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by

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**Informal Learning in the Web 2.0 Environment:
How Chinese Students Who Are Learning English Use Web 2.0 Tools
for Informal Learning**

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Report

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Abstract

Informal Learning in the Web 2.0 Environment: How Chinese Students Who Are Learning English Use Web 2.0 Tools for Informal Learning

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The University of Texas at Austin, 2013

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The purpose of this master's report was to investigate how Chinese students who were learning English used Web 2.0 tools for informal learning and to construct a model of informal learning in the Web 2.0 environment. I conducted a pilot study with 32 Chinese students who were learning English and tried to understand how they used Web 2.0 tools as informal learning tools to improve their English. Furthermore, I discussed the main challenges of informal learning in a Web 2.0 environment from the learners' perspective and from a technical perspective. Then I proposed a model of informal learning in a Web 2.0 environment which may improve learning in an informal learning environment, and provide learners a possible learning method. It is hoped that this model will help students better master learning methods of informal learning in the Web 2.0 environment and lay a good foundation for lifelong learning.

Keywords: informal learning; Web 2.0 environment; learning strategies; learning model

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Chapter 1: Introduction

Informal learning has become a significant topic in current research. The rapid development of Web 2.0 and innovations in modern educational technology offer increased opportunities for informal learning. During the transition from Web 1.0 to Web 2.0, a large number of socially interactive Web 2.0 tools—such as blogs, the family of Web feeds known as RSS, user-based tagging, social networking systems (SNSs), and wikis—have sprung up. Such platforms make the Internet environment more interactive and easier to explore, and such Web 2.0 tools facilitate learners' informal learning.

I became interested in the topic of informal learning in the Web 2.0 environment about a year ago while talking casually with a group of Chinese friends, who were studying English in order to take the TOEFL (Test of English as a Foreign Language). As we discussed their English study habits, I found that they routinely spent several extra hours per day beyond what was required for their TOEFL classes. Furthermore, once they transitioned from studying for classes to simply studying for their own benefit, their methods changed. One of the more interesting revelations was that they often used online communities, blogs, and social networking sites (SNSs) as part of their study tools. In fact, they reported that many of their fellow English students had these kinds of learning habits.

These discussions occurred before I had heard of informal learning in the Web 2.0 environment, and they aroused my interest. When choosing a topic for my thesis, therefore, I wanted to focus on informal learning habits in Web 2.0 and to explore something that was both of great interest to me and potentially useful for my future career.

SIGNIFICANCE OF THE STUDY

With the rapid development of information technology, we have entered into an information- and knowledge-based society. Jokisalo and Riu (2009, p. 2) noted that, according to a survey taken in 2000, 80% of the knowledge we gain comes from informal learning, and only 20% from formal learning. Informal learning occurs in everyday activities when a person freely chooses what knowledge and skills he or she wants to obtain. In informal learning, the individual has control over the learning process and its results. The learning process of informal learning is not only self-directed and self-regulated, it is also shared and collaborative. Learners are able to share information with each other and through their collective efforts to make that information increasingly useful and relevant to each other. Thus, the importance of informal learning cannot be ignored.

The rapid expansion of the Internet provides a good opportunity for informal learning in the Web 2.0 environment. A large number of socially interactive Web-based platforms provide powerful technical support for informal learning. Learners can use blogs to manage knowledge, share, and communicate with others. They can make use of wikis to complete a task collaboratively. Learners can also use the family of Web-feed formats known as RSS to subscribe the network information they need. They can use YouTube to find the videos they want to learn from, and so on. Thus, the Internet provides new possibilities for implementing learning processes, and Web 2.0 allows the use of existing technologies and services in new ways. In general, the development of Web 2.0 provides a broader and freer platform for informal learning on the Internet that is more interactive and more widespread than ever before.

Research on informal learning in Web 2.0, however, still has yet to catch up with the rapid pace of technological development. Questions such as the following still need to be answered: How does informal learning take place in the Web 2.0 environment at present? How can we make informal learning in the Web 2.0 environment even more effective? In this master's report, I discuss a pilot study I conducted with a group of Chinese college students who were studying English to understand how they used Web 2.0 tools as a way of informal learning. Then I propose a model of informal learning Web 2.0 environment which aims to improve learning in informal learning environment. This report consists of six chapters. In Chapter 1, I introduce the significance and purpose of the study and the approach to the study. In Chapter 2, I present the relevant definitions and concepts dealing with informal learning and Web 2.0. I also discuss theories of constructivism, constructivist learning theory, social learning theories, and adult learning theory. In Chapter 3, I discuss the method of my pilot study with 32 Chinese college students to understand how they use Web 2.0 tools as informal learning tools to improve their English. In Chapter 4, I summarize the findings of the pilot study, and I analyze key elements of the model of informal learning in the Web 2.0 environment based on relevant theories and principles. In Chapter 5, I present a suggested informal learning model in Web 2.0. In Chapter 6, I offer my conclusions and discuss the limitations of this master's report.

PURPOSE OF THE STUDY

The purpose of this report was to examine how Chinese student who were learning English used Web 2.0 for informal learning. Through questionnaires and interviews, I sought to identify the factors that influence informal learning in the Web 2.0 environment. Furthermore, I examined the main challenges of informal learning in the

Web 2.0 environment from learners' perspective and in their technical aspects.

The research questions for this pilot study were as follows:

1. How do Chinese students who are studying English make use of informal learning in the Web 2.0 environment at present?
2. How can we make informal learning in the Web 2.0 even more effective for Chinese students who are studying English?

Finally, I constructed a suggested model of informal learning in the Web 2.0 environment in order to provide learners with more explicit informal learning methods and to optimize the informal learning process. I hope the model can be a useful reference for informal learning in the Web 2.0 environment in the future.

Chapter 2: Literature Review

In this chapter, I discuss three conceptual frameworks that are useful in constructing a model of informal learning in the Web 2.0 environment. The first of these frameworks is that of constructivism, and specifically, of constructivist learning theory. Constructivism emphasizes that knowledge is constructed by the learners and that the learning process is learner-centered. The second conceptual framework is that of social learning theory, which emphasizes the collaborative context of learning and that learners can select for themselves what they need to learn in order to solve problems. These two beliefs coincide with features of informal learning and the Web 2.0 environment. The third conceptual framework that is useful for constructing a model of informal learning is adult learning theory, which provides a comprehensive explanation of adult learning characteristics; this is helpful in analyzing the features of informal learners in the Web 2.0 environment. After presenting these conceptual frameworks, I discuss and define the terms *informal learning* and *Web 2.0*.

CONSTRUCTIVISM

Constructivism is based on the principle that knowledge cannot be transmitted but has to be constructed by the individual. Thus, learning is a process of information processing with pre-existing knowledge. Cognitively oriented constructivist theories, such as discovery learning (Bruner, 1967) and microworlds (Papert, 1980), emphasize exploration and discovery. Socially oriented constructivist theories, such as social constructivism (Vygotsky, 1978) and cognitive apprenticeships (Brown, 1989), stress the collaboration of groups of learners as sources of learning. In constructivism, learners, rather than teachers, control the learning process, so learners play a more active and

significant role in the learning process than in more traditional theories of learning. Constructivism emphasizes that learning usually occurs in a context and involves attempts to solve realistic and meaningful problems.

Constructivist learning theory

Constructivist learning theory states that knowledge is not taught by teachers, but is obtained by learners in social and cultural environments, through interaction with others (including teachers and learning partners). Because learning is a constructive process that occurs in the social and cultural context with the help of others—namely, through interpersonal collaboration activities—constructivist learning theory advocates learner-centered learning under the guidance of teachers (Chen, 2006).

SOCIAL LEARNING THEORY

The concept of social learning can be traced back to the theory of social constructivism in the 1960s (Vygotsky, 1978). Social learning theory is a perspective that states that people learn within a social context. Such learning is facilitated through concepts such as modeling and observational learning (Ormrod, 1999). Albert Bandura is known for his 1961–1963 experiments using an inflatable clown known as a Bobo doll in order to test modeling behaviors in children. The results of Bandura’s studies provided support for the influence of modeling on learning (Shuttleworth, 2011).

According to Sincero (2011), the state of mind (mental states) is crucial to learning. Bandura stated that not only external reinforcement or factors can affect learning and behavior. There is also what he called intrinsic reinforcement, which is in a form of internal reward or a better feeling after performing the behavior (e.g. sense of accomplishment, confidence, satisfaction, etc.) (para. 4).

Julian Rotter also developed a version of social learning theory. In *Social*

Learning and Clinical Psychology (1954), Rotter suggested that the effect of behavior has an impact on the motivation of people to engage in that specific behavior. According to the social learning theory of Vygotsky (1978), the basic principle is that students learn most effectively by engaging in carefully selected collaborative problem-solving activities under the close supervision of instructors. Collaboration is the most significant feature of social learning. In a collaborative context, learners also have the opportunity to self-select what they need to learn in order to solve a problem.

Several studies indicate that collaborative learning is more effective than individualistic learning in a variety of ways, such as promoting motivation, increasing achievement, and producing positive social outcomes (Johnson, Johnson, & Stanne, 2000; Slavin, 1995; Snowman, McCown, & Biehler, 2009).

As a form of social learning theory for the new digital age, Siemens (2004; 2005) and Downes (2007) have proposed the theory of connectivism . Connectivism emphasizes how social learning today is often integrated with social media technologies. With the rapid development of social media, learning is not an individual activity. Today, learners gather information through connecting to others' knowledge using RSS feeds, Twitter, Wikipedia, and other similar platforms. One of the principles of connectivism is that the capacity to learn is more important than what is currently known (Siemens, 2004). With the rise of connectivism, the teacher's role changes to one of helping learners to build learning paths and make connections with existing and new knowledge resources (Anderson & Dron, 2011). Social learning theories, especially connectivism, provide insights into the roles of educators in the social networked environment.

ADULT LEARNING THEORY

Knowles (1970) proposed a theory of adult learning, and, describing it as a form

of pedagogy for adults, called it androgogy. Informal learners have many characteristics similar to those of adult learners. According to Knowles, Holton, and Swanson (1998), there are six principles of androgogy:

First, the adult learner needs to know how learning is conducted, what learning occurs, and why learning is important. Second, self-directed learning is the ability to take control of the techniques and the purposes of learning. Third, adults create their own learning goals, and find appropriate learning content and apply the learning methods they prefer, and then evaluate their own performance. The fourth principle is readiness to learn. Adult learners are usually reading to learn everything to meet their needs in different contexts. The fifth principle is the orientation to learning. Adults learners prefer to solve problems in real world settings, in daily life contexts. Finally, there is the motivation to learn. Adults and informal learners always have more and higher motivation to learn—that is, intrinsic motivation—when they can gain access to new knowledge that aids in solving problems in their lives. (p. 39)

According to Ference and Vockell (1994), there are fourteen adult learning characteristics: adult learners are active, experience-based, expert-like, independent, hands-on, life-centered, task-centered, problem-centered, solution-driven, value-driven, skill-seeking, externally motivated, and internally motivated (p. 34). Informal learners can be regarded as a certain kind of adult learners. Informal learners not only have these fourteen characteristics, they also have some other important qualities which I discuss in Chapter 5.

WEB 2.0

The term Web 2.0 was coined in 2004 by O'Reilly Media to describe dynamic

Web and user-generated content. The term Web 2.0 originally described the transition the Internet was making from static, Webmaster-designed pages to a collaborative Internet (O'Reilly, 2005). In the past decade, the Internet has changed the way people work, play, conduct business, and communicate with each other around the world. Over this period, the Internet has progressively evolved to spawn technologies that continue to change the expectations of online users. Only a few years ago, no one could have imagined the engrossing experiences provided by Facebook, Flickr, Twitter, and Second Life. Today, no one can deny the significant impact of Web 2.0 on our daily life. A large number of online activities are dependent on Web 2.0 technologies, such as blogs and forums, social network sites, wikis, bookmarking and sharing tools, user-based tagging, users' own content creation and distribution portals, and so on. More importantly, these activities make significant contributions to informal learning; they provide users a vast amount of informal learning content and practices with the help of Web 2.0 technologies. Web 2.0 users are able to create, share, and exchange almost anything. The Internet is becoming a big playground rather than a simple platform—a playground in which people can find out anything they like and communicate with anyone they want to. In this new online environment, users are able to create and collaborate on webpages. These changes allow users to become content creators, and not merely website readers.

Compared to Web 1.0, in Web 2.0 online participation culture has dramatically expanded. In the first stage of the Internet, or Web 1.0, users were more passive and more like simple consumers of information. The traditional tools of Web 1.0 included e-mail, chat rooms, and discussion boards (McLoughlin & Lee, 2007). In the Web 1.0 environment, users could only read static content created by “experts” who had the technical ability to write and post content (Ebner, 2007). Web 2.0 has changed this situation dramatically, and now a general user can not only consume, but also create and edit content. A user can

also collaborate with others to create something together. Web 2.0 tools make users more active, and let them be authors, contributors, editors, or specialists. The users of Web 2.0 tools contribute significantly to online resources. For example, blogs are largely made up of user-created content, wikis allow multiple users to contribute to a certain area of knowledge, and social networks allow users to develop online communities of shared interests. These are also the reasons that Web 2.0 tools have become increasingly popular among users.

INFORMAL LEARNING

The concept of informal learning has been discussed in a number of fields in recent years. According to the terminology of vocational training policy (Tissot, 2004), informal learning is

learning resulting from daily activities related to work, family or leisure. It is not organized or structured (in terms of objectives, time or learning support). Informal Learning is in most cases unintentional from the learner's perspective. It typically does not lead to certification. (p. 76)

However, informal learning is not an entirely new concept. Tough (1971) first discussed this subject in his exploration of self-planned/self-directed learning. The terms *self-planned* and *self-directed* do not mean that the learner pursues knowledge alone. A self-directed learner is one who will "obtain the knowledge and skill from a variety of individuals, books, and programs without giving up the responsibility for deciding which resources and activities to use each time" (Tough, 1971, p. 78). A self-directed learner can use many resources in the learning process: books, videos, consultation with experts, conferences, and much more (Candy, 1991; Pemberton, Fallahkhair, & Masthoff, 2004; Tough, 1971).

Informal learning is initiated by the needs of the individual learner for the acquisition of new knowledge and skills and the improvement of existing ones. (Pozgaj & Vlahovic, 2010, p. 2). The motivations of informal learning processes are various, but the general goal is to solve a practical problem in a certain field. Some learners want to gather additional information and knowledge for a formal educational course, or to acquire new information; some learners plan to improve their performance of specific professional tasks; some learners acquire new information based on their hobbies and interests. The informal learning needs come from daily life activities, so the learning goals are determined by the learners themselves depending on their current interests. Furthermore, in our everyday life we all receive and memorize certain information and create our own knowledge systems even when we are not aware of it. The European Commission (2000) has observed that “informal learning is a natural accompaniment to everyday life. Unlike formal and non-formal learning, informal learning is not necessarily intentional learning, and so may well not be recognized even by individuals themselves as contributing to their knowledge and skills” (p. 8). Jokisalo and Riu (2009) have set forth a list of the basic characteristics of informal learning:

- (1) informal learning is resulting from daily life activities related to work, family or leisure;
- (2) informal learning is flexible in terms of learning objectives, learning time and learning support;
- (3) typically informal learning does not lead to certification; and
- (4) informal learning may be intentional, but also non-intentional. (p.4)

Marsick and Watkins (1990) noted that “informal learning can be deliberately encouraged by an organization or it can take place despite an environment not highly conducive to learning” (as cited in Pemberton, Fallahkhair, & Masthoff, 2004, p. 28).

Informal learning often takes place in daily life, and it usually happens in an

unplanned or unorganized manner. Comas-Quinn, Mardomingo, and Valentine (2009) have referenced and elaborated on the phrase “stumble and learn” (p. 101) to point out that even when learners are not deliberately looking for knowledge, they may still be regarded as gaining knowledge from a situation. Garrick (1996) explained his definition of informal learning in a similar way: learners are at times adept at “apprehending experience, reasoning, or logically thinking through their direct experience and giving that experience meaning” (p. 24). For the purpose of this research, I am most interested in what Livingstone (1999) referred to as explicit informal learning; such “informal learning is distinguished from everyday perceptions, general socialization, and other tacit learning by peoples’ conscious identification of the activity as significant learning” (p. 51).

Informal learning has brought some changes to educational field, such as peer-learning and the changing roles of instructors and learners. The role of learners is no longer simply that of consuming the learning content; they now have opportunities and responsibilities to create knowledge and co-edit with peers. For example, on a wiki, learners can co-produce knowledge and learn a great deal from their peers during this collaborative process.

Moreover, in today’s world, informal learning is on the cutting edge of education. A large number of new innovations, new ideas, and new technologies and trends are first tested and applied in the informal learning field rather than in institutionalized learning settings. This is the reason that informal learning is increasingly significant in the world.

THE RISE OF LEARNING 2.0

In recent years, more researchers have focused on how learners can receive benefits from informal learning in Web 2.0. This is because other learners are willing to provide information and share it by writing for Wikipedia, posting videos, writing on

Facebook and Twitter, or creating personal blogs. These are the most popular ways that learners create their own content and share it with peers. Learning 2.0 is not just about the technology itself, it is a new way of learning in which learners are able to create content, gain knowledge, and publish that knowledge to be shared and exchanged with everyone. Learning 2.0 has significantly changed the traditional style of education, such as a teacher standing in front of a screen and introducing learning content by PowerPoint. Educators today are increasingly focusing on enabling learners to share knowledge and to explore new learning possibilities. They also know that a good deal of learning occurs outside the classroom walls, and that learning is a lifetime behavior.

In the future, different hybrid types of learning will become the new trend. These will integrate self-paced knowledge acquisition, interaction with subject-matter experts, team-oriented problem-solving exercises, collaborative work, self-study, and many other formal and informal learning activities.

SUMMARY

In this literature review, I have discussed several learning theories in the context of using Web 2.0 technologies for informal learning. However, a review of scholarly and popular literature revealed little research dealing with Chinese students' use of informal learning in their study of English, and no general model of informal learning in the Web 2.0 environment. In the present study, I seek to address these two deficiencies.

Chapter 3: Pilot Study

To examine informal learning using Web 2.0 tools, I conducted a pilot study of Chinese students who were learning English to explore how they used Web 2.0 tools for informal learning. In this pilot study, I sought to answer the following research questions:

1. How do Chinese students who are studying English make use of informal learning in the Web 2.0 environment at present?
2. How can we make informal learning in the Web 2.0 even more effective for Chinese students who are studying English?

PARTICIPANTS AND CONTEXT

The participants of this study were 32 undergraduate English majors in the Beijing Technology and Business University in Beijing, China. There were 8 male and 24 female participants with an age range from 20 to 23 years old, and a mean age of 21.5 years old. Participants had to meet several criteria. First, they had to be actively studying English. This requirement is not a problem for students who were English majors. Second, a participant had to have enough English to be able to communicate effectively in an interview setting. The last criterion was that potential participants had to agree to take part in a 15-minute survey which would be the main source of data collection, and they had to be available for follow-up questions via e-mail. This provision was to ensure that I would be able to gain clarification or further explore themes that arose during the coding and interpretation of the data from the interview.

I selected English majors because learning English is a widespread activity among Chinese college students and most of these students have used informal learning methods. English majors usually spend more time learning English, and they are willing

to apply various online learning tools to that process. In my survey, all the participants were actively learning English as a second language. In China, formal English education is largely grammar-based, with little or no emphasis on communication. Due to the online resources for learning English informally, however, many Chinese college students are seeking to use English in a more communicative manner, and thus will likely have experienced a variety of disparate learning methods and techniques.

Participants were selected on a volunteer basis. I was an English major at Beijing Technology and Business University and I introduced myself to the staff at the University to help me find participants. I made contact with the participants via e-mail and Instant Messaging tools. After I administered the questionnaire, I also interviewed 32 students who had experienced a variety of teaching methods in order to learn more about their informal learning choices. Participants had a variety of purposes for learning English outside the classroom: to gain admittance to an American university, to improve English skills for work or travel, or for their own personal benefit.

DATA COLLECTION

During the initial contact with participants via e-mail on February 20, 2013, I first introduced myself and the purpose of my survey. I attached a questionnaire to the e-mail and requested that the participant finish the questionnaire and send it back to me within two weeks. The questionnaire took about 15 minutes to complete. I sent out 32 questionnaires, and received all of them back on March 7, 2013.

The theme of the survey was the informal learning experiences of Chinese English majors in the Web 2.0 environment. The survey was divided into three parts: (1) the degree to which the student used and understood the Web 2.0 environment and informal learning; (2) the student's informal learning experience in the Web 2.0

environment; and (3) the factors that influenced informal learning in the Web 2.0 environment. The survey questions can be seen on Appendix. Finally, I used Excel 2003 to analyze the data.

Chapter 4: Results

LEVEL OF KNOWLEDGE OF WEB 2.0 AND INFORMAL LEARNING

Figure 1 shows that although Web 2.0 is the new stage of information technology development, the participants did not have much understanding of Web 2.0 technology and tools. More than half of the participants (66.3%) stayed at a very basic understanding level. Only 13.6% of the participants knew the core meaning of the term Web 2.0, and a few participants had never heard the term. As for informal learning, Figure 1 shows that most of the participants knew the meaning of informal learning. About 54.6% of the participants had a general understanding, and 38.1% of them understood informal learning well or very well. These data suggest that most of the participants had a basic understanding of Web 2.0 and informal learning, but their level of knowledge was still low. Interestingly, however, some respondents had participated in informal learning with Web 2.0 technology without realizing it. My subsequent investigation and interviews with students about their informal learning experiences in the Web 2.0 environment fully confirmed this speculation.

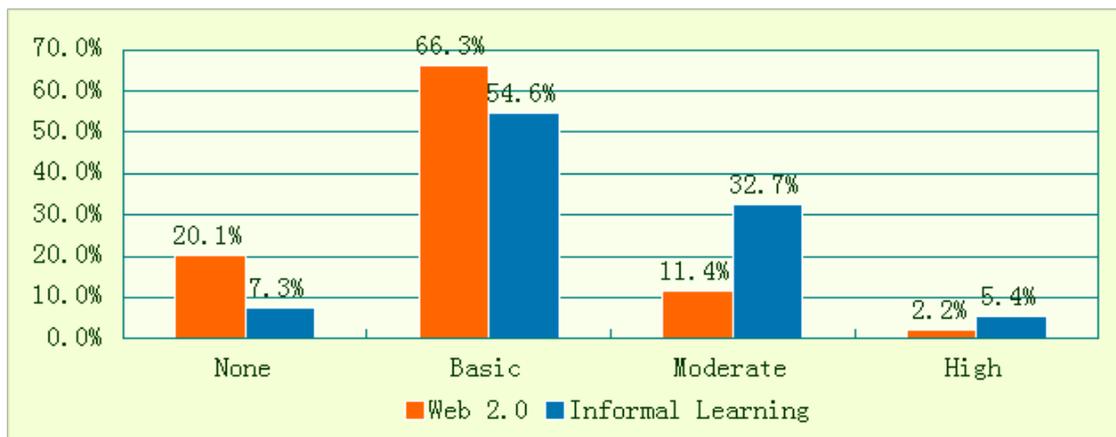


Figure 1. Participants' level of knowledge of Web 2.0 and informal learning.

LEARNING ACTIVITIES WITH WEB 2.0 TOOLS

Because the methods and theories of informal learning in the Web 2.0 environment have not yet been thoroughly systematized and organized, I used questionnaires and interviews to investigate the situation of Chinese learners who were using various Web 2.0 tools in their study of English. As Figure 2 shows, these students were involved in the following forms of learning activities in the Web 2.0 environment: 39.7% used instant messaging such as MSN (The Microsoft Network) and QQ (an instant messaging software service) to communicate with others to discuss learning problems; 33.7% used wikis (such as Baidu Encyclopedia or Wikipedia) to seek or share knowledge; 31.3% used tags to link to the learning content; 28.3% used podcasts (such as Youku, Sina) to watch educational videos; 20.3% used blogs to share relevant information; 17.1% used social bookmarking sites (such as 360 Doc, 360 Daily) to collect learning materials; 13.5% used social networking sites (such as Renren and Qzone) to share learning resources; and 11.9% used RSS feeds (such as Google Reader or Zhou Botong) to read learning material.

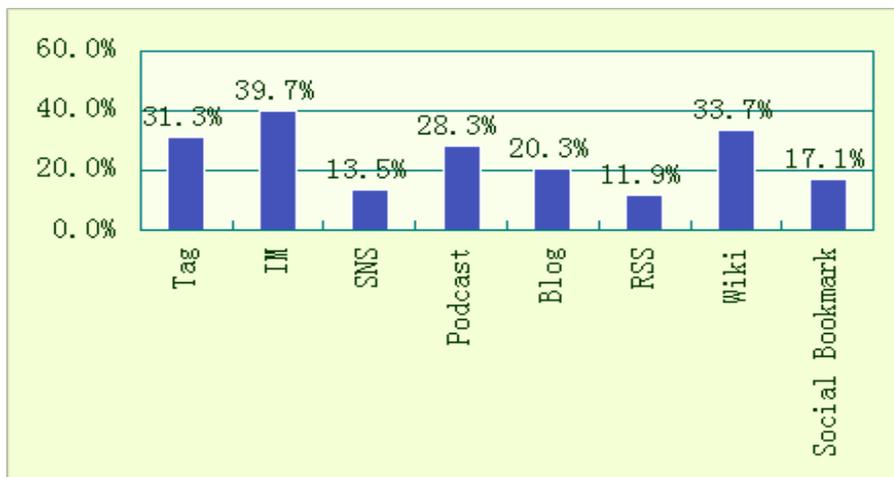


Figure 2. Learning activities with Web 2.0 tools.

The results indicated that various Web 2.0 tools can be applied to informal learning, and that the respondents actually used some of these tools in their learning activities, but the overall utilization rate was low. Through interviews with individual participants, I found that most of the time they used Web 2.0 tools for social networking and entertainment purposes, such as using QQ chat with friends, or using podcasts to watch entertainment videos. Generally, the participants' awareness that these could be tools for informal learning was low.

In addition, Figure 3 shows students participating in online learning communities or groups. Of respondents, 78.7% participated in online learning communities and groups: 58.1% occasionally joined such groups; 15.6% usually joined in one or two communities and groups; and 5% often joined in more than two communities or groups. However, 21.3% of the respondents had never used any kind of community or group related to learning. Participating in online learning communities or groups is one of the significant methods of informal learning in Web 2.0, and it also indicates learners have great motivation to interact with the outside world. The results showed that most students were involved in online learning communities or groups, but for more than half of them, the frequency of participation was low. Most respondents did not take full advantage of Web 2.0 technologies to advance their informal learning.

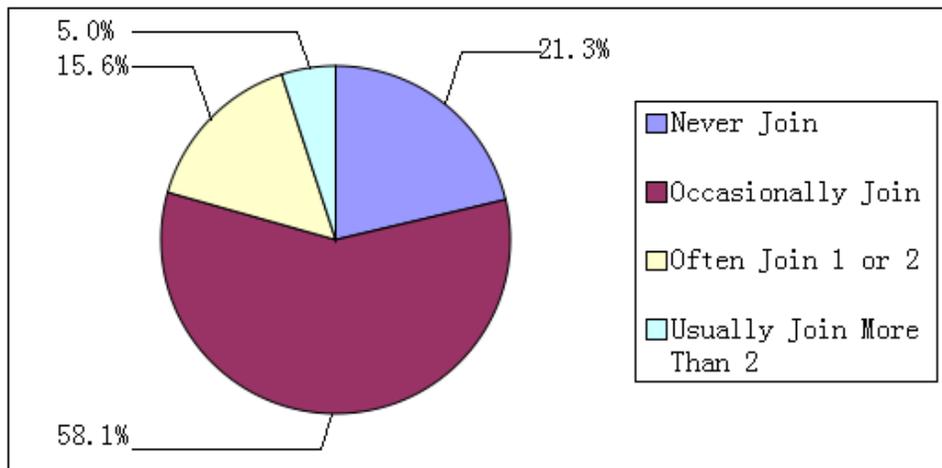


Figure 3. Participation situation of online learning communities or groups.

ATTITUDE TOWARD LEARNING

Table 1 shows participants' attitudes toward informal learning and Web 2.0; more than 77.3% agreed with the statement that "in a Web 2.0 environment, informal learning can happen anywhere, anytime," and more than 83.2% agreed that "a Web 2.0 environment is more conducive to informal learning." In addition, more than 51.9% of respondents were willing to apply Web 2.0 tools to their informal learning process. These statistics show that the respondents had optimism and a positive attitude toward informal learning in a Web 2.0 environment.

Table 1

Participants' attitude toward informal learning and Web 2.0

Questions	Totally Agree	Partly Agree	Not Sure	Disagree
In a Web 2.0 environment, informal learning can happen anywhere, anytime	28.2%	49.1%	21.7%	1%
A Web 2.0 environment is more conducive to informal learning	21.9%	61.3%	14.6%	2.2%
I like to use Web 2.0 tools for informal learning	13.5%	38.4%	43%	5.1%

EVALUATION OF INFORMAL LEARNING RESULTS IN WEB 2.0

Through the use of a questionnaire, I sought to discover the participants' self-evaluations of their learning results in a Web 2.0 environment. As Figure 4 shows, only 1% of respondents thought the results of informal learning in Web 2.0 were very good; 6.8% thought the results were good; 26.3% thought they were average; 47.2% thought they were not very good; and 18.7% thought they were very bad. Although the respondents' attitudes toward informal learning in a Web 2.0 environment were positive and optimistic, the results showed that most respondents had some difficulties with informal learning in a Web 2.0 environment.

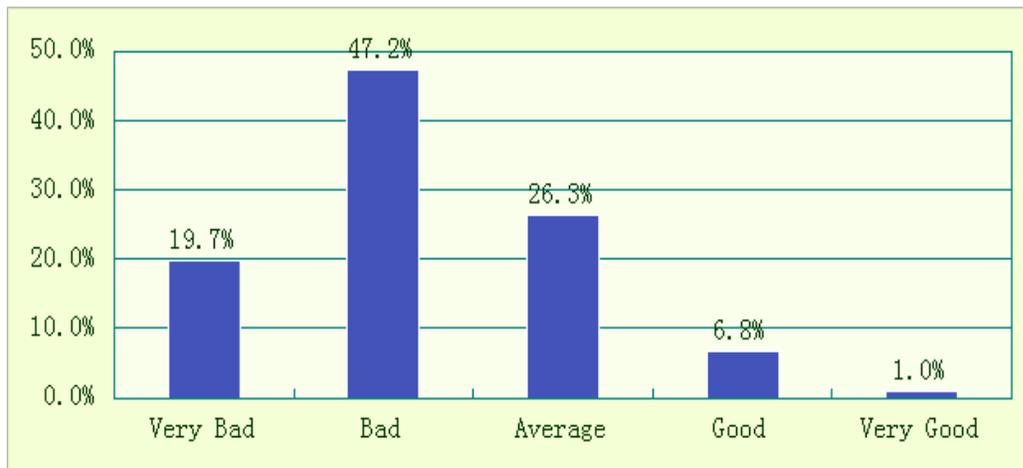


Figure 4. Participants’ evaluation of informal learning results in Web 2.0.

As Figure 5 shows, further investigation combined with individual interviews indicated the following factors that influenced attempts at informal learning in a Web 2.0 environment: (1) the lack of effective learning methods (34.2%)—respondents did not know how to learn; (2) little awareness of informal learning (20.7%)—respondents had not yet fully realized the importance of informal learning; (3) low level of information literacy (9.4%)—respondents lacked the skills to locate, evaluate, and use effectively the needed information; (4) low self-management (12.8%)—learning goals were unclear, there was a lack of self-monitoring and self-adjustment, they could not resist temptation, or it was easy to get off-task while using the Internet; (5) the lack of supportive external conditions (21.6%)—lacked high-speed Internet access, could not find the right informal learning platform, or lacked learning partner collaboration; (6) other factors, such as unsatisfying online learning experiences in the past leading to lack of confidence. These statistics indicate that the factors influencing informal learning in Web 2.0 were various, and were both subjective (informal learning consciousness, information literacy, self-management, learning ability) and also external and objective (learning atmosphere, support conditions, the learning platform, learning partner learning method). Overall,

respondents lacked understanding of the possibilities Web 2.0 offers. Thus, it will be useful to construct a model of how Chinese college students studying English can experience informal learning in a Web 2.0 environment, a model that develops and enhances their awareness of and ability to perform informal learning.

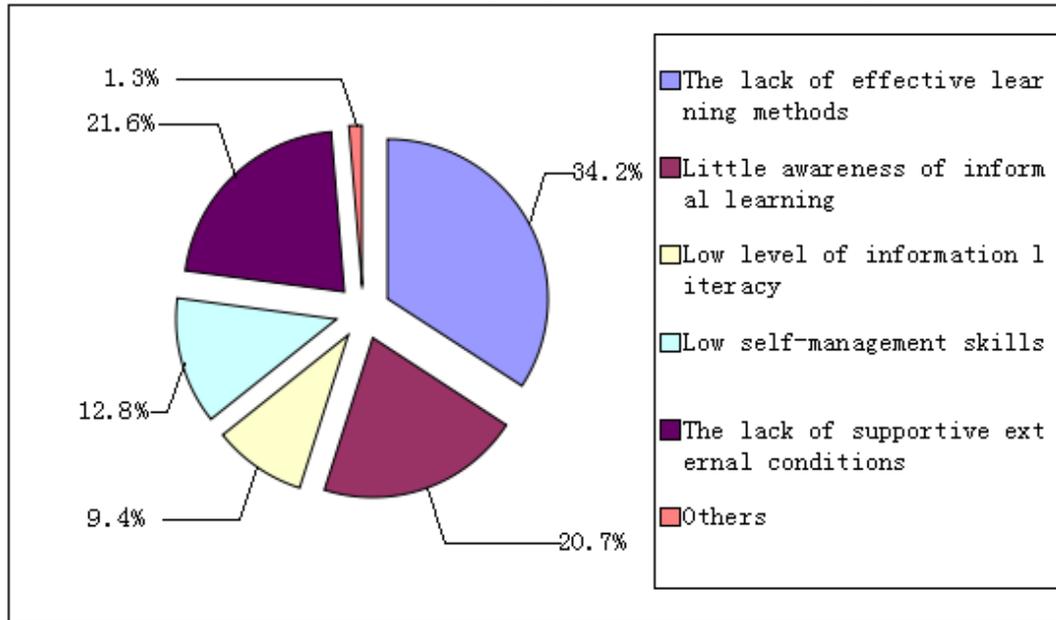


Figure 5. Factors influencing attempts at informal learning in Web 2.0.

Chapter 5: Discussion

THE CURRENT CHALLENGES IN INFORMAL LEARNING IN WEB 2.0

Awareness of informal learning in Web 2.0

First, at the cognitive level, the respondents were used to traditional learning approaches, such as formal learning, so they needed a process to become familiar with informal learning and with Web 2.0. Although respondents knew a little about these topics, it was at a very basic level. Second, because Web 2.0 is becoming more widespread, some respondents consciously or unconsciously applied some of its tools to learning activities, but the overall utilization rate was still rather low. Most of the Web 2.0 tools that respondents used were originally designed for social networking and entertainment purposes and they had not yet become aware of their potential as tools for informal learning.

Information literacy and self-management abilities

The National Forum on Information Literacy (2012) has stated that information literacy is a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and use effectively the information needed . Lacking this ability, the respondents had difficulties in collecting information, processing information, and creating new information to share with others. *Self-management* refers to methods, skills, and strategies by which individuals can effectively direct their own activities toward the achievement of objectives; it includes goal setting, decision-making, focusing, planning, scheduling, task tracking, self-evaluation, self-intervention, and self-development (Omisakin & Ncama, 2011, p. 1734). Learners whose self-management

skills are poor will have learning goals that are not clear, a lack of self-monitoring, and an inability to resist temptations on the Internet; they will often use Web 2.0 tools for recreational activities and will find getting off-task to be a frequent phenomenon. Both Internet information literacy and self-management skills will influence learning results in a Web 2.0 environment. Web 2.0 is a free and open learning environment in which good Internet information literacy and self-management skills are essential for successful informal learning to occur.

Informal learning methods and external support

Because informal learning in the Web 2.0 environment is still a very new mode of learning, learning methods and models in this area have not yet matured and been systematized, as they have in formal learning. The speed with which Web 2.0 tools are evolving is much faster than is the case with traditional learning tools, so learners have to spend time in continuous exploration. In addition, the lack of high-speed Internet access is also a real problem in many towns and rural areas in China, and thus learners do not have equal learning opportunities. Furthermore, there is no suitable informal learning platform, so knowledge acquisition in this area is not systematic. Finally, a shortage of learning partners negatively impacts learning motivation. These external problems are responsible only for part of the participants' learning results, but if they are not addressed, they will negatively impact the learners' enthusiasm for the Web 2.0 environment.

A MODEL OF INFORMAL LEARNING IN THE WEB 2.0 ENVIRONMENT

Elements of the model

Discovering the core elements of an informal learning model in Web 2.0 will include the following steps: knowing the learning needs, determining the learning goals, using Web 2.0 tools to complete the learning goals, and constructing a new knowledge system. As Figure 6 shows, the whole learning process is influenced by learners' inherent characteristics, the learning context, and the learning environment.

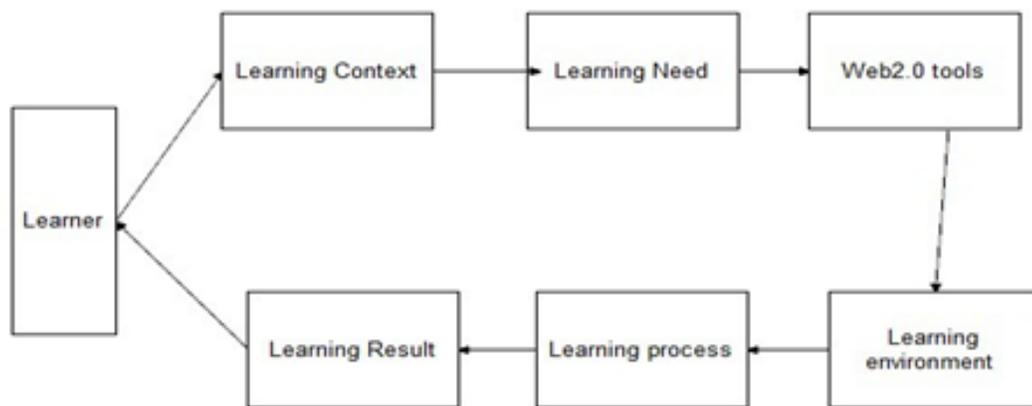


Figure 6. The elements of the model of informal learning in Web 2.0.

Learners' essential qualities

In constructing this model, I was guided by the five essential learning principles from androgical adult learning theory: learners' need to know, learners' self-concept, the experience of the learner, and a learner's readiness to learn, orientation to learning, and motivation to learn (Knowles, 1970; Knowles, Holton, & Swanson, 1998). These five qualities are also required for effective informal learners in Web 2.0 environments.

Need to know. First of all, informal learners need to know and understand why they are learning new information on the Internet. This is the most important difference from formal learning, where a learner only needs to know what the instructor determines he or she needs to know. The need to know can be regarded as the fundamental requirement for informal learning in Web 2.0. Learners need to have the ability to access information for their own purposes. This means that learners are clear that they need acquire information to complete a task and that they can apply different kinds of Web 2.0 tools to gather the knowledge they need to accomplish their learning goals.

Learners' self-concept. Informal learners should be self-directed. They need to take an active role in the whole learning process, including determining learning goals, creating and implementing learning plans, and evaluating learning results. In contrast, formal learners are dependent on the teacher. College students are not naturally self-directed; they range from highly dependent learners to independent and self-directed learners. Thus, when building an informal learning model in Web 2.0 we must consider the learners' condition. Because not all potential informal learners have the same level of self-directedness, tutors could have a role in helping students progress from being dependent learners to being independent and self-directed.

The role of learners' experience. College students participate in a given learning activity with a wide range of experience. This experience helps them to share experience and knowledge with others so that learners can collaborate on content and bring their experience and knowledge together to develop learning communities or groups. A model of informal learning in a Web 2.0 environment needs to encourage learners to make more contributions to their own learning process.

Readiness to learn/orientation to learning. The readiness of informal learners to learn is based on a desire to complete a task or achieve a goal. Thus, informal learners

should be task-oriented and willing to implement the new knowledge they obtain into their professional or practical lives.

Motivation to learn. Informal learners are motivated by both intrinsic and extrinsic influences. They need to connect their motivation to the learning process. Intrinsic factors provide the readiness to learn and the orientation to learning. Extrinsic factors can stem from a learning community or group. In the Web 2.0 environment, everyone is able to be a content creator or play the role of a teacher or expert in certain fields; this offers learners the opportunity to achieve greater self-satisfaction in these processes.

The Informal Learning Context

Context is essential to meaningful learning. All learning must be placed in the learner's context if it is to have meaning. In order to acquire new information, the brain must place it in the context of something that is already known. Thus, the usefulness of the learning context is that it can guide learners to contribute to the knowledge of their field. In contrast to formal learning, in informal learning there is no need to deliberately create any learning context. Informal learning is aimed at solving practical problems in real life, and thus the context of informal learning is in universities, in the workplace, and, in fact, in every place where our daily life occurs. To fulfill their learning needs in specific situations, learners can use various Web 2.0 tools and can then apply the results of such learning to real-life situations.

The Informal Learning Environment

The learning environment is one of the most important factors of the informal learning process; it is a combination of learning resources and learners' interactive relationships. The informal learning environment is a combination of a variety of Web

2.0 tools with different functions. Essentially, Web 2.0 is an open, sharing, and constantly updating environment which provides comprehensive technical support for informal learning. Its characteristics of user interaction, personalization, and sharing have changed the traditional way of learning. The Web 1.0 learning environment is primarily based on reading and listening to learning content, and learners' interaction level is very low. In the Web 2.0 environment, Ajax and RSS, user tagging and other technical applications, blogs, wikis, social bookmarking, and the rise of Twitter, Facebook, microblogs, and other social networking all provide learners with personalized learning opportunities, promote collaboration and communication between learners, and contribute to the sharing of learning resources. Web 2.0, thus, has brought numerous benefits to informal learning.

Model Building

Purpose of the Model

The purpose of constructing a general model of informal learning in the Web 2.0 environment is to provide learners with a learning direction and learning methods, to understand how to implement more effective informal learning in the Web 2.0 environment, to improve the individual's learning ability, and to build a foundation for lifelong learning. At the same time, this model of informal learning also can provide a practical reference for later model creators.

Principles of the Model

Cognition theory, knowledge management theory, constructivist learning, and social learning theories all served as guidance and enlightenment when I sought to construct a model of informal learning in the Web 2.0 environment. Informal learning in the Web 2.0 environment itself is part of the knowledge management process. Learners

use RSS, social bookmarking, blogs, social networking sites, and other Web 2.0 tools to gain information, manage knowledge, communicate, collaborate, share, and optimize the whole process of informal learning.

Key Stages of the Model

A model of informal learning in the Web 2.0 environment is consistent with the basic idea of constructivism. On the basis of this theory, a model of informal learning in Web 2.0 can be divided into two stages, the preliminary analysis phase and the learning process phase (see Figure 7). In the preliminary analysis phase, according to cognition theory, learners know learning needs and determine the learning goals and learning strategies. This stage is largely completed by the learners themselves. Preliminary analysis belongs to the informal learning context. In the learning process phase, the model includes four steps: information acquisition, knowledge management, communication and collaboration, and sharing. There are many useful Web 2.0 tools that can help learners implement informal learning in each of these steps. These tools are not fixed, because learners are able to select Web tools based on their personal learning habits, preferences, needs, and professional backgrounds. In the model, I have recommended two tools for each learning process step.

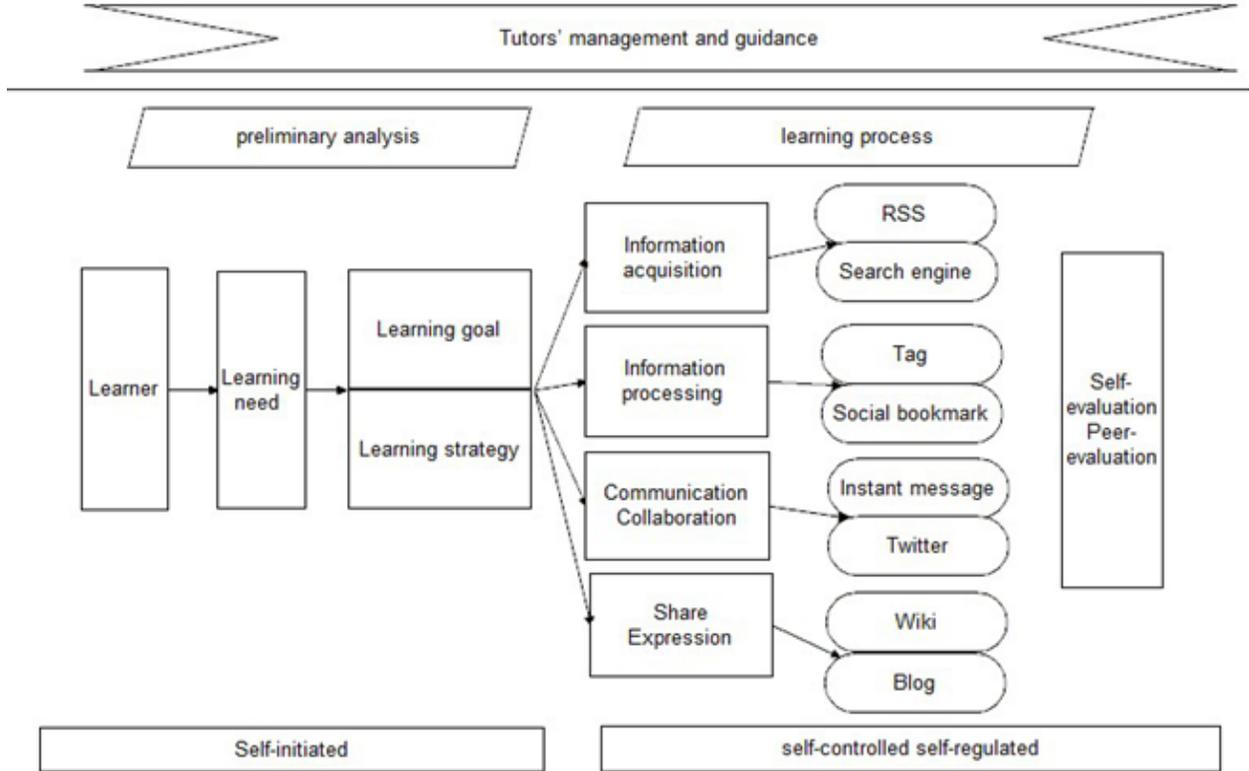


Figure 7. The model of informal learning in the Web 2.0 environment.

Information Acquisition. The model of informal learning in Web 2.0 grew out of a specific problem; constructivist learning theory shows that all learning must be placed in the learner’s context if it is to have meaning. In order to acquire new information, the brain must place it in the context of something that is already known. Only when the original knowledge of learners is connected to the problem can meaningful learning occur. Information acquisition can help learners extend their existing knowledge base through absorbing the new knowledge into their knowledge system. A more abundant knowledge system is more likely to provide clues to the solution of the problem. In addition, information acquisition is also the premise of knowledge management. Learners need to acquire new information continuously through various channels, absorb knowledge from others’ experience, and make use of others’ advantages and strengths.

This can make up for the defects in their own knowledge, and thus they can constantly update their knowledge system and structure. Information acquisition is an iterative process. In the past, there were many ways and methods for learners to get information, such as reading books, surfing the Internet, taking online courses, and so on. Web 2.0 technologies, however, provide learners with new means and methods of acquiring knowledge. RSS, which is a format for customized information acquisition based on learners' needs, realizes one-stop access to target information. Moreover, learners can use search engines to obtain knowledge in any specific area. Web 2.0 tools, therefore, greatly enhance the efficiency of information acquisition and expand the learners' knowledge sources.

Information Processing. Scholars of constructivism believe that after cognitive processing, learners should store and organize all kinds of information, in order to form new cognitive structures. Thus, the formation of good cognitive structures is dependent on information processing. According to Anderson (2012),

A linear knowledge management model includes five steps: first, creating the knowledge or uncovering existing knowledge; second, capturing the knowledge and storing the knowledge within a database; third, organizing the knowledge—providing structure, directories, keywords, and other means of identifying the knowledge for recall; fourth, accessing the knowledge, by querying the database for retrieving the desired stored information; and fifth, using and applying the knowledge to assist in the performance of a task or service. (p. 31)

Information processing involves the second, third, and fourth of Anderson's steps.

When learners get a large amount of information through the network, information processing can help them incorporate the new knowledge into their own knowledge systems. Only in this way can learners really grasp the essence of the new

knowledge and use it to solve practical problems. In the fourth chapter, the results of my survey of and follow-up interviews with Chinese students about their informal learning in the Web 2.0 environment showed that the information they obtained through the Internet was relatively scattered. Intricate information contains many different kinds of knowledge content, and thus to clarify such knowledge requires the help of information processing. Web 2.0 provides learners with advanced and effective tools of information processing. After they acquire information, learners can use tags and social bookmarking to classify, store, and process the information, and can also add annotations and comments. Web 2.0 tools can constantly improve learners' knowledge systems, avoid the memory loss and chaos caused by slower forms of information accumulation, and help learners verify information and to share with others in the future.

Communication and Collaboration. Informal learning in the Web 2.0 environment is inseparable from communication and collaboration. In the learning process, learners need not only to pay attention to improving their own self-learning ability, they also need to communicate with others and collaborate with peers in order to make more contributions. Informal learners should have continuous social interaction with other learners and collaborate with peers to solve problems in real life. In addition, according to the knowledge management theory discussed in the second chapter above, communication and collaboration can provide learners with inspiration, promote the transformation from recessive knowledge to dominant knowledge, and give learners deeper understanding of new knowledge. If the learning process lacks communication and collaboration, learners cannot verify whether their knowledge is comprehensive and reasonable and their vision will be isolated.

Informal learning in the Web 2.0 environment has features of individualized learning, but at the same time, this kind of learning needs the support of communication

and negotiation so as to gather the wisdom of peer learners. Thus, informal learners must be skilled at using communication and collaboration tools. The Web 2.0 environment provides a more convenient means than ever before for students to achieve collaboration across time and space. Learners can talk through instant messaging in real-time, in the form of one-to-one and one-to-many communication, and can join relevant communities and groups. In online communities, learners can publish their own views and opinions and share learning experiences on a particular topic. They can also use Twitter, based on a particular topic, to have discussions with a large number of people at once. Communication and collaboration can promote information acquisition and the solution of problems, and can also enlarge the vision of learners.

Sharing and Expression. Sharing and expression is the process by which learners can share each other's learning resources and also create resources for others to share. The essence of Web 2.0 is a very open network environment in which everyone is both a knowledge consumer and a knowledge creator. While accumulating knowledge, learners also share ideas and opinions with others on the Internet. Sharing and expression are closely linked as a whole. Sharing others' learning resources means absorbing external information into own knowledge systems; sharing knowledge with others is a vital part of the process of transforming recessive knowledge into dominant knowledge. Learners share their own knowledge with an ever-increasing number of people on the Internet. Through the process of sharing and expression, learners are able to gain new insights and ideas, and this helps them tap into their own potential and promotes self-improvement.

Shared expression is key in the process of informal learning in the Web 2.0 environment, and it plays an essential role in the whole learning process. Blogs and wikis are ideal knowledge sharing platforms and tools for this. Learners can use these platforms to acquire knowledge and ideas shared by others, and after thinking and practice, learners

can share their own ideas with others. Shared expression can contribute to updating one's own knowledge.

In the informal learning environment, learners can select appropriate Web 2.0 tools based on their learning needs. The informal learning context is self-initiated, and the informal learning environment is self-controlled and self-regulated. Learners can get timely feedback from others to adjust and optimize their own informal learning process, and the learning results will be subjected to both self-evaluation and peer evaluation.

Tutors' management and guidance. Tutors can be an important support force for the whole informal learning process. Although the informal learning environment is self-initiated, self-controlled, and self-regulated, learners' self-management abilities are all not on the same level; thus, in order to enable learners with low self-management to complete tasks, tutors can provide appropriate scaffolding in some stages of learning. During the learning process, the tutor will remove the scaffolding from learners gradually so as to enable them to learn independently.

Usually, learners will at some point encounter problems with goals or tasks, applications of technology, internalization of knowledge, psychological barriers, or other problems. These problems can cause reduced interest in learning and weakened motivation. In such situations, tutors can take timely measures and give learners guidance and help solve these problems before they become major ones. With Web 2.0 tools, tutors can communicate with students freely without the limits of time and space, which makes it easier to solve these problems as they arise.

Tutors can subscribe to students' blogs with RSS aggregation tools in order to track students' learning progress and motivate them via messages. They can communicate with learners by e-mail and other instant communication tools in order to resolve learners' problems by direct dialogue and give systematic guidance to them.

Furthermore, tutors can distribute discussion topics in learning communities or groups so as to guide students in active participation.

Chapter 6: Conclusions

LIMITATIONS OF THE STUDY

The investigation sample was small and consisted only of English majors from one Chinese university, so it cannot represent all informal learners. Moreover, the model of informal learning presented is not specific enough and needs further exploration. The model still needs to be tested by practice in the future.

SUMMARY

In this study, I used questionnaires and interviews with Chinese college students studying English to investigate the current situation of informal learning in the Web 2.0 environment, the learners' attitudes and experiences, and the factors that influence informal learning in Web 2.0. The results indicated that the main challenges of informal learning in Web 2.0 relate to learners' awareness of and abilities with informal learning methods, and that learners' information literacy and external support also influence learning results.

To construct a general model of informal learning in Web 2.0, I analyzed informal learners' qualities, learning context, and learning environment. The model includes four major elements—information acquisition, information processing, communication and collaboration, and sharing and expression—and also has a place for tutors' management and guidance. It is hoped that this model will provide learners with more explicit informal learning methods and optimize the informal learning process.

Appendix

Question 1: Background Questionnaire

Gender: Male; Female

Age: Under 20; 20-21; 21-22; 22-23; 23-24; Over 25

Degree: Bachelor's; Master's; Doctorate

Question 2: Current level of informal learning in the Web 2.0 environment

My level of knowledge about Web 2.0

None

Basic

Moderate

High

My level of knowledge about informal learning

None

Basic

Moderate

High

3. Which Web 2.0 tools have you ever used? (check as many as appropriate)

Tags

Instant Messaging (such as MSN and QQ)

Social Networking Sites (such as Renren and Qzone)

Podcasts (such as Youku, Sina)

Blogs

RSS Feeds (such as Google Reader or Zhou Botong)

- Wikis (such as Baidu Encyclopedia or Wikipedia)
- Social Bookmarking Sites (such as 360 doc, 360 daily)

Do you join online learning communities or groups?

- Never join
- Occasionally join
- Often join 1 or 2 learning communities or groups
- Usually join more than 2 learning communities or groups

What is your attitude toward informal learning and Web 2.0?

(1). Informal learning can happen at all times in the Web 2.0 environment

- Totally Agree
- Partly Agree
- Not Sure
- Disagree

(2). Web 2.0 is a good way to do informal learning

- Totally Agree
- Partly Agree
- Not Sure
- Disagree

(3). I like to use Web 2.0 tools for informal learning

- Totally Agree
- Partly Agree
- Not Sure
- Disagree

What is your evaluation of your informal learning results in the Web 2.0 environment?

- Very Bad

- Bad
- Average
- Good
- Very Good

What are the factors that influenced your attempts at informal learning in a Web 2.0?

(check as many as appropriate)

- Lack of effective learning methods
- Little awareness of informal learning
- Low level of information literacy
- Low self-management skills
- Lack of supportive external conditions
- Other

Interview: Current problems of informal learning in the Web 2.0 environment

1. What do you think of informal learning in the Web 2.0 environment?
2. Which Web 2.0 tools have you ever used?
3. And what did you do with these Web 2.0 tools?
4. Do you think Web 2.0 tools are beneficial to your studies?
5. What do you think the main factors that influenced your attempts at informal learning in a Web 2.0 are? Please explain them with examples.
6. What do you think of your information literacy and self-management abilities?
7. How do you think information literacy and self-management abilities influence the results of informal learning in the Web 2.0 environment?

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