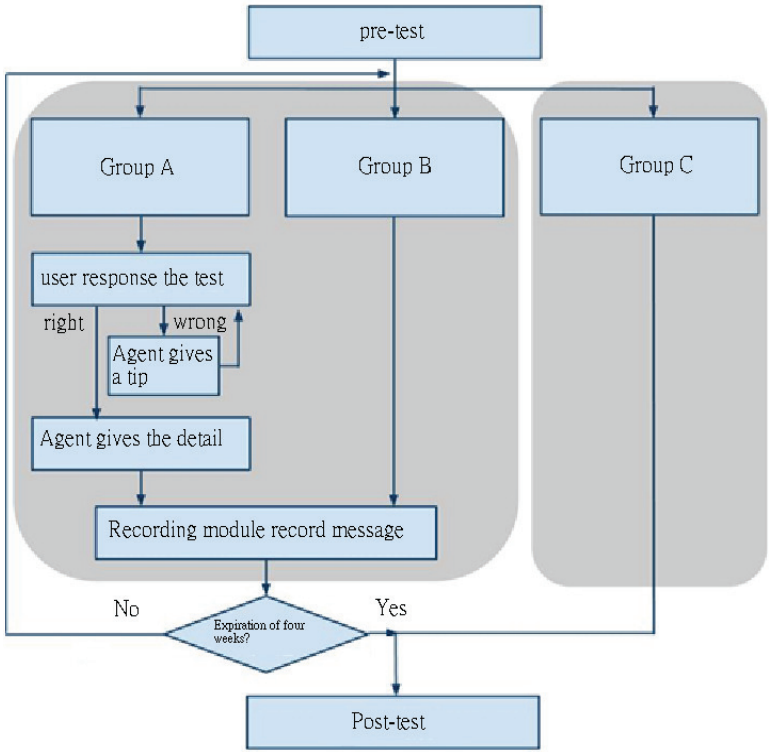

Figure 1, Experimental process

2.3 Research Process

Figure 1 shows the experimental process. We have pre-test before the experiment, then each group take a different learning strategies for English learning. The experiment lasts for four weeks, and we have the post-test later.

2.4 IM Agent English Learning System

This study uses instant messaging agent under C # programming language development system, including three models, messaging, contact management, and conversation recording, shown in Figure 2. The following keeps detailed description of the functions of each module.

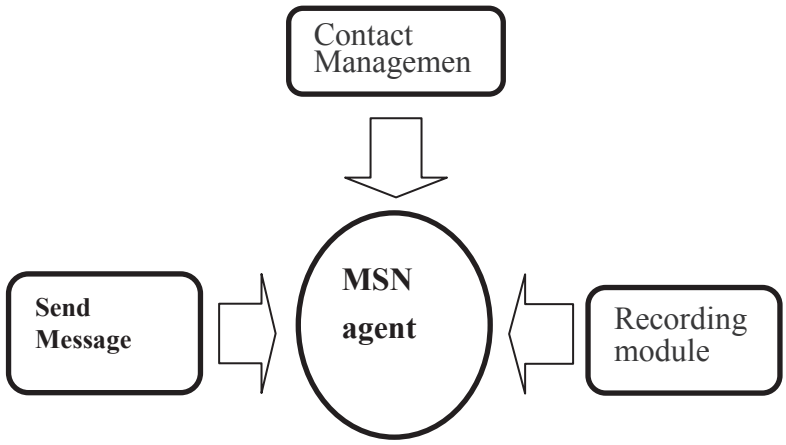

Figure 2, The models of system

The module sends messages in two different ways for the users in group A and B. In group A, the system sends learning materials and tests according to the users' learning status. In group B, the system sends learning materials in a fixed time per day and leaves offline messages to the users if the users are not online. Contact Management module provides a contact list, able to divide users into different groups, make history inquiries of on-line, manage schedule, and add or delete contacts on the list. Dialogue recording module keeps a complete record of the dialogues between the users and the agents for our future reference.

2.5 Technology Acceptance Model

Technology Acceptance Model is divided into four dimensions, including the perceived usefulness, the perceived ease of use, the users' attitude and the users' willingness of using this system. This study adopts Likert scale five-point test and the four dimensions are explored further as following.

First, the Perceived usefulness means the users' feeling of usefulness about English learning after receiving materials and tests sent from agents. This study defines it as "the users think learning materials sent from agents are significantly helpful to their learning." This part of the questionnaire scale is modified from Davis (1989) and Legris et al. (2003).

Secondly, the Perceived ease of use represents the users' feeling of ease to use learning materials sent from this system. In other words, the study defines it as "the learners think learning materials sent from agents are easy to use." This part of the questionnaire is modified from Davis (1989) and Legris et al. (2003).

Thirdly, Users' attitude is about their attitudes toward learning materials sent from agents. This study defines it as "the individual learner preferences of using instant messaging to receive learning materials." This part of the questionnaire is modified from Moon and Kim (2001), and van der Heijden (2003).

Last, users' Willingness of using this system measures the learners' willingness of using this system. This study defines it as "learners are volunteers to use this system for the future further learning. This part of the scale is modified from Moon and Kim (2001), van der Heijden (2003), and Wu and Wang (2005).

3. Results and Discussion

The collected information gets further analysis in this part to verify statistical methods to see whether the results of the experiment proposed hypothesis. Table 1 is about the

average and standard deviation between pre-test and post-test in the experimental group A and B, and control group. Table 2 shows the results of ANCOVA analysis in three groups, A, B and C.
Table 1, compare three results of using different learning strategies in three groups Group N pre-test post-test correction the average standard deviation the average standard deviation

Table 1. average and standard deviation between pre-test and post-test

Category	N	pre-test		post-test		adjust average
		average	SE	average	SE	
Interaction	33	73.4	4.74	84.52	7.85	84.52
One-way	34	71.06	4.31	80.79	7.64	80.79
Traditional	31	73.16	6.86	80.75	7.23	80.75

Table 2. the results of ANCOVA analysis in three groups

source of variation	squared	freedom	average squared	F value	significance
Groups	188.578	2	94.289	1.937	0.15
Error	4235.961	87	48.689		

Table 1 shows the results from three groups of learning. There is no significant difference in scores ($F = 2.89$, $p = 0.093$). Although the post-test scores in the Interactive group ($M = 84.52$) is slightly higher than the one-way ($M = 80.79$) or the traditional ($M = 80.75$), it does not differ significantly. It means that different learning strategies do not promise significantly different learning outcomes. The possible reason of causing this result may be due to the too simple test for students, and therefore we can not tell any difference from the results.
Table 3 shows that the independent variables is divided into two groups, test variables are the perceived usefulness, the perceived ease of use, the users' attitude as well as the users' intention of using this system, and this study uses an independent sample t-test to test the differences. From the point of view of the Perceived usefulness, there are significant differences between the two groups, A and B; that is to say, students in group B think this system is more useful than students in group A. About the perceived ease of use, there is no significant difference in terms of two groups, A and B, but the average is greater than 3.45; it indicates that students generally consider timely communication agent is easy to use. About the learners' Attitude of using this system, there is no significant difference between the two groups, but the average is higher than 3.4, which implies that learners recognize the value of this system. From the point of view of Willingness of using this system, no significant difference is shown between groups A and B.

Table 3. Different learning strategies differences

	Group	N	Average	SD	t value
Perceived	A	25	3.224	.6071	-2.220*
usefulness	B	34	3.541	.4900	
Perceived	A	25	3.4450	.47198	-1.731
ease-of-use	B	34	3.6838	.55837	
attitudes	A	25	3.4750	.53033	0.258
	B	34	3.4375	.56512	

intentions	A	25	3.08000	.639295	-0.445
	B	34	3.15074	.576348	

4. Conclusions and Recommendations

In this study, the aim of using this MSN instant messaging agent is to enhance learners' motivation. From the results of the experiments, it is shown that learners generally keep positive thinking about this system, but there are still many deficiencies in this study, waiting for improvement. In terms of interaction in this system, this system uses a simple command input interface for users, and therefore, the interaction between agents and learners is somewhat weak.
Furthermore, speaking of the services in this agent system, the number of passing words through MSN is inevitably limited owning to the restrictions of the MSN instant messaging software. Also, the users in client-side encounter their difficulties of accessing data. In the future research, we believe that through the appropriate library to develop plug-in, embedded Web pages to show materials, and recording more detailed interactions between agents and users are good ways of obtaining more specific results.

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