

A Homepage-based Problem Solving Project

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DEVELOPING THINKING THROUGH PROBLEM SOLVING

Traditional teaching emphasizes passive learning and heavy memorization, but alternative teaching stresses active learning and inspiring feedback; the former helps students develop lower level thinking skills, but the latter helps them develop higher level ones. When students deal with complex social issues or personal difficulties, they have opportunities to work through them at a higher level of thinking. Later on, they hypothesize, analyze, and synthesize the relevant explanations and solutions. Finally, they construct their own strategies to solve the problems. In learning theory, Vygotsky (1986) claims the development of mature thinking is a process of abstraction through analysis and synthesis. Billett (1996) indicates that people who participate in higher-level thinking activities, such as problems solving, can construct knowledge. According to Kappan (1998), problem solving is “the process of moving toward a goal when the path to that goal is uncertain.” People solve problem every time when they achieve something without having known beforehand how to do so. Through heuristics, Kappan further suggests, people find their own ways of reaching their goals.

In instructional design, teachers can help students promote their heuristic and metacognitive awareness through learner involvement in tasks and projects (Merrill, 1992). And the major emphasis of the instruction is directed toward extracting, making explicit and practicing problem-solving heuristics (Simon, 1990). By integrating both learning theory and instructional design, teachers can provide students with an inspiring, active learning environment in which to construct knowledge and cultivate higher level thinking. On the basis of cooperative learning (Johnson & Johnson, 1984), teachers also can encourage students to participate in peer brainstorming and group discussion in order to get resourceful input to stimulate their further thinking. When students deal with problems through the group

interaction, they efficiently develop creative thinking and analytic ability. As well, they develop an interactive interest in their learning process.

HOMEPAGE-ASSISTED PROBLEM SOLVING

In the high-tech society, teachers can help students solve problems via network communication, such as e-mail, bulleting board systems or even homepages. Because of the benefits of multi-media, such as the instantaneousness, resourcefulness, flexibility, variety and interaction of the networked homepage, many users post their questions or problems to homepages and get various feedback or suggestions from other network users. Furthermore, many multimedia homepages are designed in hypermedia structure, and they provide users with higher levels of thinking, learning and creativity. In addition, users express ideas or feelings with multiple-sense expression on homepages, which strengthens the possibility of more effective, personalized communication. The effectively interactive communication on homepages makes the users explore problems widely, thinking over the problems critically, and thus becoming more able to solve the problems objectively. If language learners make use of homepages for problem solving, they may, then, develop not only their problem solving skills but also their communication skills.

The development of WWW homepages in this age of information science has provided users with many exciting learning resources and channels. Some homepage-assisted instruction activities or projects have been designed to inspire users to actively involve themselves in learning situations and to give creative feedback. Future Problem Solving Program (FPSP), for instance, offers students new and exciting learning paths via its forum and network site (<http://www/fpsp.org>) (Torrance, 1998). Discovering rich and varied ways of thinking, students can experience the excitement of creative thinking and the thrill of resolving difficult problems, such as freedom or environmental protection, with unique solutions. And they can learn how to think (not what to think) creatively and enthusiastically. The topics of the FPSP range from real community problems to possible issues for the coming twenty years; they range from the practical to the hypothetical. The teacher who determines, develops and utilizes problem-solving strategies is thus able to bridge the gap between school and community. Students, through their involvement in such strategies, increase their awareness of and interest in the future.

Similar to FPSP, Wyoming Future Problem Solving Program (WYFPSP)

provides both teachers and students with an ideal pool of problem solving activities on a public homepage (<http://www.wyfpssp.org>) (WYFPSP, 1998). Teachers can make use of the homepage to encourage students to browse and discuss some on-line problems. Later on, students can conduct special studies on the problem and generalize their ideal solutions. Furthermore, Nabisco Next Century Schools Project, as reported in Jenlink (1996) also provides students with a lot of on-line problems and encourages them to solve the problems by using partnership arrangements with IBM and other network computers. Generally, through the problem solving project, students can implement a wide range of solutions and exercise analytical thought. They also improve verbal and written communication skills in a natural language community, both on-line and off-line.

Information technologies enable students to become much more actively involved in the learning dialogue. Belief in the power of information technologies to make a significant difference in teaching and learning is growing (Boettcher, 1994). With the development of homepage designing techniques, the functions of browsing, composing, linking and interaction provided through the homepage have helped develop students' interest and ability in reading and writing proficiently. They also have helped cultivate computer-friendly users and researchers in collaborative education and have improved the intellectual achievement, academic exchange and socio-cultural interaction of the participants.

In Lin's study of the publication of a class homepage on "Learning a language in a Foreign Country", the students not only involved themselves in the Internet world where the target language, English, was actually used for communication, but also created a sense of competence in accomplishing a task (1997). The study also provided the students with a precious opportunity to expand content area literacy; the student got to know how foreign students learned Chinese in Taiwan through peer discussion, task assigning, English oral interviewing, transcribing, compiling, writing, peer-editing, rewriting and publication. However, Lin's students didn't have a chance to get feedback from homepage readers because of the lack of interactive interface design.

In a homepage for a Freshman English class in spring, 1997, at Chung Cheng Univeristy, You and Lin (1998) offered an interactive interface design for their students. Their homepage consisted of five major areas that could be reached by links with area titles or their pictures:

1. Reading area, which contained some on-line reading materials, like Aesop's

fables, jokes and some essays.

2. Exercises area, which gave assignments for specific dates
2. Dictionary area, which let students check a WWW Meriam Webster Dictionary.
4. Discussion area, which had students do the homework on-line and let them read other classmates' writing a on the same subject.
5. Comment area, which encouraged student to report problems and make suggestions to the class homepage.

You and Lin's interactive homepage showed that students created a sense of competition and honor when they visited the class homepage to do their homework, and thus the students were encouraged to improve their homework online (<http://apollo.fol.ccu.edu.tw/courses/fresh97.html>). Nevertheless, the on-line homework couldn't guarantee the real diligence of students. For example, some students overused collaboration to complete their homework and showed too much dependency in relying on or appropriating the work of other students. However, the instructor should be able to detect both dishonesty and over-dependence by comparing their writing on-line with their writing in the classroom.

Along with the above two homepage-assisted instructional designs at the college level, Li and Laurence (1998) implemented similar instruction at the senior high school level. They provided the students of Kaohsiung Girl's Senior High School with an internet-based learning environment to develop their own strategies to complete self-access language learning. Under Li and Laurence's guidance, the senior high school students produced their group homepages on some interesting topics, such as the life of salmon, the study of migratory birds in Taiwan, and Banana Kingdom. Via e-mail and real-time chat, the students were engaged in meaningful communication with their network peers, which not only significantly enriched the content of language and cultural learning but also helped the students solve many puzzles and thus modified their group studies with many academic supports. After that, the students published their study results on their school homepage (<http://www.kghs.edu.tw>).

Though not all the homepage-assisted instructional designs highlight problem solving activities, they do show the significant effect of hypermedia and interaction homepages on special projects which are also conducted in a problem solving procedure. Since the hypermedia structure design of the problem homepage appeals to readers' interest and self-promotion, they inspire readers to consider and analyze

the problem seriously and enthusiastically. And the interactive interface design, including a linking design or a guest book design, offers readers access to give feedback or suggestions on-line. Based on the pedagogical assumptions of homepage-assisted instruction, a study of a homepage-based problem solving project was implemented.

IMPLEMENTATION OF THE PROJECT

To investigate the effect of thinking promotion and interactive communication of homepages, a homepage-based problem solving project was implemented. Thirty-two sophomores at Kaohsiung Normal University were involved in this study. The subjects had experiences in designing personal homepages in their intermediate writing class in the first semester, 1997. In the same intermediate writing class in the second semester, 1998, they were encouraged to do advanced personal homepages which emphasized peer interaction through homepages.

The procedure of the project included six steps:

1. Demonstration
2. Brainstorming
3. Composing
4. Evaluation
5. Editing
6. Publication

In the beginning of this project, the teacher demonstrated a problem on a class homepage and encouraged students to brainstorm the possible solutions through class discussion. Then she inspired students to think about specific personal problems and their possible solutions. After demonstration and elicitation, every student wrote his or her problem on a personal homepage. Students were then formed into small groups of four. The students studied the problems created by their three assigned partners one by one, and gave suggestions, relevant responses or solutions on-line. Every student played dual roles in the project; one role was an inquisitor and the other was a respondent. The arrangement of the relationship between inquisitors and respondents can be presented as a partnership model in Table 1. After the partnership interaction, students moved to reflection; every student composed written responses to his partners' solutions and to the overall problem

Table 1

A Partnership Model for Inquisitors and Respondents

| Inquisitor | Respondents |
|-------------------|--------------------------------------|
| Student 1 | Student 2 Student 3 Student 4 |
| Student 2 | Student 3 Student 4 Student 5 |
| Students 3 – 30 | Relevant respondents |
| Student 31 | Student 32 Student 1 Student 2 |
| Student 32 | Student 1 Student 2 Student 3 |

solving project on his personal homepage. Then the student linked all the hypertext files together on his or her personal homepage. The teacher also linked all the student personal homepages with the class homepage (<http://www.nknu.edu.tw/~engstu/mt/ppp.htm>). Later on, both the teacher and the students browsed together the personal homepages and the class homepage. In evaluation, the teacher encouraged the students to do a peer conference to comment on the personal homepages and to make suggestions for improving the project. Then the teacher gave them some feedback and compliments. Finally, the student edited their problems and answers, and then re-uploaded them to their personal homepage sites for publication.

The personal homepage required user-and-user as well as computer-and-user interactions. In terms of user-and-user interaction, the students had to confer with their classmates about solutions before answering their assigned inquisitors' problems on their personal homepages. They were encouraged to think about their problem deeply and to solve their partners' problems enthusiastically. After all the students had posted their problems and solutions on their personal homepages, they browsed the homepages together via a computer broadcast system, and the teacher initialized

class discussion about the ideas and writing skill levels presented on the homepages. In computer-and-user interaction, the students learned to compose their personal homepages with the software Netscape Communicator Composer, linked their homepage subjects with the sites of their expected hypertext files, and then uploaded them with the software WSftp to their class sites. As a result, this project challenged students in two ways: with their problem solving skills as well as their homepage composing skills.

However, the teacher didn't want to over-emphasize homepage composing skills at the cost of problem solving skills for the students, especially in the intermediate writing class. In addition, the time for the whole project was limited -- eight class hours in four weeks. Therefore, the teacher provided the students with an expected three-frame homepage design (Figure 1) as well as expected hypertext file names (such as problem.htm, answer1.htm, answer2.htm, answer3.htm, and responses.htm) in class. This template scaffolded their learning of instructional design and moved them quickly into concentrating on the communicative and metacognitive features of the assignment. To move beyond the template, the students were encouraged to vary their personal homepages with background insertion or image insertion in their spare time.

| | |
|---|------------------|
| Host Frame Problem Answer 1 Answer 2 Answer3 | Pop Frame |
| Response Frame | |

Figure 1 A Three-frame Personal Homepage

The expected personal homepage consists of three frames: a host frame, a pop frame and a response frame. A host frame is designed to show a student's personal problem and three answer titles which are linked with his three assigned inquisitors' hypertext answer files. A pop frame is designed to show one by one the linked hypertexts of the answers to the problem or to show the student's response to the whole project. The response frame is designed to show the list of the student numbers of the writing class, and the numbers were linked with individual student

personal homepages. The consistent format of the three-frame personal homepage makes the presentation of both the personal and the class homepage predictable and readable. And the consistently expected hypertext file names helps both the teacher and the students link personal homepages in an easy and meaningful way.

After collecting students' problems, solutions, written responses to the project on their personal homepages and their oral responses in class, a qualitative analysis was conducted. Not only were the features of the student problems and solutions analyzed, but also their responses to the project with some relevant quotation supports.

FINDING OF THE PROJECT

When students are encouraged to draw on everyday, personal problems as a source for public writing and instructional design, what topics do they develop? Topics chosen by the students fall into these categories:

1. Child rearing
2. Love dilemma
3. Advanced study
4. Personal development
5. Language teaching
6. Daily trifles

The students in this project were concerned about personal and social events. In personal events, they were interested in love dilemmas, advanced study, personal development and daily trifles. They also cared about social events, such as child rearing or language teaching in Taiwan. Because of the high homogeneity of the academic and socio-cultural backgrounds, the students had little communicative gap but shared the same speaking community. Therefore, they communicated with one another via the homepage well.

As to the respondents' solutions or suggestions for their inquisitors, there are many interesting, creative or constructive examples on the student personal homepages (Appendixes A~D). Since the students presented problems drawn from various life experiences and personal interests, their problems might be answered either with ease or with difficulty, depending on the respondent's own background. If a student lacked the relevant background information or experience, he couldn't solve his inquisitors' problems appropriately. To deal with the problems, some

students needed to do some case studies or do a library search before answering the questions. Therefore, this provided the students with good prompts to collect learning resources on-line or off-line for some special studies. One of the students didn't know how to deal with the problem of insomnia for his inquisitor, for instance, so she asked a psychiatrist about the topic, and surveyed some psychiatric references. Finally, she gave her inquisitor some constructive suggestions on-line.

Development of Higher Level Thinking Skills

From the student responses to the homepage-based problem solving project, it was found that this project helped the students develop higher level thinking skills, including comparison, contrast, synthesis, and analysis. Though there are some overlaps among those thinking skills, there are different focuses among them. In comparison, one idea is judged in relation to another thing in order to show the points of similarity (or difference). In contrast, one idea is judged in relation to another thing in order to show the points of difference. As to synthesis, it refers to the combining of separate ideas into a complete whole. By contrast, analysis refers to examination of something by dividing it into its separate parts, according to Longman Dictionary of Contemporary English (1987).

1. Comparison

After reading three or more solutions of their respondents, some inquisitors generalized something in common among the answers. In their evaluation, they expressed their appreciation about the constructive suggestions for their problems.

"I think Nancy's, Jane's and Kendy's suggestions are very useful. They provided effective methods for me to control my appetite. They also implanted me a correct concept as Jane mentioned "Whether you are fat or thin, having a healthy body is more important than having a good figure." (Student 1)

"After reading the answers of my partners, I had a strong sense and sensibility -- the answers provides me with a mild but useful way in solving my problem (about parent-and-child communication). There are also clear procedures and logic inferences in the answers, so I can solve my problem." (Student 2)

2. Contrast

After contrasting their respondents' solutions or suggestions, the inquisitor students chose the alternative ideas and gave some critical responses. Or they said something to defend their ideas.

"As for reading books, I think it is not a proper idea to treat my insomnia. In case that I read a boring book before going to bed, I may mull over and stay up all night. So, I cannot take the suggestion." (Student 3)

"In Nancy's answer letter, she suggested me not ask my nephew to be mild and obedient. I feel that I have to say some words about it. I never scolded or shouted to my nephew, neither did I ask her to be obedient. I just wanted her to know why good manners was important in the daily life, and I set some good examples for her." (Student 4)

3. Synthesis

Some students synthesized good suggestions of their respondents. They also learned more than one solution to a problem, which made their thinking more flexible. To their excitement, some students expressed that this project strengthened their problem solving skills and experiences, which might be applied in future.

"From this project, I learned to think many problems and bring up many suggestions to help other people who really need help. In addition, it strengthens my thoughts and experiences to solve problems in future." (Student 5)

"I learned how to solve a problem in different ways from my partners. I think that it is necessary for a college student to cultivate an ability of problem solving by referring to others' points of view." (Student 6)

4. Analysis

After examining the answers of their respondents, the inquisitor students could tell whether their respondents' suggestions constructive or not in different points. They did the analysis on the basis of their personal needs and interests.

"Although some constructive suggestions guide me directly to solve my problem, some others confused me. In Answer 1, if Isabel could tell me more about the differences between Britain and America, I can make a quick decision of the place for my advanced study." (Student 7)

Generally speaking, the higher level thinking skills of the students were promoted in this project. They helped the students think about problems and their possible solutions from a wide scope. In addition, they elicited the students to analyze or synthesize problems and solutions in an objective attitude and in an optimistic perspective.

Development of communicative Literacy

Though the homepage-based problem solving project was a required course project, it inspired the students to read and write English in a circular way of communication. As a result, a communicative literacy was produced (Chang, 1993). This project establishes a stepping-stone for helping students develop their literacy in a meaningful and interesting way. Because every student knew that his or her problem or answers would be shared by the readers - even more than their present classmates and the course teacher - they tried to express their ideas precisely and enthusiastically on their personal homepages. And they tried to sharpen their writing skills after reading good writings on other personal homepages.

"In this project, every classmate wrote his own problem on-line and he tried his best to solve others' problems no matter how difficult they were. After this activity, every classmate not only developed their writing skills but also getting the experience of solving problems in case that he had the same problem in future." (Student 8)

"I learned some good writing skills by reading my classmates' problems or answers on-line. I had some pressure on my replies, but I think it is a good motive for me to improve my writing skill." (Student 9)

The project took only four weeks, but the peer feedback had a continuing effect. In addition to reading useful comments and suggestions from their classmates on-line, the students shared their problems and solutions on-line then and after. And they were encouraged to post more problems or suggestions on the class homepage in their spare time.

Homepage Literacy

When the students composed their personal homepages for the writing project, they developed homepage literacy. They not only prepared the knowledge and skills for homepage composing, but also cultivated a positive attitude toward the homepage composing task and interactive communication.

1. A task-based network

Based on the task doing, the students learned to compose homepages by composing homepages. Though many of them had troubles in file transfers from Word (word-processing software) documents to hypertext documents, or in linking their respondents' homepage sites in the first two weeks of the project, they overcome their troubles by a sequence of asking for help followed by trial efforts, usually in the third or fourth week of the project. Therefore, most students became experts in homepage composing. Because the teacher encouraged the students to visit others' personal homepages on the network, the students had chances to compare their own homepages with others. The comparison inspired them to improve or polish their personal homepages in a creative way. And most of them had a sense of pride or honor after accomplishing their personal homepages.

"In the process of homepage composing, I got some problems and have a little frustration, but with the help of my teacher and classmates, I solved my problems step by step. Though my homepage is not perfect, I am satisfied with it. Now I have the key to making a homepage. I will practice it by myself afterward and make some progress." (Student 10)

"I learned the hypertext language for the homepage composing in this project. After editing the homepage, I learned to publish it by uploading it to the host

homepage site. I think that I have learned a lot from this project."
(Student 11)

2. Interactive communication

The students had a strong sense of accomplishment when they succeeded in linking their answer titles with their respondents' hypertext answer files. They reported that they liked to link their personal homepages with the class homepage in order to browse other classmates' personal homepages effectively. The homepage interaction inspired them to make good use of the network channel for mutual communication. Both computer-and-user and user-and-user interaction was beneficial:

"Through the teleconference project, I developed a mode of discussing problems on-line. That is a creative idea in writing reports. Although it may be a trial in the beginning for us students, we made it finally." (Student 12)

"Everyone discussed how his problem can be solved on the network. Thus every student can get effective feedback on the network. " (Student 13)

3. Students built a self-esteem

As students composed their homepages, they strengthened their skills and their sense of mastery of this new medium. Not only did many students further explore the magic functions of homepages on their own, but they had strong confidence in their accomplishments, impacting their self-esteem, in homepage composing. Success built upon success, from initial anxiety to a willingness to take risks.

Social Interaction

Seliger (1977) found that learners who initiated and participated in interactions that required using L2 English in and out of the classroom made more rapid progress and fewer L1 transfer errors than learners who interacted little. In this project, the students were required to accomplish their project with the cooperation of their respondents; they were involved in a highly social interaction in the writing class and even in network operation. Therefore, they made much progress in both computer skills and interactive skills in this project.

1. Two heads are better than one

The proverb "Two heads are better than one." was probed in this project. Most of the students helped one another in checking the teacher's requirement, checking their personal progress in designing homepages, and solving network operation problems. Therefore, they learned a lot in their written assignment as well as homepage designing task.

"Although I didn't understand how to do this problem-solving homepage project at first, I learned to finish this project step by step by asking my classmates and my teacher. I like the idea that two heads are better than one." (Student 14)

"When I analyzed and responded to my partners answers, my answers to my other partners were also analyzed and responded. It is an equal feedback. Everyone was just like his partners' teacher." (Student 15)

2. Friendship development

Because most of the students always worked together on the project in the university computer center, they got to know one another better and better. The proverb "A friend in need is a friend indeed." also worked in the student cooperative learning in this project. Consequently, a flower of friendship bloomed.

"Through the project, we can deeply understand our partners whom we have never chatted with before. And our friendship becomes thicker and thicker. As long as we do our network homework, we almost get together in the computer room. It is really a unforgettable experience in my college study. (Student 16)

"The project linked not only our homepages but also our friendship with classmates." (Student 17)

Something to Improve

Though many students developed high thinking skills as well as interactive communication skills in this project, there are still something to improve according to

the student's suggestions and the teacher's observation in the instructional procedure:

1. Improve the student computer literacy,
2. Extend the time for the project, and
3. Promote access to hardware and software for composing homepages.

Though the students in this study had basic experience in composing personal homepages before this project, they needed strengthen their computer literacy, especially in modifying the hypertext language and the logic of file linking. The span for problem/solution writing and reading seemed too limited. Specially, the students didn't have sufficient time to edit their documents on the network, to browse all the personal homepages of their classmates, and to give precise feedback. Therefore, extending the time for the project is anticipated. Furthermore, both network computer hardware and homepage composing software are required and they are supposed to be user-friendly. In this project, many students did not have home computers and modems: this meant that the students couldn't finish their project at home, but in the computer center. Managing time and resources is always a factor in the success of network projects.

Though both network computer hardware and homepage composing software in the NKNU computer center worked well, students need to find more available network computer on campus in order to finish their project effectively and efficiently. Finally, this project didn't ask students to link some useful language development sites, neither did it make full use of a guest book design for class discussion. If teachers can get computer technology assistance from network programmers, they will make their pedagogical homepages more interactive and useful.

CONCLUCIONS

To sum up, the students involved in the homepage-based problem solving project learned how to think critically, analytically, and creatively. Their concentration on the higher level thinking skills prepares them to successfully solve problems in tomorrow's world. And the interactive communication via the partnership arrangement with homepages helps strengthen the students' interactive interest -- the desire to complete a task through team work. Based on the task, many students learned to solve problems by solving problems, and they learned to compose homepages by composing homepages. In other words, they developed their higher level thinking skills and interactive skills in a whole language learning environment.

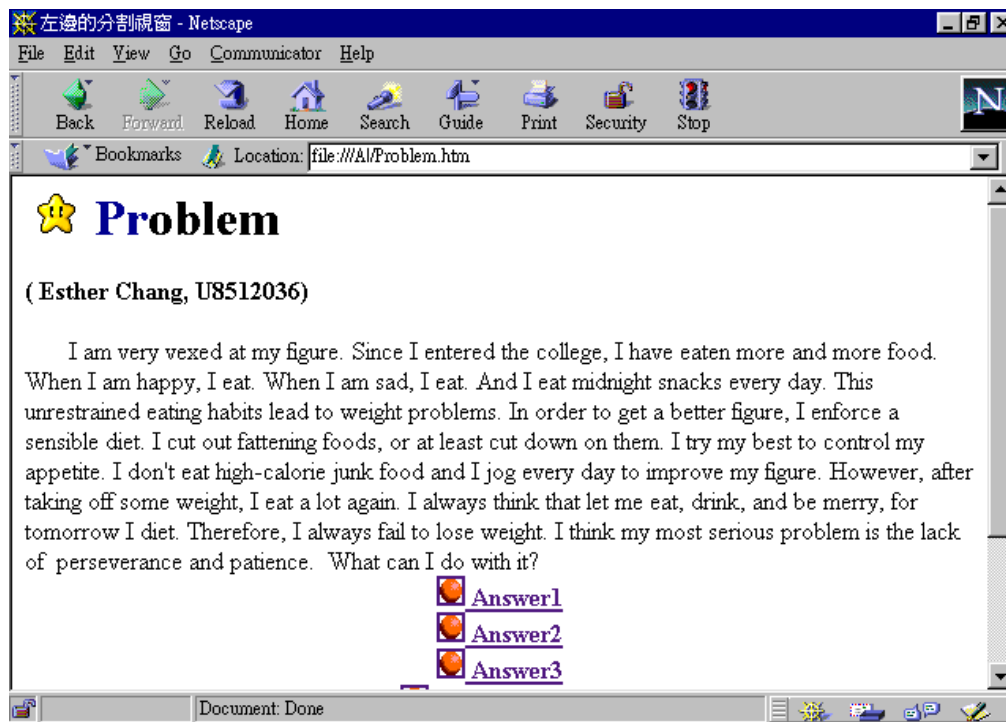
Besides, the students tested the effect of their target language, English, by reading and writing on homepages. Therefore, their written communication skills also developed naturally and pleasantly.

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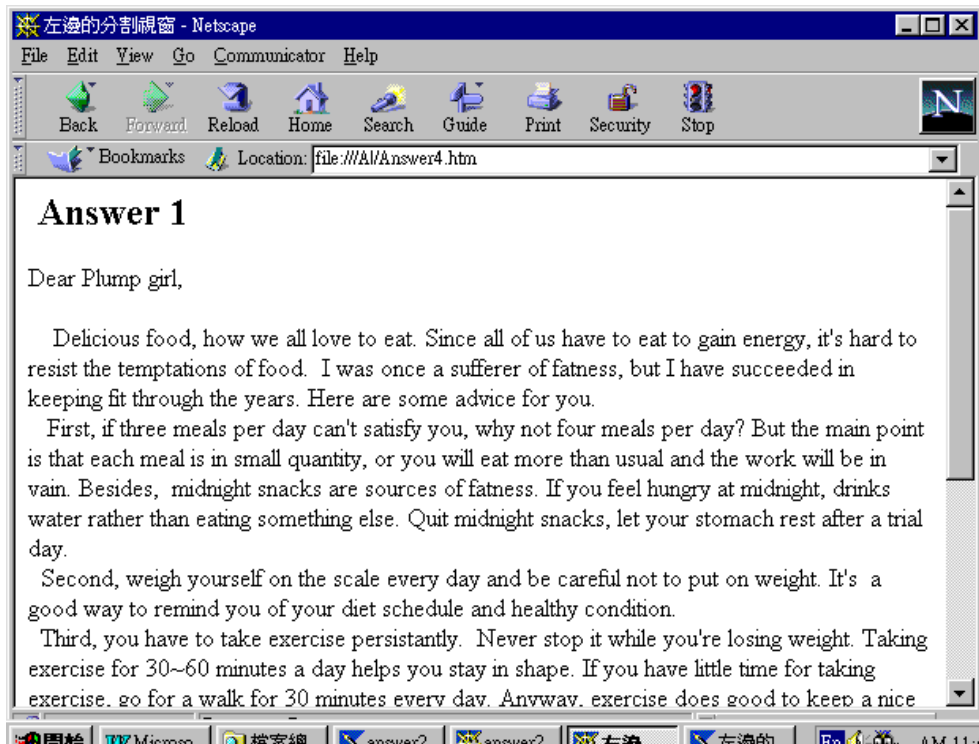
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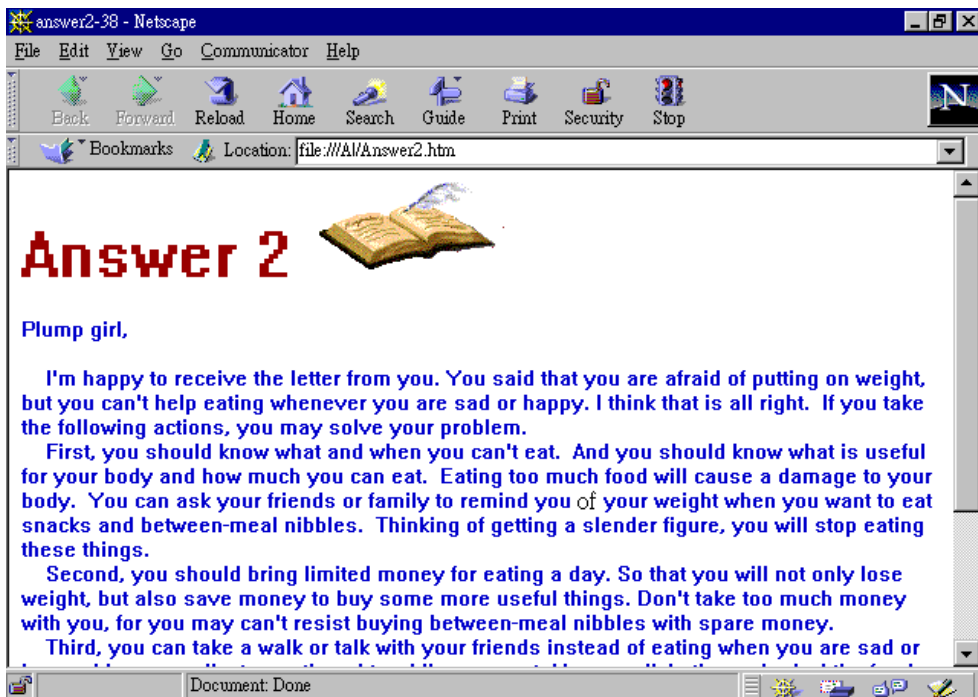
APPENDIX A



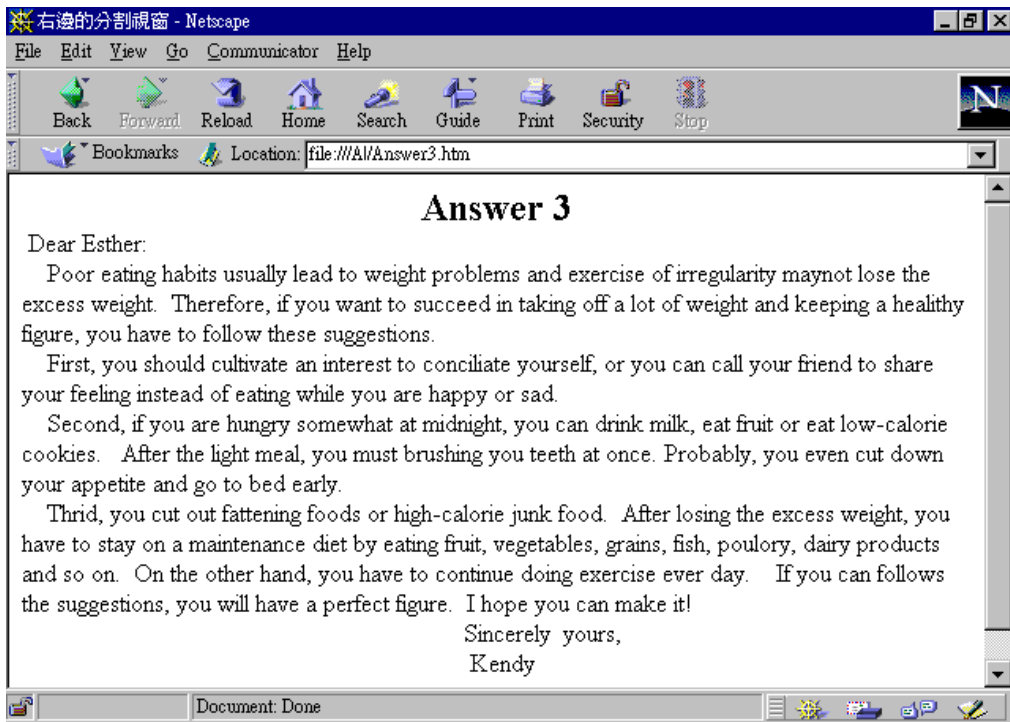
APPENDIX B



APPENDIX C



APPENDIX D



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Abstract

Everyone has experiences in problem solving. And many people agree that the ability to solve problem is a worthy goal of education. Some constructivists (Merill, 1992; Papert, 1993) suggest students deal with problems and solve them by themselves. When students deal with complex social issues or personal difficulties, they have opportunities to work through them at a higher level of thinking. Later on, they hypothesize, analyze, and synthesize the relevant explanations and solutions. Finally, they construct their own strategies to solve the problems. On the basis of cooperative learning, teachers also can encourage students to participate in peer brainstorming and group discussion in order to get resourceful input to stimulate their further thinking. With the development of network computer technology, the functions of interaction and immediate feedback of the homepage have helped develop students' interest and ability in reading and writing. Therefore, integrating a problem solving activity and a homepage interaction function to implement English teaching is worth considering.

In this project, thirty-two sophomores were formed into small groups of four. They studied the problems created by their three assigned partners one by one, and they gave them suggestions, relevant responses or solutions by hypertexts. Because of the benefits of instantaneousness, resourcefulness, flexibility, variety and interaction of the homepage, individual problems became mutual prompts for the class. After class brainstorming and partnership interaction, the students' lower level thinking skills were promoted, and their interactive enthusiasm were inspired. In short, this project was a stepping-stone for helping the students develop their cognitive and language skills through constructive, cooperative and communicative literacy.

Key words:

Problem, solving, thinking, heuristics, reading, writing, homepage

**Effects of An On-line Reading Club on
English Literacy of Secondary School Teachers**

網路讀書會對中學教師英語素養之效益研究

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Lifelong learning is important for modern people, especially for readers. To provide readers with a board for communication, many reading clubs have been set up recently. A leader or several leaders will guide the club members to discuss selected fiction while the club members proceed with their discussion meeting (Lin, 2001). Sometimes, the leader or the club members will invite authors of the selected fiction or fiction reviewers to join their discussion of the selected fiction. Generally the purpose of reading clubs is to extend the club members' reading backgrounds and general knowledge (Rupp, 1999).

Inspired by the notion, the researchers had tried to apply the idea of a reading club in English teacher training. The purpose of the present study is to investigate the effects of the on-line reading club (OLRC) (<http://140.127.41.55/chang-1/OLRC/default.asp>) on English literacy of secondary school teachers. Specifically, the teachers' responses to the instructional design, the interface design, and the selected fiction of the OLRC are investigated. Teachers' development of English literacy is explored. Moreover, teachers' comments and suggestions for the OLRC are discussed. Above all, it is hoped that this study can provide teachers with a model of reading and writing on-line in teacher training and English instruction.

A Reading Club is an Alternative Learning Community

Reading is power that can enrich minds. In order to encourage the students to read extensively, many schools have set up their reading clubs. A reading club is an alternative learning community in which the club members read and learn something together. Essentially, all the club members actively read several fiction in a month, and then they will get together once or twice a month to discuss these fiction and share one another's responses to these fiction.

A reading club has several advantages, such as learning to live together, learning to know, learning to do, and learning to be (Delors, 2001). On the basis of cooperative learning (Johnson & Johnson, 1984), the club members can do group brainstorming or group discussion to get resourceful input. They can develop higher-level thinking, such as comparison, contrast, analysis or synthesis (Chang, 1999). When learners deal with problems through the group interaction, they efficiently develop creative thinking and problem solving ability. As well, they

develop an interactive interest in their learning process. In a reading club, the club members were recommended or inspired to read good fiction. They were also provided with opportunities to express themselves when sharing reading responses with others (Lin, 2001 & Rupp, 1999). Consequently, many club members enjoy active reading. It's an alternative way of cooperative learning in the same speech community.

Nevertheless, a general reading club has some limitations in time and space. For instance, club members may spend several hours once a week or a month getting together to share their comments on the assigned reading. It is somewhat time-consuming in transportation for some club members. In addition, the setting of a reading club has to be concerned. When the club meeting place is unavailable, the club meeting won't be held. Moreover, low responses or feedback from their partners in the club may result in low motivation and impatience for members to participate in activities of the reading club. To deal with the problems, it is necessary to set some alternative reading clubs across the time and space boundaries and to provide members with sound feedback systems.

Improving Interaction in On-line Reading Clubs

With the development of the computer network system, the Internet has been applied in distance learning or in personalized learning. Moreover, the network system can provide immediate feedback for learners even though learners work at an individualized pace. Software can be designed with multimedia effects including sounds, graphics, videos, and animation. And information can be presented in a non-linear sequence enabling learners to select the exercises or notions they wish to review (Singhal, 1997). Sun, et al. (2000) generalized eight merits of learning on the Internet as the follows:

1. It provides users with a learner-centered learning environment.
2. It provides users with an alternative learning mode.
3. It provides users with a gate to getting to know the network technology.
4. Users can control their own learning pace.
5. Users can learn to use the computer technology by using it on-line.
6. Users can learn to solve problem with more than one solution.
7. On-line resources are varied and productive.
8. On-line information can be updated and exchanged quickly.

In the same way, an on-line reading club can offer the club members these merits. Through an on-line reading club, all the members are in the center of the Internet learning environment. Rather than spend time doing face-to-face discussion, club members can read the fiction and join the on-line discussion at their own pace. All

the messages of the on-line reading club can be updated and exchanged quickly. Through the on-line discussion and the guestbook, all the club members work together to discuss and solve problems about the selected fiction. Moras (2000) indicated that using the Internet helped learners control their learning, enable them to learn at their own pace and choose their own learning styles in accordance with their individual needs. Therefore, an on-line reading club can provide readers with an ideal learning community.

On-line Forum and Reading Clubs

An on-line forum is an effective medium for cooperative learning (Harasim, 1990), which includes the discussion board, the guestbook, and the chat room. This system provides users with a shared space essential for group interaction; all the on-line group members can read the same messages about a specific topic, read comments, and make responses in the same on-line speech community. An on-line forum can help both teachers and students exchange ideas, lesson plans, and textfiction reviews (Stepien, 2000). Goeller (2001) designed an on-line course system “Work and Society” for students. From students’ evaluation of the course system, he found that an on-line forum had advantages in enhancing learning, such as improving in-class participation, encouraging users to share information and insight, and helping users develop their computer literacy.

Mulquin (2002) addressed similar ideas to Goeller’s. Through the on-line forum, a teacher can ask students a question to check if anyone knows the answer or can give students relevant feedback on-line immediately. On-line forum can also facilitate the discussion of issues. In Goeller’s (2001) and Mulquin’s (2002) research findings, an on-line forum provided users with a place to share ideas and to get immediate feedback, such as the guestbook design, the discussion board design as well as the chat room design. In conclusion, an on-line forum can be used as a teaching assistant in and out of the classroom. Therefore, the application of the on-line forum in an on-line reading club has been widespread. The on-line forum has been used as a springboard for mutual communication across time and space boundaries.

The general purpose of reading clubs is to help extend the club members’ reading backgrounds and general knowledge (Rupp, 1999). In fact, every reading club has unique purposes. Reading clubs for children are different from that for adults. For example, the purpose of the Kidreaders Reading Club is to elicit children to read (<http://www.kidsreads.com/index.asp>). The interface design of such a kind of reading club is usually illustrated and even animated. Some reading clubs are designed for people to learn their second languages, such as the Edward On-line

Reading Club (<http://userpage.fu-berlin.de/~tanguay/readclub.htm>). For EFL teachers and students, they can make the best use of the relevant websites to discuss issues on second language acquisition and learning.

Moreover, reading clubs can be used to discuss a specific author, a specific theme or a specific series of fiction. For example, the on-line reading club *Guys/Girls Raised in the South* (G. R. I. T. S.) (<http://www.thegrits.com/>) is set for students to discuss classic and contemporary African American literature. And the on-line reading club *Science Fiction Reading Club* (<http://www.geocities.com/Area51/7118/>) is set for students to discuss science fiction. If the student-based reading clubs can be applied to teacher training, teachers may have a good channel to promote their own reading, writing, and even communication on-line. Therefore, it is interesting and necessary to conduct a study on an on-line reading club for teachers.

Implementation of an On-line Reading Club

The purpose of the present study is to investigate the effects of the on-line reading club (OLRC) on the development of English literacy of English teachers in secondary school. Specifically, the teachers' responses to the instructional design, the interface design, and the selected fiction of the OLRC are investigated. Teachers' development of English literacy is also explored. Moreover, the teachers' comments and suggestions for the OLRC are discussed.

The subjects of this study were 68 secondary school English teachers studying in the graduate program of English Department in NKNU (National Kaohsiung Normal University). They read and discussed five selected fiction of adolescent literature in the OLRC in eight weeks. Most of the subjects had basic network literacy before participating in the OLRC project. They knew how to get on-line and how to browse the websites before joining the project. Nevertheless, all but 18 teachers answered the questionnaire on-line. So, 50 teachers' responses to the guestbook, the discussion board, the reflection board, and the questionnaire were collected in this study.

To achieve the purpose of the study, the researchers adopted three instruments for data collection, including 1) five selected fiction, 2) OLRC, and 3) A Questionnaire on Teachers' Responses to the OLRC. In order to attract English teachers in secondary school to join the OLRC, it is important to choose appropriate fiction for the OLRC project. Many celebrated adolescent fiction are fascinating, exciting and even inspiring. Accordingly, the researchers chose five celebrated adolescent fiction for the OLRC project. Because of the time limit of the study, the researchers chose only five fiction as follows:

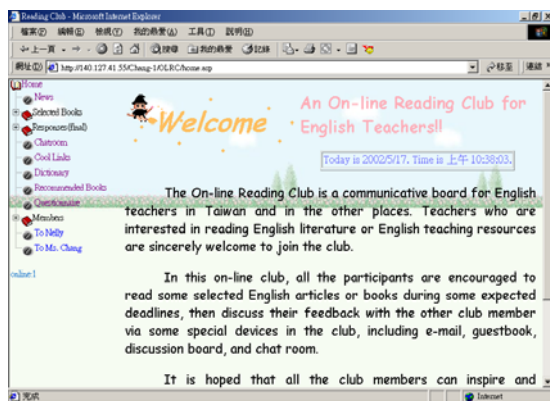
1. *Harry Potter and the Sorcerer's Stone* (Rowling, 1998),
2. *The Secret Garden* (Burnett, 1987)
3. *Z for Zachariah* (O'Brien, 1974),
4. *Dear Mr. Henshaw* (Cleary, 1983), and
5. *Sarah, Plain and Tall* (MacLachlan, 1985).

The OLRC (Sample 1 and Sample 2) was designed and published on-line (<http://140.127.41.55/Chang-1/OLRC/default.asp>), which included an instructional design and an interface design. In terms of the instructional design, every selected fiction was designed with an introduction, references links, a discussion board, and six questions about the content on the guestbook.

Sample 1
A Login Page of the OLRC



Sample 2
A Welcome Page of the OLRC



In the interface design, it included three systems, including the general system, the specific system and personal data. The general system was further developed into three areas, including the working area, the help area, and the evaluation area. Each area provides readers with different on-line functions. The working area includes the chat room design and the recommended book design for on-line communication. The help area includes an on-line dictionary, and a link to the e-mail of an on-line assistant. In terms of the evaluation area, it refers to the reflection board and to an on-line questionnaire system. In the specific system, the labels of five selected fiction and their four further designs are displayed. The four further designs refer to the introduction design, the references links design, the discussion board design, and the guestbook design. Finally, it comes to the personal data system which includes two on-line systems for registration and for modifying personal information.

After reading a selected fiction, the subjects were required to answer two of the six questions on the selected fiction on the guestbook. Six questions were designed for each selected fiction in the OLRC according to the three stages of reading, including pre-reading, while-reading, and after-reading stages. The six questions were related to the content of the selected fiction, which were used as prompts for the club members to refer or infer the text in three different reading procedures. Take the six questions of the fiction *Harry Potter and the Sorcerer's Stone* as examples. They are displayed in Table 1:

Table 1

Distribution of Six Questions in Three Stages of Reading

| | |
|--------------------------------|--|
| Pre-reading Questions | Q1: What do you know about wizards? Q2: What would you want to do if you were a wizard? |
| While-reading Questions | Q3: Why did the Sorting Hat hesitate at the decision of placing Harry in either Slytherin or Gryffindor? Q4: How does the game of Quidditch represent Harry's life at Hogwarts? |
| After-reading Questions | Q5: What do you think Malfoy's home life is like? Q6: What is the theme of this fiction? |

The distribution of the six questions in Table 1 is by reading procedures, including pre-reading, while-reading and after-reading. It was open for the subjects to answer any two of the questions at their own reading pace. If they wanted to do answering before reading the selected fiction, they could choose Q1 or/and Q2 to answers. If they wanted to do answering while reading the selected fiction, they could choose Q3 or/and Q4 to answers.

Every subject was required to write one general response and two peer responses to the selected fiction on the discussion board of every selected fiction. Therefore, every subject received several peer responses from the other club members on the discussion board after reading a selected fiction. While reading a selected fiction, the subjects could look up the new words or phrases by using the on-line dictionary. Besides, the subjects could get more information about the selected fiction from every fiction's references on-line. These references included some websites introducing the author of the fiction, the fiction's lesson plans, some fiction

reviews of the fiction and so on. Moreover, the subjects could recommend some other good fiction on-line by means of the recommended book design. After eight weeks' project, the subjects were asked to answer the *Questionnaire on Teachers' Responses to the OLRC* and wrote down their responses to the OLRC project on the system of reflections. Then the researchers computed and analyzed the data.

The data collected in this study were analyzed in two ways. In the quantitative analysis, frequency was conducted to analyze the subjects' responses to the instructional design and the interface design of the OLRC. The answers in a five-point scale for the questionnaire were given 5 points for "Strongly agree", 4 points for "Agree", 3 points for "Neutral", 2 points for "Disagree", and 1 point for "Strongly disagree." Through five open-ended questions on the Questionnaire on Teachers' Responses to the OLRC (<http://140.127.41.55/chang-1/OLRC/questionnaire/paper2.asp>), the researcher collected the subjects' opinions for data analysis. In addition, the subjects' responses to every selected fiction on the guestbook and the discussion board, and their general responses to the OLRC on the reflection board were analyzed qualitatively.

Result and Discussion

On the basis of quantitative and qualitative data analyses, some study results are conducted and discussed. The subjects' responses to the instructional design and the interface design of the OLRC, their responses to the selected fiction of the OLRC, and their self-evaluation of English literacy in the OLRC are interpreted in this section. Finally, the teachers' comments and suggestions for the OLRC are referred to provide some perspective of the development of OLRC in future.

Teachers' Responses to the Instructional Design of the OLRC

The instructional design of the OLRC includes the guestbook design of every selected fiction, the discussion board design of every selected fiction, the chat room design of every selected fiction, the reference link design of every selected fiction, the recommended fiction design, and the on-line help design. The statistical results of the teacher responses to those designs are shown in Table 2.

In the teachers' responses to Item A in Table 2, most teachers like the content of the reference design (Mean=4.54). In the teachers' responses to Item B, most teachers agreed that the discussion board design helped improve English reading ability (Mean=4.26). In the teachers' responses to Item C, most teachers agreed that the discussion board design helped improve English writing ability (Mean=4.24). In the teachers' responses to Item D, most teachers agreed that the guestbook design enhanced them to express themselves in English (Mean=4.42). As to the teachers' responses to Item E, most teachers agreed that the reference design increased their

interest in learning English (Mean=4.24). Accordingly, three of the instructional designs of the OLRC were popular for the subjects.

Table 2

Means of the Teachers' Responses to the Instructional design of the OLRC

| Items | Total | Guestbook Design | Discussion Board Design | Reference Link Design | Chat Room Design | Recommend- ed fiction design |
|---|-------|---------------------|-------------------------------|--------------------------|---------------------|------------------------------------|
| A. I like the content of the design. | 50 | 4.24 | 4.42 | 4.54 | 3.75 | 4.34 |
| B. The design helps improve my English reading ability. | 50 | 4.12 | 4.26 | 4.22 | 3.66 | 4.02 |
| C. The design helps improve my English writing ability. | 50 | 4.24 | 4.20 | 2.88 | 3.74 | 3.72 |
| D. The design helps me express myself in English. | 50 | 4.42 | 4.54 | 3.96 | 3.76 | 3.84 |
| E. The design helps increase my interest in learning English. | 50 | 4.06 | 4.20 | 4.24 | 3.62 | 3.96 |

SA: Strongly Agree

A: Agree

N: Neutral

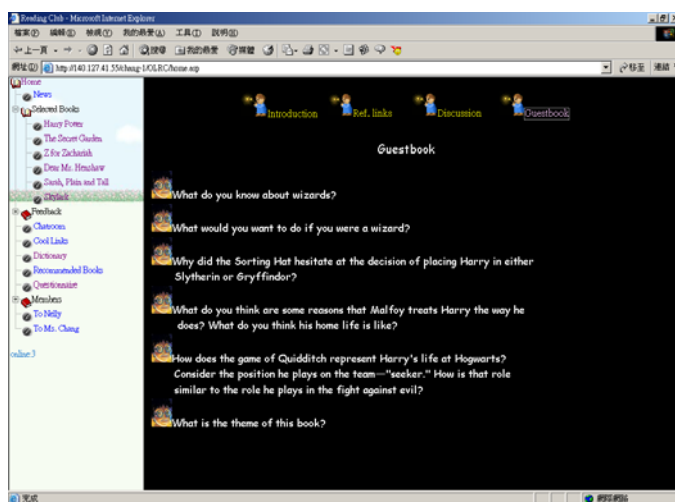
D: Disagree

SD: Strongly Disagree

All the means of the subjects' responses to the guestbook design were 4.06 or more; the high means show that the guestbook design did have some positive effects on the subjects' responses to the OLRC. Six questions in pre-reading, while-reading and after-reading in the OLRC were interesting, so the subjects were eager to answer the questions.

Sample 3

Six Questions of Every Selected Fiction on the Guestbook



Take the guestbook design of the selected fiction *Harry Potter and the Sorcerer's Stone* for example. The teachers' responses to the question "*What would you want to do if you were a wizard?*" were varied. The teachers' imagination could be shown in the following excerpts.

"As a mother, it would be wonderful. If I were a wizard, I would not cook and clean any more. When it was dinnertime, I could wave my wand and recite some spells. Immediately, all the delicious dishes would be piled in front of my family." (T-41)

Many reasons help interpret why the guestbook design helped improve their English reading ability. First, the questions on the selected fiction's guestbook design were appealing, so the subjects would like to jot down their comments on the guestbook design. Second, the guestbook design helped increase the teachers' reading speed, especially when they read the other club members' responses to the questions of the guestbook design in the OLRC. Furthermore, it helped the teachers enlarge their vocabulary bank and promote their reading abilities in the OLRC.

Some teachers also expressed their opinions that the guestbook design improved their writing ability because they learned new vocabulary and read others' comments on the guestbook in the OLRC.

"I had many chances to see other people's articles. From them, I learned how to express myself, what new words mean, and so on." (T-22)

Furthermore, some teachers indicated that the guestbook design in the OLRC could help them identify their own writing weaknesses and *share their feelings with others*.

"By reading other people's writing, I'm aware of my weakness in writing. Then I will try to improve my writing skills." (T-12)

"The guestbook and the discussion board help share my feelings with others." (T-31)

Accordingly, it shows that the guestbook design of the selected fiction of the OLRC enhanced the teachers' reading speed, improved their reading ability and developed their writing competence. As a result, many teachers approved the function of the

guestbook design in helping promote their English literacy.

In terms of the teachers' responses to the discussion board design of every selected fiction of the OLRC most teachers had positive responses. The mean scores of the discussion board design are 4.20 and above. The teachers' positive response could be contributed to the springboard of good interaction in the discussion board design. When the subjects jotted down their responses to every selected fiction on the discussion board after reading, they could create topics for their own responses to every selected fiction, and then they could get more than one peer responses from the other club members. The following homepages from the discussion board of the selected fiction could be sampled. Sample 4 shows Teacher 21' general response to the fiction *Sarah, Plain and Tall*, and the topic was very creative – *Sarah, not "plain" at all*. Then, it displays two peer responses of Teacher 17 and Teacher 14 to the extracted general responses of Teacher 21.

Sample 4

The General Responses and Peer Responses of the Discussion Board Design

The screenshot shows a web browser window displaying the OLRC discussion board. The thread is titled 'Sarah, Plain and Tall'. The initial post by Teacher 21 (a-21-Alice) is highlighted. Two subsequent posts by Teacher 17 (a-17-Min-ling Liu) and Teacher 14 (a-14 Yu-hui) are also highlighted. Red callouts with labels identify these specific posts: 'T-21's General Responses', 'T-17's Peer Responses', and 'T-14's Peer Responses'.

On the discussion board of the OLRC, all of the club members expressed their general responses on the discussion board freely. They also got lots of peer responses correspondingly. This kind of cheerful interaction gave the teachers a sense of achievement, so most of the teachers liked the discussion board design of every selected fiction in the OLRC.

The teachers expressed that the discussion board design of every selected fiction in the OLRC did help improve their reading ability because they were encouraged to do critical responses after reading every selected fiction in this project.

Therefore, reading the others' peer responses is also helpful in promoting reading ability.

"The on-line reading club helps me improve my English reading comprehension. Especially when I have to do peer response, I have to read other classmates' opinions and understand them so as to respond to them." (T-08)

"By reading the peers' responses, I learn a lot and am surprised to know that everyone has a unique way of expression." (T-21)

In reading his or her peer responses, the individual subject might have positive or negative responses. He or she might express such responses on the discussion board of the OLRC in a unique way. When the written responses were read, the different expression might inspire the reader to do further critical thinking, just like the forming of a snowball step by step. As a result, the teachers expressed that their reading ability had been improved in the project.

As to the effects of the discussion board design on development of the teachers' writing ability, many teachers expressed that the discussion board design of every selected fiction could help improve their writing ability. The following excerpts show this effect.

"When I have to write down my responses, I will push myself to choose the right words to express my real thoughts." (T-01)

"I try hard to compose some sentences to express my own opinions, that means, it will enhance my writing ability." (T-05)

All the teachers of the OLRC had to write one response and two peer responses on the discussion board of every selected fiction. Before jotting down their reading responses on the discussion board, the teachers had to compose their ideas about every selected fiction in their minds or write scripts in advance. No doubt, the teachers' writing ability was improved by frequent writing on the discussion board. The teachers also expressed that their writing ability could be improved by replying other members' responses in different perspectives, or by getting English writing models from the other club members' writing.

“I can express my own opinions and do responses to others’ ideas in the reading club.” (T-13)

“By reading other people’s writing, I can learn many different expressions which I’m not used to use.” (T-04)

“By browsing other people’s works. I got the chance to imitate their writing skills and thus improve the weak points of mine.” (T-14)

By writing peer responses on the discussion board design, the teachers could get various points of view about every selected fiction. By reading the other teachers’ responses to every selected fiction, the teachers could learn some different expressions and writing skills, and then they applied them in their own writing. Thus, the teachers’ writing ability could be improved in the OLRC.

In brief, the discussion board design in the OLRC gave the teachers a chance to get different ideas of every selected fiction from the other club members’ responses, which is accordance with Goeller’s (2001) and Mulquin’s (2002) notions of the benefits of on-line forums. Through a discussion board or an on-line forum, users were encouraged to communicate with others, get immediate feedback, have a sense of belonging, and then enjoy the activity in the learning community.

As to the teachers’ responses to the reference link design in Table 1, the teachers liked the design of the content of the reference link design very much (M=4.54) because it helped increase their interest in learning English (M=4.24). In addition to getting some resources about the authors and fiction reviews of the five selected fiction on-line, the teachers also could get some lesson plans about the fiction. In the website of teaching the fiction *The Secret Garden*, the teachers could obtain information how to teach the fiction chapter by chapter and how to do questioning-and-answering, for instance. Since the reference link design was useful for English literacy promotion and English teaching promotion, the teachers liked the design very much.

However, the means of the teachers’ responses to the chat room design (Sample 5) and the recommended fiction design (Sample 6) in Table 2 were not very high.

Sample 5
The Chat Room Design



Sample 6
The Recommended Fiction Design



Compared with the teachers' responses to the guestbook design and the discussion board design, fewer teachers expressed that the chat room design and/or the recommended fiction design could enhance their writing ability. Maybe it was because the teachers thought the words and sentences they used in the chat room design tended to be simple English sentences and phrases, which were not helpful in sharpening their written English expression. Or maybe they found no partners to communicate with on-line in their personally expected time, so they did not show their interests in "talking" with others in the chat room design. As to the teachers' low responses to the recommended fiction design, the teachers were not "required" rather than be "encouraged" to recommend fiction to others on-line. If the teachers were too busy in their teaching or outside reading, they might spend little time in recommending fiction to others in the OLRC. Or maybe there is no feedback design of the recommended fiction design, such as ranking of the top five recommended fiction or ranking the review of the recommend fiction. The one-way fiction recommendation design may result in low interest of the subjects in the OLRC.

Teachers' Responses to the Interface Design of the OLRC

The interface design of the OLRC includes the guestbook design, the discussion board design, the chat room design, the reference link design, the recommended fiction design, and the on-line help design. The statistical results of the members of the teachers' responses to the function of the interface design are shown in Table 3.

Table 3**Means of the Teachers' Responses to the Interface Design of the OLRC**

| Items | Total | Guestbook Design | Discussion Board Design | Reference Design | Chat Room Design | Recommend- ed fiction design |
|--|--------------|-----------------------------|--|-----------------------------|-----------------------------|---|
| A. It is easy to use the function of the _____ in the OLRC.. | 50 | 4.30 | 4.38 | 4.34 | 3.98 | 4.20 |

SA: Strongly Agree**A: Agree****N: Neutral****D: Disagree****SD: Strongly Disagree**

From Table 3, most of the teachers (Mean=4.30) expressed that the function of the guestbook of the OLRC was easy to use. The function of the guestbook of every selected fiction contained six questions about the selected fiction. The teachers could choose at least two questions to answer. If the teachers wanted to answer the questions, they could write down their names, select pictures showing their moods, and write down their responses to the questions on the guestbook. Moreover, they could browse all the teachers' responses to the questions. If the teachers posted their responses to the questions by e-mail, they could neither browse their own responses on the website nor browse the other club members' responses. Compared with the way of using e-mail to post responses, this kind of design was much more user-friendly.

Most of the teachers (Mean=4.38) also expressed that the function of the discussion board of the OLRC was easy to use because of easy-to-write function of the discussion board and a clear tree structure of responses on the discussion board. If some teachers wanted to post their responses, they just clicked the icon of Post Response and then jotted down their names, e-mail accounts, topics and response messages on the board. After that, they could see their responses on the main page of the discussion board immediately. In addition, the teachers could see how many club members gave them peer responses according to the tree structures of the peer response board. Then they could do further peer response if they wanted. In addition, most of the teachers (Mean=3.98) expressed that the function of the chat room of the OLRC was easy to use. The teachers could talk with their partners about the selected fiction in the chat room. To have access to the function of the chat room, the teachers just wrote down their names, and then they could "talk" with the other club members on-line. Therefore, they expressed that the design of the chat room was easy to use.

Most of the teachers (Mean=4.34) expressed that the function of the reference link design of the OLRC was easy to use. The reference links of the OLRC offered the teachers a lot of websites about the selected fiction. The teachers could search

for more information from the reference link design. And the reference links were grouped in every selected fiction so that the teachers could get precisely what they wanted. Furthermore, most of the teachers (Mean=4.20) indicated that the function of the recommended fiction of the OLRC was easy to operate. After jotting down their names, the fiction's names, the author's names, and the brief introduction about the fiction, and the fiction's classification, the teachers could recommend good fiction to others easily.

Most of the teachers (Mean=4.38) expressed that the function of the registration system of the OLRC was easy to use. In the OLRC project, the registration system was necessary. There were two functions of the registration system; one was to help the researchers to monitor the progress of the OLRC project, and the other was to help the club members compose their learning portfolios on-line. In addition, the club members of the OLRC were all English teachers in secondary school. Their needs and interests of reading were usually similar so that it was easy for them to get the senses of self-identity and self-esteem in the OLRC.

In the registration system, the frequency of the club members' browsing the OLRC was recorded. By composing this kind of learning portfolio, the teachers could have a sense of achievement. As to the teachers' responses to Item 38 (*I think the design of the on-line dictionary is easy to use*), most of the teachers (Mean=3.88) agreed with this statement. The on-line dictionary of the OLRC was a link to Merriam-Webster On-line Dictionary (<http://www.m-w.com/dictionary.htm>). The teachers could use it to look up the vocabulary or phrases they did not know. After keying the new words, the user could get the word meanings right away. So the teachers expressed that the function of the on-line dictionary of the OLRC was easy to use.

Compared with the above five designs, the teachers did not use the function of the reference link design, the registration design, and the on-line dictionary very often. Because the three designs were supplementary rather than the main designs of the OLRC, the teachers did not choose them as their favorite. In conclusion, the teachers had positive responses to the main function of the OLRC project, including the functions of the guestbook design, the discussion board design, the recommended fiction design, and the chat room design.

Teachers' Responses to the Selected Fiction of the OLRC

The teachers' general responses to the selected fiction can be presented in Table 4.

Table 4**Teachers' General Responses to the Selected Fiction of the OLRC**

| Items | Frequency | | | | | Total | Mean | Variance |
|--|-----------|----|---|---|----|-------|------|----------|
| | SA | A | N | D | SD | | | |
| 1. I like all the five selected fiction in the OLRC. | 26 | 22 | 2 | 0 | 0 | 50 | 4.48 | .34 |
| 6. I like every selected fiction's introduction of the OLRC. | 25 | 21 | 4 | 0 | 0 | 50 | 4.42 | .41 |

SA: Strongly Agree A: Agree N: **Neutral** D: Disagree SD: Strongly Disagree

Table 4 shows that proper selection of fiction encourages the teachers to participate in the activities of the OLRC. The teachers were eager to join the on-line discussion of the selected fiction because they liked the selected fiction (Mean=4.48). From the teachers' responses to Item 6 in Table 4 (Mean=4.42), the introduction of every selected fiction successfully prompted the teachers to read the selected fiction. When the teachers could get some idea about every selected fiction from the brief introduction, they tended to read the selected fiction with ease.

In addition, the teachers' responses to fondness of the five selected fiction of the OLRC were also investigated. The teachers' specific responses to the five selected fiction were shown in Table 5.

Table 5**Frequency of the Teachers' Responses to the Selected Fiction of the OLRC**

| Items | H | G | Z | D | S | Total |
|---|----|----|----|----|---|-------|
| 31. Of the selected fiction, the fiction I like best is _____. | 22 | 10 | 2 | 9 | 7 | 50 |
| 33. Of the selected fiction, the fiction I dislike most is _____. | 3 | 4 | 26 | 11 | 6 | 50 |

H: *Harry Potter and the Sorcerer's Stone*

G: *The Secret Garden*

Z: *Z for Zachariah*

D: *Dear Mr. Henshaw*

S: *Sarah, Plain and Tall*

From Table 5, it shows that many (22) teachers liked the fiction *Harry Potter and the Sorcerer's Stone* best. It was because the plot of the fiction *Harry Potter and the Sorcerer's Stone* dealing with a story about a magic school and wizards, was so appealing and inspiring. In addition, the fiction reminded them of their childhood. Furthermore, a lot of word play, such as the description of a mirror "Erised" for "Desire", or a girl's name "Hermione" for "Heroine", was creatively applied by the author, so many teachers liked the fiction. By contrast, many (26) teachers did not

like the fiction *Z for Zachariah* very much. Some teachers expressed that the puppet love or the charity behavior of the main character, Ann, would mislead young adult readers in romance. Some other teachers expressed that the theme of the science fiction was not significant to teenagers. To sum up, many factors influence the teachers' fondness of adolescent literature fiction, either in the personal concerns or in the instructional concerns.

Teachers' Self-evaluation of English Literacy in the OLRC

This section presents the teachers' self-evaluation of English literacy in the OLRC. The development of the teachers' reading interest and writing ability is discussed. From the teachers' responses to Item 43, most teachers agreed that all the activities of the OLRC were helpful for their English reading interest and ability. The reasons can be generalized as follows:

1. The teachers could share various points of view.
2. The teachers could read lots of fiction in limited time.
3. The teachers could learn a lot of vocabulary.

The teachers expressed opinions that they could share others' unique points of view on the discussion board and on the guestbook of the OLRC. Their reading interests had been promoted because they read and wrote responses on the discussion board and on the guestbook of the OLRC every week. In addition, the teachers expressed that their reading ability had been improved because they were encouraged to read a lot of fiction in the OLRC during eight weeks. Therefore, the extensive reading in the OLRC helped them develop their reading abilities, specifically in reading English on-line.

As to the teachers' responses to the effect of the OLRC on their English writing, most teachers agreed that all the activities of the OLRC were helpful for their English writing interest and ability. Because every teacher was required to answer two questions on the guestbook of every selected fiction every week, and he or she was also required to jot down one general response and two peer responses on the discussion board of every selected fiction every week in the OLRC project, the teachers indicated that their writing ability had improved a lot. Furthermore, the teachers thought that their writing interest and ability could be improved by reading others' responses on the guestbook and the discussion board. They could learn a lot of vocabulary and phrases by extensive reading in the OLRC, which helped them sharpen their writing skills.

Some of the teachers expressed that they had never thought to share their comments on a fiction with other people, and some other teachers expressed that they were shy to share their responses with other people in public before the OLRC project.

However, many teachers changed their attitude toward English reading and writing after they participated in the OLRC project. Through the OLRC, some of the teachers had even tried to give responses to a fiction or to share their responses with other people for the first time. It was amazing for the teachers to see the other club members' peer responses. This kind of enjoyment of learning motivated the teachers to write down more responses on the guestbook and the discussion board. As a result, the teachers expressed that their interests in learning English were enhanced in the OLRC. The teachers even wanted to provide their students with such a kind of on-line reading club to help develop students' interest in learning English. In conclusion, the findings showed that the OLRC helped arouse the teachers' interests in learning English, make the teachers feel interested in reading adolescent literature, and enhance the teachers' interests in writing responses to the other members.

Teachers' Comments and Suggestions for the OLRC

After the eight-week OLRC project, the teachers made some comments on the OLRC project as shown in Table 6.

Table 6

The Mean of the Teachers' Responses to the Recommendation of the OLRC

| Item | Frequency | | | | | Total | Mean | Variance |
|---|-----------|----|---|---|----|-------|------|----------|
| | SA | A | N | D | SD | | | |
| 30. I would like to recommend the OLRC to others. | 26 | 18 | 6 | 0 | 0 | 50 | 4.40 | .49 |

SA: Strongly Agree

A: Agree

N: **Neutral**

D: Disagree

SD: Strongly Disagree

From Table 6, most of the teachers (Mean=4.40) would like to recommend the OLRC to others. From previous discussion about teachers' responses to the instructional design, including the selected fiction design, the guestbook design, the discussion board design, the chat room design, the reference link design, the recommended fiction design, and the on-line help design, it shows that most teachers definitely assented to the instructional design of the OLRC.

Most of the teachers stated that these designs were profitable for improving their English reading and writing abilities. Because the teachers had to answer the questions on the guestbook and respond to every selected fiction on the discussion board, they could promote their English literacy. Thus, they would like to recommend the OLRC to the others.

In addition, the teachers made some suggestions for the improvement of the OLRC as shown in Table 6.

Table 6
Teachers' Suggestions for Improvement of the OLRC

| Aspects | Suggestions | Frequency |
|-----------------------------|--|-----------|
| Instructional Design | 1. Offering some language games or quizzes. | 4 |
| | 2. Offering some lesson plans. | 4 |
| | 3. Offering more links of good English teaching websites. | 1 |
| | 4. Offering some information of the movies about the selected fiction. | 2 |
| | 5. Offering some introduction of the main characters of the selected fiction. | 1 |
| | 6. Offering some introduction to the authors' sister fiction. | 1 |
| | 7. Offering some interesting news, topics or comics. | 1 |
| Interface Design | 1. Offering an on-line board for sharing experiences of teaching adolescent literature. | 3 |
| | 2. Offering links to the websites of libraries and universities where deal with adolescent literature. | 1 |
| | 3. Offering a FAQ function system. | 1 |
| | 4. Offering a stable network system for the project | 2 |

In the aspect of the instructional design of the OLRC, four teachers hoped to get some on-line resources of language games or quizzes. And the other four teachers hoped to get some on-line resources, such as lesson plans. It seems that the teachers needed some help of teaching resources in the OLRC in teaching resource enrichment. A few of the teachers would like to get more information about the selected fiction's authors, main characters, related movies, and these authors' other works. They expressed that the brief introductions of main characters or relevant movies of the selected fiction would help them understand the beauty and power of the fiction easily. Some teachers also expressed that they could do extensive reading of their favorite works if they knew the author's other works. Besides, the teachers expressed that if they could know more about their favorite authors' works in the OLRC, they would use these works in their English instruction in secondary school. They believed that their students would love to read these authors' sister works in narrow reading.

In the aspect of the interface design, three teachers hoped to have more on-line assistance while using the OLRC. These on-line assistance includes some websites of libraries or universities, which deal with many celebrated fiction prices, sources, and the guides to adolescent literature. Then the FAQ system was suggested to be helpful in the OLRC. Moreover, the OLRC project was processed from July to August in 2001. At that time, the Code-Red Virus attacked almost all the computers using Microsoft network system all over the world. As a result, the OLRC program was infected. It was not easy to delete the virus because this virus would attack the system again and again. As a result, the network system of the OLRC was forced to quit for several days. The high frequency of the shutdown of the OLRC project frustrated the club members more or less. A few of the teachers hesitated to join the discussion in the OLRC. For the later OLRC, the network managers had better install their programs in a stable server and update the system's anti-virus protector frequently.

Conclusions

Generally, the teachers confirmed both the instructional design and the interface design of the OLRC. The instructional design was helpful for their English reading and writing development. Most of the teachers expressed that their English literacy was enhanced in the OLRC. The interface design of the OLRC was also easy-to-use and the link of every function was effective. In addition, the teachers liked the selected adolescent literature fiction and were eager to discuss these fiction with one another. Last but not least, most of the teachers showed positive attitude toward the OLRC and their willingness to apply what they had learned in the OLRC in their English instruction.

The findings derived from this study may offer several pedagogical implications. Since the effects of the OLRC project on the English literacy of secondary school teachers has been confirmed in this study. It is hoped that the OLRC project can continue to be used as good learning resources for English teacher training or teaching references on-line. In addition, EFL teachers can improve their students' English literacy by providing their students with an on-line communicative and cooperative English learning environment. As shown in this study, the teachers showed high motivation to join the OLRC project for they enjoyed the communicative and cooperative way of learning English. In the OLRC project, the teachers read selected fiction and then discussed these fiction with the other club members on the discussion board, the guestbook, and the chat room. During the OLRC project, the teachers also had lots of fun in writing their responses and peer responses to every selected fiction; they got opportunities to express their ideas freely and joyfully.

This will help those shy teachers to write down their responses with confidence and then enhance their interests in reading and writing. In the same way, when EFL teachers provide their students with such a learning environment, their students will have the same benefits in learning English and global communication.

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Connecting Shakespeare's Language Learning and Cooperative Learning On-line

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Shakespeare's language had a tremendous influence not only on the development of the early modern English language but also on our present-day English. Because of the creativity and artistry of the language of Shakespeare, many people ranging from scholars to the mass population are familiar with Shakespeare's language in his works and even use it in their daily life. Currently many educators have been utilizing the homepage composing system to help students learn Shakespeare's language. The functions of interaction and immediate feedback on the homepage help develop students' interest and ability to read and write proficiently. They also help cultivate computer-friendly users and researchers in collaborative education and improve the intellectual achievement, academic exchange and the socio-cultural interaction of the participants.

Based on the author's interest in the interactive function of the homepage and cooperative education, an interactive homepage project was designed in a content-area study of the language of William Shakespeare. The project was designed for a junior-level course, *The History of the English Language* at NKNU in 1998. The project included not only group homepages featuring the language of William Shakespeare's works but also an on-line exam for the course. This study focuses on the advantages and possible problems of homepage-assisted language teaching at the college level.

THINKING AND LEARNING

Alexander (1998) claims that learning is something that one does in order to understand the real world, rather than something done by someone or something to the learner. When students themselves deal with complex social issues or personal difficulties, they have opportunities to work through them at a higher level of thinking.

Later on, they hypothesize, analyze, and synthesize the relevant explanations and solutions. Finally, they construct their own strategies to solve the problems. In learning theory, Vygotsky (1986) indicates that the development of mature thinking is a process of abstraction through analysis and synthesis. Billett (1996) further exemplifies that people who participate in higher-level thinking activities, such as problem solving, study projects or simulation, can construct models of knowledge by themselves.

In instructional design, teachers can help students promote their heuristic and meta-cognitive awareness through learner involvement in tasks and projects (Merrill, 1992). They can assign students either individual projects or group projects as learning prompts and help them complete the projects through guidance as well as encouragement. By integrating both learning theory and instructional design, teachers can offer students an inspiring, active learning environment in which to construct models of knowledge and cultivate higher-level thinking. Teachers also can help students expand their thinking if they encourage students to study in a certain content area.

CONTENT AREA INSTRUCTION

Traditional language teaching emphasizes passive learning and heavy memorization of vocabulary and grammar rules, but alternative language teaching stresses active learning and inspiring feedback in the content of the learning subject; the former helps students develop lower level thinking skills, but the latter helps them develop higher level ones. In content area teaching, the activities of the language class are specific to the subject matter being taught, and are geared to stimulate students to think and learn through the use of the target language. In other words, the subject matter is primary, and language learning occurs incidentally to content learning (Krahnke, 1987). Therefore, students not only understand the subject matter but are also able to interpret and evaluate it in the target language. Brinton, Snow and Wesche (1989) indicate that content-area second language teaching offers learners the necessary conditions for second language learning by exposing them to meaningful language in use for it takes into account the interests and needs of the learners.

Brinton, Snow and Wesche (1989) divided content-based language instruction into three models: 1) a theme-based model, 2) a sheltered model, and 3) an adjunct model. In a content-based case study of the Chinese students of the Social Science English Language Center in Beijing in 1985, Brinton, et al. divided the students into three groups: one group used a theme-based model, another used a sheltered model and

the third used an adjunct model. After a five-year study, it was found that the group who used the adjunct model learned the target language, English, more easily and with more self-confidence than the other two groups.

On the basis of Brinton, et al.'s study findings, an adjunct model was applied to English major students in Taiwan in their content-area learning of the language of William Shakespeare (1564-1616) in the course, *The History of the English Language*. By truly contextualizing the study of the language of Shakespeare, it was hoped that the students in this study might commit themselves to material adaptation and development, and then develop their target language, English.

THE LANGUAGE OF SHAKESPEARE

“Shakespeare is like food: we take both very much for granted. It is only when we come across a passage of particular intensity in a play that we question how the language has been employed to achieve that result.” (Blake, 1983, 1) Shakespeare's language had a tremendous influence not only on the development of the early modern English language but also on our present-day English. Because of the creativity and artistry of the language of Shakespeare, many people ranging from scholars to the mass population are familiar with Shakespeare's language in his works and even use it in their daily life. And many studies have explored the magic of Shakespeare's language from various disciplines, such as drama, the fine arts, linguistics, education and humanities (Andrews, 1985). The exciting discoveries of the power and nuance of Shakespeare's language by successive generations of readers are like many tips of an iceberg. In a linguistic study of Shakespeare's language, researchers have focused on certain significant and inspiring features of the language, which can be explicated from six linguistic aspects: pronunciation, grammar, semantics, vocabulary, idiom, and wordplay, as follows.

Pronunciation

Shakespeare's pronunciation reflects the unique accents of many places. Because he was born in Stratford-upon-Avon, he spoke a kind of Midland English. After marrying, Shakespeare went to London to commence his career as an actor where he also wrote poems and plays. Therefore he could speak the southern dialect and even the west midland dialect, in which *r*-pronunciation was highlighted. Shakespeare also could speak the northern dialect, such as the inflections *-s* of the verbs *tell-s* and *speak-s* as opposed to the southern dialect *telle-th* and *speake-th* in the third personal pronouns (McCrum, Cran & MacNeil, 1986). With the development of

the Great Vowel Shift, Shakespeare upgraded the vowels, thus *speak* [spi:k] for [spe:k], *goat* [go:t] for [gɔ:t], *five* [faiv] for [fi:v], and *down* [daun] for [du:n] (*Baugh and Cable, 1978, 238*).

To highlight sound effects for dramatization in a theater, Shakespeare stressed different syllables alternately. In terms of the stress on the first syllable, we have, for example, *absurd* (in *Hamlet* 3.2.65) and *antique* (in *Hamlet* 2.2.491). In terms of stress on the second syllable, there are *object* (n) (*Richard III* 1.1.106) and *combat* (vb) (in *Hamlet* 4.1.1.54), for instance. Furthermore, many homonymic puns display satire or the sympathy of certain characters. (Andrews, 1985)

Grammar

English in Shakespearian times was in a state of transition. The inflection of certain Middle English words were lost, and word relationship was expressed by word order. Nevertheless, the word order of Early Modern English had not yet become fully established. Therefore, there was ambiguity in language use. Furthermore, a great freedom in language expression was advocated by famous scholars and authors, including William Shakespeare. Certain ambiguities used by Shakespeare have acquired new senses and connotations, such as the use of the auxiliary verb *do* in negative and question sentences.

- 1) *I do not sue to stand.* (*Richard II* 5.3.129)
- 2) *Or if there were, it not belongs to you.* (*2 Henry IV* 4.1.98)
- 3) *And did you leaue him in this contemplation?* (*As you Like It* 2.1.64)
- 4) *What sayde he?* (*As you Like It* 3.2.221)

(*Baugh and Cable, 1978, 96*)

Graddole, Leith and Swann, (1996) posited two factors for Shakespeare's free shift in syntactic structure: one was his role as a dramatist and the other was his characterization. In his works, Shakespeare wrote with a variety of sentence patterns, and he portrayed different characters in unique contexts and situations in plays highlighting widely divergent kinds of language expressions. Moreover, Shakespeare liked to change the grammatical functions of words. He often changed nouns and adjectives into verbs, such as the statements "*Don't uncle me.*" (*Hamlet II*) and "*He stranger'd with an oath.*" (*King Lear II*), thus deliberately circumventing conventional rules. Rather than force his thought into the mold of conventional grammar, Shakespeare always fitted the language to his own thought.

Semantics

Unlike changes in pronunciation and grammar, the ways in which semantic change in Shakespeare's plays opened up such interesting bypaths in the social and cultural history of Early Modern English. Let's take the second person pronouns, *th*-form and *y*-form, as examples. The *th*-forms of the singular pronouns (*thou*, *thee*, *thy*, *thine*) were generally used by different persons in different situations, thus:

- 1) persons of high rank addressing an inferior
(e.g., when the Duke of Clarence addresses two soldiers. (*Richard III* 1.4))
- 2) parents speaking to a child
(e.g., when Talbot speaks to his son John before a battle. (*1 Henry VI* 4.5))
- 3) lovers, spouses or friends speak to each other familiarly or intimately.
(e.g., when Romeo chatted with Juliet at her balcony. (*Romeo and Juliet* 2.2))
- 4) strangers, regardless of rank, speak to each other in anger or contempt.
(e.g., when Prince Hal and Henry Percy scold each other on a battlefield. (*1 Henry IV* 5.4))

(Baugh and Cable, 1978, 90)

On the other hand, the *y*-forms (*you*, *ye*, *your*, *yours*) were used by persons in the same or different situations:

- 1) persons of lower rank speaking to a superior.
(e.g., when two soldiers spoke to the Duke of Clarence. (*Richard III* 1.4))
- 2) children speaking to a parent.
(e.g., when John spoke to his father Talbot before a battle. (*1 Henry VI* 4.5))
- 3) The emotionally more neutral *y*-forms replacing the *th*-forms in certain situations, (sometimes expressing estrangement or distance), but not the vice versa.
(e.g., when Othello spoke to his wife Desdemona before her death. (*Othello* 5.2))
- 4) The plural form being used in uncertain situations.
(e.g., when the tribune, Flavius, spoke to commoners. (*Julius Caesar* 1.1))
- 5) a person of higher rank ironically addressed an inferior to show contempt, especially with an ironic *sir*.
(e.g., when the tribune, Flavius, spoke to a carpenter. (*Julius Caesar* 1.1))

(Baugh and Cable, 1978, 90)

From these examples of the various uses of the second person pronouns, both *th*-forms and *y*-forms, we see signs of social status how humans relate in Shakespeare's plays. We also see Shakespeare's subtle devices figuratively reveal the dramatic passion of the characters.

Vocabulary

Shakespeare used a wide vocabulary, including the vocabulary of various English dialects (such as vocabulary words from Irish, Scottish and Welsh), French and Latin borrowings (such as *majesty* and *emperor*), other scholars' invented words (such as *antipathy* and *critical*) and his own invented vocabulary (such as *accommodation* and *assassination*). A word like "multitudinous", for instance, is a reminder that Shakespeare had one of the largest vocabularies of any English writer (McCrum, Cran & MacNeil, 1986, 102). According to Andrews (1985, 352), there are 20,138 lemmata in Shakespeare – 44.87 percent of the total recorded for English up to the year 1623. (A lemma is a headword in a dictionary.) Nevertheless, due to some specially rhetoric devices, certain words may expand their syntactic functions or semantic functions. Therefore, "There was no agreement on the exact size, scope and nature of his (Shakespeare's) vocabulary" (Andrews, 1985, 352).

Not only did Shakespeare know a lot of vocabulary words, either native or borrowed, but also he tried to use them in an unconventional and ingenious way. Blake (1983) pointed out the choice of easy-to-understand vocabulary in Shakespeare works:

It is much easier to think one understands Shakespeare because his linguistic innovations are concentrated in the more everyday words. He extends their meanings through functional shift or through metaphor or through emphasizing some less frequent element in its make-up. In this way, he was able to write poetry which was densely packed with meaning but which did not seem strange or exotic. (Blake, 1983, 55)

Quotations and Idioms

Shakespeare had an extraordinary ability to create lasting quotations and idioms by combining words and phrases, which have become cliches in some cases. Many quotations are based on Shakespeare: "If you cannot understand my argument, and declare "It's Greek to me", you are quoting Shakespeare; if you claim to be more

sinned against than sinning, you are quoting Shakespeare; if you recall your salad days, you are quoting Shakespeare.” (Bernard Levin, cited in McCrum et al., 1992, 99) From his many concise, precious, ingenious and humorous exemplary quotations, it seems that Shakespeare’s language has been a part of our daily lives even if we are not aware of it.

Nevertheless, some of Shakespeare’s idioms are different from those of present-day English. Baugh and Cable (1978) analyzed and exemplified some differences in idioms between Shakespeare’s language and present-day English, such as omission of the article (e.g., *creeping like (a) snail, with as (a) big heart as thou, etc.*) and insertion of an article (e.g., *at (the) length, at (the) last, etc.*) (Baugh & Cable, 1978, 248)

Anderews (1985, 359) attributed the free use of syntactic structure in Shakespeare’s works to two factors: one is the variation in dramatization in his plays, and the other is the differentiation in writing styles between his prose and his verse. Besides, Shakespeare was in a transitional period in the development of the English language. On one hand, Shakespeare’s language was governed by certain conventional syntactic rules; on the other hand, it was peppered with new syntactic structures because of the strong creativity and imagination of Shakespeare. Since Shakespeare was a great playwright and poet, his special idioms became authoritative and celebrated expressions in his lifetime and afterward.

Wordplay

Wordplay (or Chiasmus) is the arrangement of identical words or phrases to appear twice in parallel clauses but in reversed order, which produces puns in rhetoric (Lahan, 1983). According to Wang (1995), there are two types of wordplay in Shakespeare’s plays; one achieves its effect from its sentence patterns (such as *The body is with the king but the king is not with the body. (Hamlet 4.2.29-30)*), and the other achieves its effect from its word forms (such as *What kind of man is he? Why? Of mankind of course. (Twelfth Night 1.1.160)*). In wordplay, the same word may have different senses or meanings, and different words may be close in sound. Andrews (1985) classified Shakespeare wordplay into four types: 1) antanaclassis (e.g., *Was this the face that faced so many follies / And was at last outfaced by Bolingbroke? (Richard II, IV)*), 2) syllepsis (e.g., *Your sense pursues not mine. (Measure for Measure, II)*), 3) paronomasia (e.g., *If he do bleed, I’ll gild the faces of the grooms withal, for it must seem their guilt. (Macbeth, II)*), and 4) asteismus (e.g., *What is it*

carries you away? Why, my horse, my love – my horse. (I Henry IV, II) Andrews indicated “such figures may at first hearing seem merely witty, but they often have a greater resonance.” (p. 380) Due to the subtle metaphor device, one sound pattern appearing in a same line twice reveals two different meanings. Angelo’s pun on *sense*, for example, is consistent with the themes of sensuality and order. And Lady Macbeth’s *gild and guilt* show both motive and regret in her virtue.

The wordplay device in Shakespeare’s plays not only stimulates readers or listeners to make untypical associations but also provides good wordplay models for writers or speakers. Some politicians even have adopted wordplay in their speech, such as in Kennedy’s Inaugural Address “*Let’s never negotiate out of fear. Let’s never fear to negotiate.*” Churchill also used wordplay in his African campaign speech “*This is not the end. It is not even the beginning of the end, but it is perhaps, the end of the beginning.*” In short, wordplay is an artistically and ingeniously rhetorical device of Shakespeare’s language, and it has had a great influence on language expression and rhetoric in the development of present-day English.

HOMEPAGE-BASED LANGUAGE LEARNING

In a high-tech society, teachers can help students a higher level of thinking via network communication, such as e-mail, bulletin board systems or even homepages. Because of the benefits of multi-media, such as instantaneousness, resourcefulness, flexibility, variety and interaction among networked homepages, many users post their questions or problems to homepages and get various feedback or suggestions from other network users. Furthermore, many multimedia homepages are designed in hypermedia structure, and they display to users higher levels of thinking, learning and creativity. In addition, users express ideas or feelings with multivalent meanings on homepages, which strengthens the possibility of more effective, personalized communication.

Information technologies enable students to become much more actively involved in the learning dialogue. Belief in the power of information technologies to make a significant difference in teaching and learning is growing (Boettcher, 1994). With the development of homepage designing techniques, the functions of browsing, composing, linking and interaction provided through the homepage have helped develop students' interest and ability to read and write proficiently. They also have helped cultivate computer-friendly users and researchers in collaborative education and have improved the intellectual achievement, academic exchange and socio-cultural interaction of the

participants.

On the basis of cooperative learning (Johnson & Johnson, 1984), teachers can encourage students to participate in peer brainstorming and group discussion in order to get resourceful input to stimulate further thinking. When students do projects through group interaction, they efficiently develop creative thinking and analytic ability. As well, they develop an interactive interest in their learning process. The development of WWW homepages in this age of information science has provided students with many exciting learning resources and communication channels, which can reinforce students' learning interest and communicative ability. Therefore, teachers can make optimal use of the channels to implement interactive instruction.

With the development of homepage-assisted instruction, the study of Shakespeare's language on-line has become both possible and efficient. Some of the available web sites are listed as follows:

1. Creative Quotations from William Shakespeare
(<http://www.bemorecreative.com/one/7.htm>)
2. Welcome to Shakespeare Web
(<http://www.shakespeare.com>)
3. Shakespeare Queries & Replies From Everyone Else
(<http://www.shakespeare.com/qandr/others/4.97>)
4. Shakespeare Alive! Home Page
(<http://www.kadets.d20.co.edu/shakespeare>)
5. Shakespeare's Language
(<http://www.msu.edu/dig/Shakespeare/index.html>)

it is inspiring to conduct a content area study of the language of Shakespeare with the help of hypermedia on networks in addition to the conventional library search. Since hypermedia usually provide network users with abundant study resources, an efficient linking function and a flexible browsing function, they help users collect various and useful information for thinking and study.

IMPLEMENTING THE STUDY

To investigate the effect of interactive functions through the homepage and cooperative education, an interactive homepage project was designed for a content area study of the language of Shakespeare. The project was designed for a junior-level course, *The History of the English Language*, at NKNU and the direction of the project

was announced on an instructional homepage (Figure 1). The project included not group homepages (Figures 2 & 3) dealing with the language features of Shakespeare's works but also an on-line FQA (Frequently asked Questions and Answers) exam (Figure 4) for the course. The study also focuses on the advantages and possible problems of homepage-assisted language teaching in college.



Figure 1 Instructional Homepage

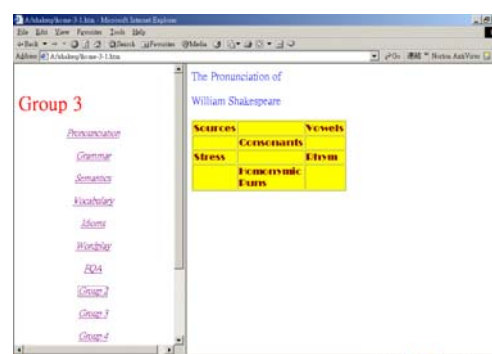


Figure 2 Sample Group Homepage 1

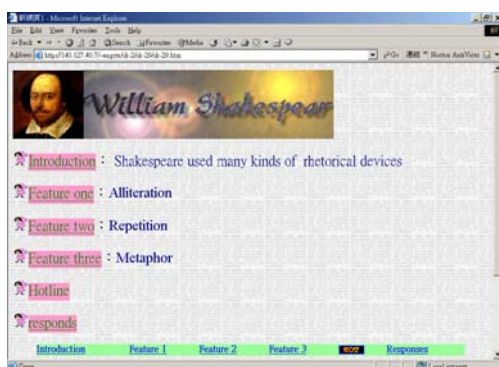


Figure 3 Sample Group Homepage 2

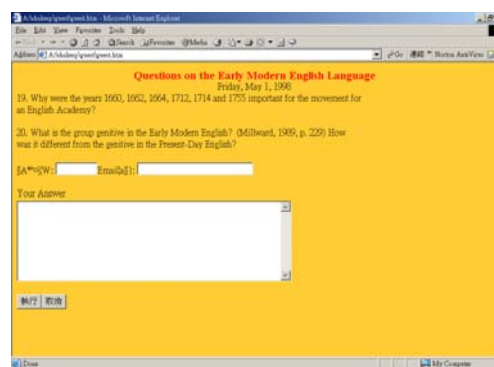


Figure 4 FQA Homepage

In this project, every group of students had to compose a group homepage on the same basis of six linguistic categories: pronunciation, grammar, semantics, vocabulary, idioms (or quotations), and wordplay. The subcategories of each category is shown in Table 1. Therefore, almost every student of every group had to study six subcategories of the assigned linguistic category. After every student submitted their study results to their group leaders, he worked with his group partners to compose a group homepage. In addition, every student was required to answer two of twenty questions about Shakespeare's language and the Early Modern English language on-line (Appendix A).

Table 1 Categories and Subcategories of the Study of the Language of Shakespeare

| <i>Category</i> | <i>Subcategory</i> |
|-----------------------------------|--|
| <i>Pronunciation</i> | Source, Vocabulary, Consonant, Stress, Rhyme, Homonymic Pun |
| <i>Grammar</i> | Noun, Pronoun, Verb, Preposition, Adjective, Adverb |
| <i>Semantics</i> | Number, Social Position, Adults and Children, The Superior and the Inferior, Strangers, Neutral Relationship |
| <i>Vocabulary</i> | Greek Latin, Coined Vocabulary, Cliches, Others |
| <i>Idioms (Quotations)</i> | Food, Clothes, Morality, Drama, Animal, Others |
| <i>Wordplay</i> | “and”, “or”, “but”, “if”, “than”, Others. |

The on-line FQA exam was constructed according to a special design, which provided students with a chance for computer-and-user interaction on-line. To make it clear to what extent the students learned from this on-line language study project, the teacher-researcher also encouraged students to write their responses to the project on their group homepages. Generally, there are four focuses in evaluating the degree of student learning in this project: homepage composing by the group, analysis of the language of Shakespeare by the group, an individual FQA exam, and individual responses to the project. The evaluation criteria for the project of individual students are schematized in Table 2:

Table 2 Evaluation Criteria for the Mid-term Report on The Language of William Shakespeare and On-line Question-and-Answer

| Homepage Composing by the Group (18%) | Analysis of the Language of Shakespeare by the group (42%) | | Individual FQA Exam (30%) | Individual Responses (10%) |
|--|---|--|----------------------------------|-----------------------------------|
| | Pronunciation | | | |
| | Grammar | | | |
| | Semantics | | | |
| | Vocabulary | | | |
| | Idiom | | | |
| | Wordplay | | | |
| Total | | | | |

FINDING OF THE ON-LINE PROJECT

The findings of this study of the language of Shakespeare on-line can be analyzed and discussed from six aspects: 1) content area learning, 2) learning attitude, 3) information search, 4) cooperative learning, 5) FQA exam, and 6) suggestions. Based on naturalistic inquiry, some quotations of the students in their responses to the project are given and interpreted. And some special designs of the group homepages (Appendix B) are referred to for the improvement of on-line projects in the future.

Content Area Learning

From the students' on-line responses to the project, it was found that most of the students had a good understanding of the language of Shakespeare in terms of the six assigned categories and their subcategories. By comparing their competence of the language of Shakespeare before and after the project, this study showed that the students had become more aware of the beauty and power of the language. As well, they themselves constructed a good schema of the language system of Shakespeare when they really thought about it, discussed it, and organized the relevant information on group homepages by themselves.

This project piqued my interest in not only the composing of a group homepage but also the linguistic study of Shakespeare's language. After studying some books about the grammar in Early Modern English, I learned many features of Shakespeare's language. (46)

To highlight the pronunciation during Shakespeare's time, I quoted some lines from Shakespeare's works like Macbeth and A Midsummer Night's Dream. Getting into Shakespeare's pronunciation, I did gain some knowledge especially in different usage of his homonymic puns. (62)

Shakespeare's idioms are words of wisdom, so they are used frequently in intellectual discussions. I didn't understand how important Shakespeare was until I found that many phrases people use today come from Shakespeare's invention. (30)

Learning Attitude

The students in this study changed their learning attitude toward studying Shakespeare's language. Originally, they thought that the linguistic study would be a hard and boring task, but they changed their attitude when they became involved in the study. After discovering the different functions of selected words or phrases in Shakespeare's works, most students tended to study Shakespeare's language in a positive and meaningful way. They began to look for something new in Shakespeare's language expression. They also paid attention to some special expressions or connotations in Shakespeare's works.

By studying Shakespeare's language I became more involved in the history of English. I also came to notice something I ignored before. Take "semantics" for example, whenever I read Shakespeare's plays, I paid more attention to the difference in the second personal pronouns "you" and "thou". (42)

I tried to appreciate the beauty and power of Shakespeare's language in his works from linguistic viewpoints rather than from literary viewpoints. Most important of all, I never learned these inspiring information and knowledge until in my junior year. Therefore, I think this on-line project is interesting and rewarding. (22)

In the past, I couldn't find time to read Shakespeare's works. There's always enough excuses for me to "escape" from him. But it's different now. I learned a lot from here. It not only gave me a complete "illustration" about his works, but also increased my vocabulary. Besides, it trained my reading and understanding abilities of the Early Modern English language. I became aware of Shakespeare's writing style and expression. (33)

Information Search

To complete the linguistic study, most of the students had to collect many references, either from university libraries or from relevant web sites. Though most of the students worked very hard on the information search, they received worthy rewards and feedback. They obtained not only the necessary information for the linguistic study, but also the skills needed for information collection for general

academic study.

To collect useful information for my assignment, I started my “hunting” from our library. First, I surveyed some books that were related to Shakespeare’s idioms on a computer in the library. I tried to do it several times until I found out two books about Shakespeare’s quotations. Then I found more collection of Shakespeare’s famous quotations from an Internet site. (33)

When I started to search for information about Shakespearean language, I couldn’t find any useful information. Because the information in our library was little and all concerned books were already checked out, which made it touchy to finish the assignment. Having no other choices, I rode my small motorcycle in heavy rain to National Sun Yat-sen University, and luckily I found out some useful materials at the library in the long run. (53)

In my group homepage, I was responsible for the pronunciation part which included vowels, consonants, stress, and homonymic puns. Materials of these categories could be easily attained in my textbook and in Mrs. Chang’s reading package.

FQA Exam

In addition to the group homepage composing on the language feature of Shakespeare, the students were required to answer two of twenty on-line questions on a class homepage over a ten-day period. The students were allowed twenty-four hours to answer their selected questions – they had to complete their answer on-line from nine a.m. one day to nine a.m. the following day; otherwise, they had to answer other questions on the class FQA homepage afterwards. From the students’ responses, it was found that the FQA exam generated feelings of pressure or panic in some students because of the time limitation.

“FQA” is not an effective way in taking examination in this way. It’s not effective from the aspect of the lacking of computers. Take my experience for example. I read the questions at night, prepared and composed the answers at midnight, then typed them before the due time, 9 a.m., next

morning. Even some of my classmates had to play truants in order to mail their answers in time. (33)

But the FQA exam was an inspiring experience for some other students. Some students even stated that they were excited about taking the exam using modern web technology. By taking the FQA exam in this way, they not only learned to read and write on-line but also learned to collect references on-line. Besides, they learned to think about their selected questions and answers deeply, and then went on to construct their own knowledge in a meaningful way.

It is exciting to answer questions in the FQA exam. I always tried my best to find out the answers as soon as possible; otherwise, the questions would be changed the other day. (11)

This is my first time to take an exam on Internet, which makes me realize the convenience and importance of modern technology. It also provides me with an opportunity to acquire more information on Internet. Besides, this on-line exam stimulated me to look into more references so that I would not memorize the knowledge in the text only. (46)

Network Skills

By integrating the network technology with linguistic study, this project helped students learn Shakespeare's language in the content area and it also encouraged students to make use of the web-composing software, the Netscape Composer, in a meaningful way. In addition to their learning of the language features of Shakespeare, the students made progress in certain network skills, including network browsing, homepage designing / composing, data search, file transfer, file linking, and on-line testing.

Through Internet, I could browse other groups' on-line projects and got some information about Shakespeare's language. This on-line project helped arouse my interests and alleviate my stress from exams. (22)

Designing a homepage had always been an interesting experience for me. From this on-line project I learned how to use some search engines on

Internet, though I had known how to operate WWW before. Moreover, I learned how to use FQA on WWW and how to divide a homepage into many frames. (26)

Based on the principle of task doing, the students learned to compose homepages by composing homepages. Though many of them had troubles with file transfers from Word (word-processing software) documents to hypertext documents, or in linking their group homepage files during the last two weeks of the project, they overcame their troubles by a process of asking for help followed by trial and error. Therefore, most students became experts in homepage composing, the FQA exam and other web technology. Because the teacher encouraged the students to visit other group homepages on the network, the students had chances to compare their own group homepages with others. The comparison inspired them to improve or polish their personal homepages in a creative way. And most of them had a sense of pride and honor after accomplishing their group homepages.

Cooperative Learning

In the project, almost everyone was responsible for one category of the linguistic study of the language of Shakespeare, such as pronunciation, grammar, semantics, vocabulary, idioms and wordplay. When all the study results were collected, the students started to compose their group homepages. Since this project required high group work, every student had to work with his group members compatibly in order to complete the group project. Because most of the students always worked together on the project at the university computer center, they got to know one another well and developed a high regard for team work.

Group cooperation makes our friendship closer. (15)

Communication and cooperation are important in the team work. It is important to share what you have, then you get more from others. (27)

There is a saying, “A friend in need is a friend indeed.” With the help of the problem solving sessions, some students not only had their problems solved in good time but also developed close friendships with others. On the other hand, those who helped others solve problems also received inspiring rewards; they enjoyed the

happiness of assisting their classmates or even their teacher, and they sharpened their skills in network operation.

Composing a group homepage for the required course took students a lot of time. Fortunately, two of my group members knew how to do it, which saved us a lot of time. (42)

For many of our group members, this is their first time to design a homepage. Nevertheless, I am glad to share my limited experience with them. By the searching, designing, and reading all the information in this project, we got together. I found myself enjoying the teamwork so much. (26)

In short, the homepage interaction inspired them to make good use of the network channels for mutual communication. Both computer-and-user and user-and-user interaction were beneficial.

Suggestions

Though many students developed higher level thinking skills as well as interactive communication skills in this project, there are still something to improve according to the students' suggestions and the teacher's observations during the instructional procedure. Generally, there are six significant suggestions in the student responses in terms of time, direction, symbolic expression, terminology and expectations.

If we could have more time to do such a tough work, we could do it well in terms of the form and the content of the group homepage. (23)

The teacher had better give us more directions about how to get the latest information on Internet or other channels. (23)

There were no phonetic symbols “ ε ” and “ θ ” on the Netscape Composer software. Therefore, I had to write them on a piece of a paper and scanned the symbols as images. After that, I inserted the two phonetic images into appropriate places of my homepage. It was so time consuming. (13)

As far as the time for the project is concerned, one student expressed that it was too limited. Maybe the teacher can prolong the time for the project; maybe five or six weeks for the project will be ideal in future studies. Of course, during a longwe-term project, a teacher still has to guide students to complete the on-line project step by step. Then one student suggested the teacher give the students more direction for accessing the latest information on the Internet or other channels. Based on constructive language teaching, the teacher provided the students with learning prompts during the project. She hoped that the students would identify certain research problems and solve the problems by themselves. Then she would give them some advice or help if necessary. In this project, the teacher did show students how to do on-line data collection, file transfer, file linking, homepage browsing, and homepage composing through demonstration and handouts. After that, she encouraged students to do them by themselves in and out of class during the project. According to the students' on-line responses, it seems that some students could carry out the group project with ease, but others only with difficulty. The causes of the differentiation may be attributed to different levels of computer literacy or a different amount of time spent on language study during the project.

As to symbol expression, some students had difficulty posting special phonological symbols, such as “ ε ” and “ θ ”, to their group homepages. Most of them scanned the symbols as images, then they inserted them into appropriate places on their group homepages. To improve this laborious task, some phonetic computer software should be supplied on the network. Or some computer experts should offer selected help to the students.

One student challenged the terminology, *idiom*, as applied to the study of the language of Shakespeare. She thought that idioms were less popular than quotations in Shakespeare studies. In fact, she found little information about idioms, but a lot of information about quotations of Shakespeare on the network. Therefore, she suggested the teacher change the term *idiom* into *quotation* for this project. Actually, there was some information about Shakespeare's idioms in certain printed references, such as those of Baugh and Cable (1978) and Andrews (1985). Yet, there is more information about Shakespeare's quotations in both printed references and on-line references. Maybe there is a need for more communication between the student and the teacher. If the teacher had informed the student of available references, the student might have carried out her study in an easier way, and thus had more time for other concerns. In addition to the network skills, one student thought about the benefit

of distance education or homepage-assisted instruction. He suggested that teachers make better use of them in their instruction.

CONCLUSIONS

From the discussions of the student responses to the interactive homepage project which was designed for a content area study of the language of Shakespeare, the findings of the project were productive. The students not only learned about the subject of the content area based on the six linguistic aspects: pronunciation, grammar, semantics, vocabulary, idiom, and wordplay, but also committed themselves to material adaptation and development. Interactive communication via the group arrangement for constructing homepages helped stimulate the students' interactive interest – the desire to complete tasks through not only individual work but also team work.

Based on the tasks assigned, many students learned to do this linguistic project by becoming preoccupied with the project, learned to compose a group homepage by actually composing a group homepage, and learned to take an on-line exam by taking the on-line FQA exam. In other words, they developed their linguistic knowledge, literacy skills, network knowledge, network operating skills, and interactive skills in a definite content area – the language of Shakespeare. Most of the students in this project viewed their learning in a new way, from the perspective of truly contextualizing their lesson by using content as the point of departure. With their investment of time and energy to create a content-based language homepage and to take the on-line FQA exam, the students showed even greater responsibility for their academic project and received greater rewards.

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銜接莎士比亞語言學習及網際合作學習

由於網際網路的普及迅速發展，促使線上資源充裕及即時互動之英語學習熱絡發展，並提供學習社區，使有共同興趣及需要者相互溝通，互相協助，達成互助互惠之虛擬學習社區。為探討網際合作學習如何在大學部專業英文課「英語語言史」之應用，筆者特別選擇莎士比亞之語言研究，作為一班大三學生之研究計劃。計劃中特別針對莎士比亞使用語言中之發音、文法、語意表達、單字、慣用語及文字遊戲做深入之探討，並分析大三學生參與內容導向式學習及合作學習之心得及建議，以作為教師使用網路輔助內容導向式研究之參考。

Connecting Shakespeare's Language Learning and Cooperative Learning On-line

Due to the wide spread and rapid development of the network system, the on-line resourcefulness and immediate interaction make English learning possible across time and space boundaries. In a learning community, users with similar interests and needs will communicate with one another and even help one another. Consequently, they benefit one another in a virtual learning community. Based on the author's interest in the interactive function of the homepage and cooperative education, an interactive homepage project was designed in a content-area study of the language of William Shakespeare. The project was designed for a junior-level course, *The History of the English Language* at a university. In this project, every group of students had to compose a group homepage on the same basis of six linguistic categories: pronunciation, grammar, semantics, vocabulary, idioms (or quotations), and wordplay. The project included not only group homepages featuring the language of William Shakespeare's works but also an on-line exam for the course. In addition, the student responses and suggestions for the content-area learning and on-line cooperative learning are analyzed and discussed. Hopefully, the study findings may provide English teachers with a reference for alternative web-assisted English instruction in the content area.

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拼圖式英語課程軟體設計及應用：以節慶課程軟體為例

The Design and Application of English Courseware in a Jigsaw Model: A Case Study of e-Holidays Courseware

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Abstract

Language learning has been regarded as a regular and ongoing interaction between the learner's mental abilities and the linguistic environment currently (Doughty & Long, 2003). The interaction between the learner and the auditory and visual environment created in the on-line language learning courseware context may facilitate the second language acquisition process. Thanks to the interaction, the socio-cognitive actions in the courseware composing make the learning mode concrete and turn it into a new leaf, just like unscrambling of pebbles for a mosaic, picture-wearing silk for a tapestry, recycled clothes for a quilt, or even web pages for a jigsaws.

To provide students with interesting language learning material, the researcher organized an e-holiday project (<http://e.nknu.edu.tw>) in a jigsaw model. One class of graduate students who took the course of Media and Language Teaching (herein media-19) were assigned to compose courseware on e-holidays. In the instructional design of the courseware on e-holidays, ten items were covered: (a) a dialogue, (b) a story, (c) vocabulary, (d) Structures, (e) three traits, (f) hot links, (g) guessing games, (h) forums, (i) tests, and (j) an activity. After analyzing the written responses to the e-holidays courseware, the advantages and limitations of courseware-assisted language instruction were explored and discussed.

With the promotion of e-learning in this e-age, many people go back to college to learn computers and their applications. However, not every student has good computer literacy in terms of his/her concept, skills and attitudes toward computer operation. To deal with the problems, many teachers apply cooperative learning or jigsaw learning in their instruction. Jigsaw learning was first developed in the early 1970s by Elliot Aronson (1978) and his colleagues at the University of Texas and the University of California. Just as in a jigsaw puzzle, each piece--each student's part--is essential for the completion and full understanding of the final product in jigsaw learning. "If each student's part is essential, then each student is essential; and that is precisely what makes this strategy so effective" (<http://www.jigsaw.org/history.htm>). In a jigsaw model, specific subject area content, processes, or information is divided so that instructional, collaborative groups can be formed.

A lot research studies in different content areas have shown that the jigsaw cooperative learning made each student responsible for teaching some of the material to the group (Aronson, 1978). Dori (1995) found that the jigsaw method helped promote academic achievement in learning English. Wilson (2004) claimed that student teachers or student experts learned 85-95% of what they teach others. In addition, jigsaw learning encourages the development of communication skills between students (Su, 2000, Wei, 2000). It also brings lessons to life in the jigsaw approach. Bafie (2007) used the jigsaw learning method to cover a large amount of material quickly, to introduce students to different perspectives on a topic, and to create interest. Therefore, it is optimal for teachers to apply the jigsaw learning model in instruction.

Applying a Jigsaw Learning Model in Courseware Composing

To many English teachers, the high-quality content of English teaching materials is essential for successful English instruction. However, they may frequently spend a lot of time preparing redundant or even duplicating teaching materials. To deal with the problem, teachers are encouraged to work together in preparing, composing, or using the teaching materials in a jigsaw model. "By combing the effort of a set of content providers at a given website, share repository can be formed. Each content provider can then draw on specified content from this repository to accomplish a give task" (Yang, Tsai, Lin & Lin, 2003, p.25). By applying a jigsaw learning model in courseware composing, teachers can contribute their ideas and experiences to the repository of a courseware platform, they also can get feedback from the others. So they can make the best use of the resourcefulness of English teaching materials on-line.

In e-learning ecology, the learning management system (LMS) and the learning

content management system (LCMS) are applied to help learners and content respectively. The LMS primarily focuses on learning competencies, learning activities, and the logistics of doing learning activities. As for the LCMS, it emphasizes the logical management of forms of small, self-describing, uniquely identifiable objects or learning objects (Yang, Tsai, Lin & Lin, 2003). Though they have different focuses, both the LMS and the LCMS can be applied in jigsaw learning. On one hand, students can share units of a selected theme or topic to compose courseware in the LCMS; on the other hand, they can consult or help one another in dealing with computer skills in the LMS. After the courseware composing, they also can share with one another their comments and perspectives on-line. Then, they can open an alternative window on English learning material composing and application.

Enrichment of the Courseware on Culture

Culture and language are two sides of a coin; they are inseparable but reinforce each other in the human life. Take Christmas symbol as an example. The food *kutya* is eaten from a common dish to symbolize unity in Russia, and hay as well as sugar are prepared for the horse of St. Nicholas (or *Sinterklaas*) in the Netherlands (<http://www.the-north-pole.com/around/>). The key words of *kutya* and *Sinterklaas* show the special food and distinguished person in two countries, which show the mutual values of culture and language. According to National Standards in Foreign Language Education Project (1996, p. 27), “through the study of other languages, students gain knowledge and understanding of the *cultures* that use that language; in fact, students cannot truly master the language until they have also mastered the cultural contexts in which the language occurs.” Krashen (1999) approved the notion that language use must be associated with the other appropriately cultural behavior. Thanks to the association of language with the shared social memory of a common past, people feel that they belong together like a family. Later on, they develop senses of belong, identity, and even responsibility.

Similarly, the computer culture and computer language in this electronic age (e-age) are two sides of a blade; they are interdependent and reinforce each other. Currently, it is not so weird for *docom* people to *e-mail*, to *blog*, or to *google* some messages on the Internet. But it may be strange for *nondocm* people to do so. Fortunately, the computer culture and computer language can be explored and learned if people have the chance to get to know them and learned them. In an e-paling project between National Kaohsiung Normal University and University of North Carolina-Charlotte, Chang (1992) found a contact of three dimensions of language and culture in terms of American language and culture, Taiwanese language and

culture, and even computer language and culture. Specifically, both American and Taiwanese students explored a new dimension of language and culture other than their native ones in e-paling, which helped them know the possibility of language learning and human communication across the class boundary, the national boundary as well as the cultural boundary.

Constructivist Pedagogy & Cultural Pedagogy in E-Learning

In order to help students learn multiple dimensions of language and culture, a lot of on-line resources and media have been applied. To reinforce the use of on-line resources and media, constructivism is often considered the ideal pedagogy for e-learning. Paurelle (2007) highly recommended constructivist pedagogy to learners in e-learning because of the following benefits:

1. The learner is the centre of learning rather than the tutor.
2. Knowledge is built and applied according to individual experiences.
3. The learner needs to take responsibility for his learning.
4. The learner is an active participant in their learning experience
5. Learning is a social experience, hence dialogue and collaboration are crucial.

In an e-learning environment, the learner may not over-depend on the tutor's lecture, but on peers' interaction and negotiation. They have to always think of what to study, where to study, how to study and with whom. Therefore, the learner becomes the centre of the learning process. In addition, e-learning enables content-based, work-based learning. When learners involve themselves in the e-learning situation, they build their knowledge and construct their learning schemata. As well, e-learning helps reinforce learning autonomy (Thanasoulas, 2002) by searching information or by expressing opinions in forums. So students tend to be responsible for their own on-line tasks. To be specific, when they can record and reflect upon their learning in some on-line or off-line projects, they become active learners. When they exchange information with others on-line (in chatting or forum application) or off-line (in e-paling or blog application), they achieve the dual purposes of communication and social development. Therefore, constructivist pedagogy is crucial in e-learning.

However, Weller (2002) found some constraints in constructivist pedagogy:

1. Constructivist pedagogy lacks visual clues.
2. Students' learning styles are varied.
3. Constructivism does not suit all learning topics.

To illustrate, constructivist pedagogy does not provide a lot of visual clues for students, such as written prompts or animations. The written prompts refer to the instructional design, while animations refer to the interface design of some courseware in e-learning. Doughty and Long (2003) pointed out the importance of

application of on-line language learning courseware in the interactive relationship between the language input and the learners' innate learning mechanisms. To deal with the problem of constructivist pedagogy, appropriate instructional designs and interface designs have to take into consideration. In addition, students' learning styles are varied. Brown (1993) classified learning styles into five types (pp.105-113). In a cooperative learning classroom, for instance, a field-independent person may not be happy working cooperatively with a field-dependent person, or a reflective person may not like to work with impulsive person. Therefore, teachers have to think of some strategies to stretch their students' learning styles in order to make students happy to accept others and then work with others. Last but not least, not every topic can be taught constructively. For example, teaching of speech or homepage composing may be more effectively by teachers than by assistants. As a result, the constraint of constructivist pedagogy has to be taken into consideration in curricula.

In many aspects, cultural pedagogy support e-learning. Wolterbeek (2004) claimed that cultural pedagogy helped students see that knowledge is value dependent, culture dependent, and changeable. So schools must encourage and assist students to engage in general theorizing about reality and life. Ruth (2001) suggested teachers use advertisements to convey a kind of cultural pedagogy and curriculum. In addition to persuading customers to purchase some products or get some service, Ruth (2001) claimed that advertisements in cultural pedagogy produced "values and knowledge, regulate behaviors and ways of being, re-produce identities and representations, constitute certain power relations and teach ways of being either a woman or a man, forms of either femininity or masculinity." (p.1) Therefore, students can learn some features and values of advertisements in cultural pedagogy and put the theory into practice in their daily life. Thanks to the global nature of the Internet, the use of **a discussion board, a blog, a flickr** or the other network systems help implement cultural pedagogy. Take the holidays or festivals for instance. In doing a co-project online or a forum discussion, students can share similar or different ideas, gain new relevant knowledge and develop friendships with others across the culture, time and space boundaries. Many terms in holidays or festivals show bountiful ideas, behaviors or products in different cultures, such as *floating paper dolls in rivers in Girls' Day, the milky way on The Night of Sevens in China, eating turkeys on Thanksgiving Day in North America*. What is more exciting is that the use of hyperlinks within web-based resources, such as **wikipedia** or **compedia** allows learners to journey on a process of discovery.

Though there are a lot of benefits in teaching culture, there are some constraints in it." Valdes (1986) referred culture constraint to **cultural chauvinism** implying that the new comer might abandon the culture of origin in favor of the values and customs

of the host society. Robertson and Martin (2000) referred culture constraint to post-colonialism in which race, ethnicity, culture, and human identity itself were represented in the modern era, after many colonized countries gained their independence” (<http://www.enotes.com/postcolonialism/>). In teaching, teachers had better not adjust a student to a specific culture. Take teaching of the Thanksgiving holidays as an example. Teachers cannot over-teach students Pilgrim’s exploding muskets and blaring bugles or Indian prowess with bow and arrow, which seldom happened on Thanksgiving in Taiwan but in North America currently.

A Framework for a Courseware Composing in a Jigsaw Model

In order to help college students in Taiwan get to know their native culture and foreign cultures better and to enrich their English learning in a virtual classroom, an electronic holidays (e-holidays) project has been conducted. On the basis of strengths of constructivist pedagogy as well as cultural pedagogy, it is optimal to teach students holidays with computer operating tasks. By discussing the future and meaning of some selected holidays, students may not over-depend on the tutor’s lecture, but explore the selected holidays by themselves. Then they may know what to study, where to study, how to study and whom to study with. Step by step, they may construct their ideas about the holidays. By composing some vocabulary homepages or test homepages on holidays in a jigsaw model, students may know the homepage composing skills in the content area of holidays. Finally, by referring to the others’ students’ e-holidays courseware on-line, they may learn some other e-holidays or courseware composing skills. Hopefully, their computer literacy will grow up with their cultural literacy in this project.

To put the theory into practice, the researcher teacher (herein the teacher) invite 25 graduate students to join the e-holiday project in the fall section of the course of *Media and Language Teaching*. After attending the course of *Media and Language Teaching* for 12 weeks, the subjects had learned some basic skills to compose homepages and on-line tests by means of Microsoft FrontPage composer. *In week 13th, the subjects were assigned 25 holidays or relevant cultures to compose individual courseware as their final project.* The holidays range from Tainese holidays (such as Mast Festival in Miao-li Providence and Lotus Festival in Tainan) to foreign holidays (such as Thanksgiving in North American or Girl’s Day in Japan). All the students had to publish their holiday courseware to the required platform in Week 18 at the end of the semester. So totally, it took six weeks for the subjects to conduct the e-holiday project.

In order to save time for script design and interface design, the teachers provided the subjects with a script model in the file type of Word documents and with a

courseware model in the file type of html (Hyper Text Marked Language). She also provided the subjects with two platforms for courseware publication; one is the LINEX platform (<http://140.127.60.124/engstu/chagn-1/media-17/media-17-home.htm>) for publishing html files and the other is the Wisdom platform (<http://e.nknu.edu.tw>) for publishing php files.

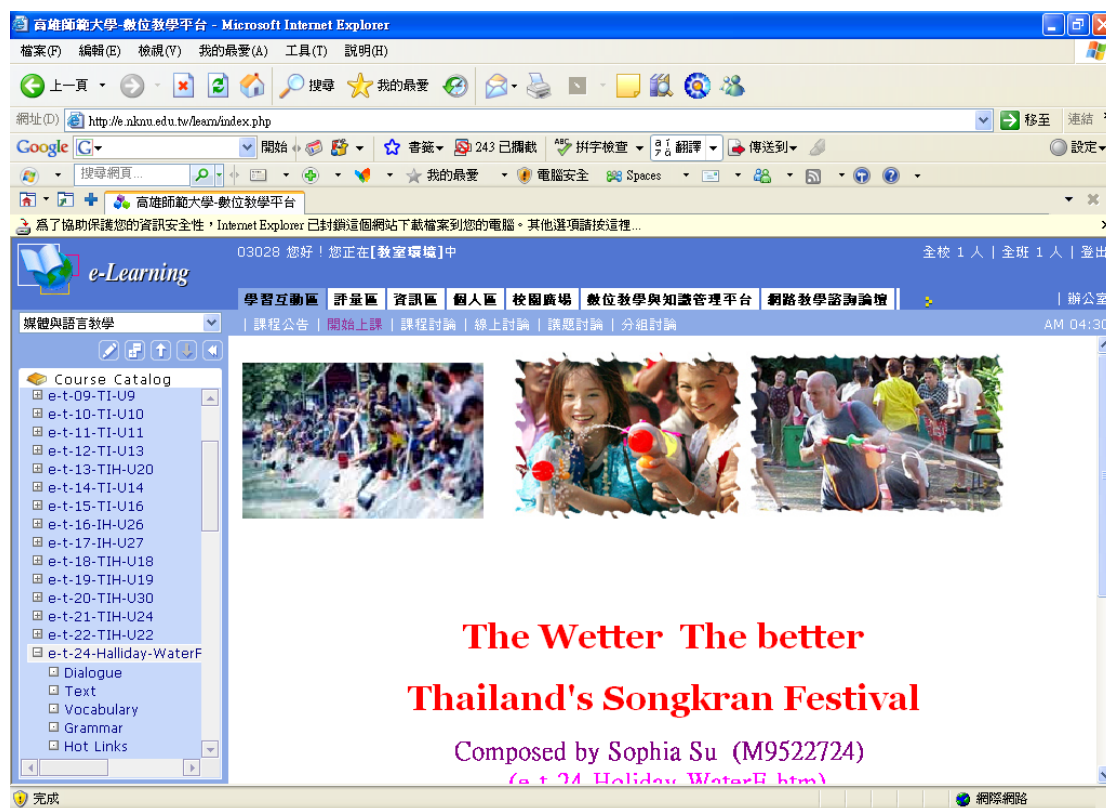


Figure 1 The Wisdom platform (<http://e.nknu.edu.tw>)

The two platforms were programmed in different computer languages, thus they provided different functions for users; the former is to display one-way html files, but the later is to display two-way user-and-compute interaction in on-line tests as well as multiple-way user-and-user interaction in on-line forums.

To make the interface design easy to operate for every student, the teacher require every student to compose ten basic homepages for ten items. The ten items include: (a) the dialogue, (b) the story, (c) vocabulary, (d) structures, (e) three traits, (f) hot links, (g) guessing games, (h) forums, (i) tests, and (j) activity. To be specific, the float chart of the interface design was formed in Figure 2:

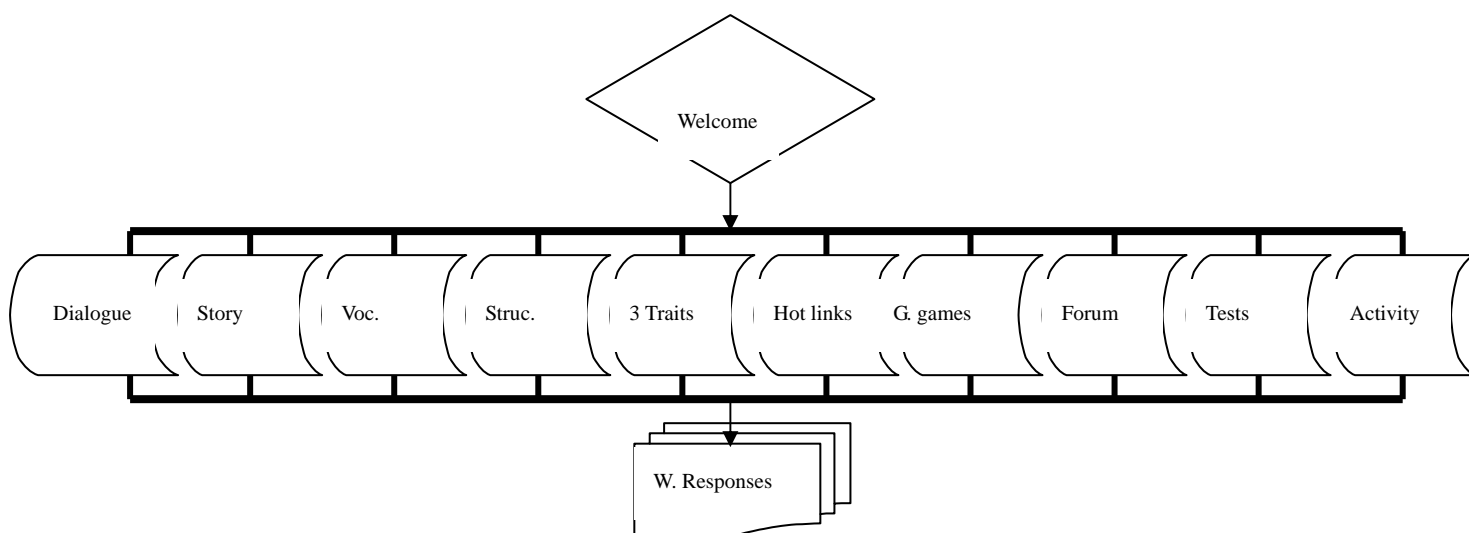


Figure 2. A Jigsaw Learning Model of the Courseware Design

The features and sample page of each item of Figure 2 are referred to Appendixes a and B. After the subject published their courseware to the assigned platforms, they also publish their comments and suggestions to the LINEX platform. According to the comments and suggestions, the teacher assessed their learning difficulties and progress in this e-holiday project.

Findings of the Project

From the students responses to the e-holidays project, it was found that most of the students liked the jigsaw learning models in terms of the courseware design as well as the pedagogical design. To illustrate, the students made some comments and suggestions for the courseware design, including the instructional designs and the interface design. They also do them for the pedagogical design ranging from the antonymous learning and cooperative learning. Following the natural inquiry, some students' written responses in their final reports for the project were sampled and interpreted.

Student Responses to the Jigsaw Learning in Courseware Composing

In an constructivist e-learning environment, students may not over-depend on the tutor's lecture, but on peers' interaction and negotiation. After composing their courseware with multimedia, most of the subjects showed positive responses to the jigsaw learning as follows:

It is a quite good idea for me to use this Widsom Platform because we can put our courseware materials on it together. (S-17)

The final projects (e-holiday project) of this class is a collaborative effort of all the students. (S-1)

From the above extracted response, it shows that S-17 appreciated the way to put his classmates' courseware materials on the platform together. Every courseware material played the role of a piece of jigsaw. After all courseware materials were put together, they became a beautiful picture. S-1 also agreed that the final project of the class, Media-17, was a type of collaborative work on the e-learning platform. Many hands make light work. As a result the co-project was accomplished in six week in this study.

Student Responses to the Jigsaw Learning in Social Interaction

"Two heads are better than one." has been carried out successfully in this project. Although this cultural project was an independent assignment, the subjects still worked hard with their classmates as a team. In addition to learning courseware composing skills, the students also developed socially interactive skills. Take S-27, S-28, and S-21's response as examples.

I was not good in javascripts. Therefore, at the beginning, I asked for my classmate who major in javascripts for help. Then, another classmate taught me how to upload the files and edit tests on the Internet. Thanks for them, I carried out my project finally. (S-27)

My happiness is not only on achieving my project but helping other classmates to do their job. I understand sincerely that helping others is the happiest thing in the world and I am proud of it. (S-28)

In this project, some of us shard the good methods and difficulties of doing this assignment. In this way, we developed personal responsibility as well as creativity. (S-21)

From the above extracts, we can see that S-27 showed his needs in his classmates' help in javascript editing, but S-28 showed his pleasure in helping others. Though

they had opposite tasks in the e-holiday project, they were aware of the strong human interaction whether to ask for help or to give help. As result, the students' progress was achieved in cooperative learning. In pedagogy, students tend to get peers' identity by achieving a group task together rather than to learn the target language (Rigg & Hudelson, 1986). The performance of the subjects in this study showed their needs in accomplishing assigned tasks together in cooperative learning.

In addition, S-21 confirmed the value of the development of personal responsibility as well as creativity through sharing good methods and difficulties of doing the assignment. The subjects in this study showed their desire to take two responsibilities. On one hand, they were highly involved in the project. On the other hand, they showed their creativity in courseware composing. When the subjects asked their classmates for help in composing webpages (Urban, 1990). they got good opportunities to see their partners' works and learned their experiences. Whether their partners' works were better or poorer than the subjects, the subjects would try to do their best with imagination or even creativity. When they learned from one another, they develop social communication skills. Through the back and forth communication, they cultivate closer friendships.

3. Student Responses to the Instructional Design of the Courseware

On the basis of content-area instruction, it is important to compose or select appropriate teaching materials for learners. In order to prepare optimal teaching materials for college students in Taiwan, it is important to organized the content with interesting holiday stories, interactive vocabulary grocery, relevant on-line references interactive assessments as well as multimedia effects. To achieve the purposes, ten special instructional items were designed for the e-holiday project, including (a) the dialogue, (b) the story, (c) vocabulary, (d) Structures, (e) three traits, (f) hot links, (g) guessing games, (h) forums, (i) tests, and (j) activity. Each of the items has unique features, which can be referred to Appendix A. After composing their courseware with multimedia, most of the subjects showed positive responses. For instance, the S-5 highlighted her comprehension or understanding of the design of vocabulary webpage, and S-12 showed his appreciation of the instructional design of his story webpage or that of his on-line test webpages of the e-holiday courseware as follows.

To give tests on the assigned holidays, we immersed into each part of the article to clarify all the vocabulary, definitions and examples by connecting to on-line dictionary and relevant on-line articles to learn more information. Though this was not an easy task, all this process elicited our comprehension of the whole

project. (S-5)

The information on-line is abundant. I think learners can get a lot from it by browsing the e-texts or taking on-line tests. (S-12)

Since the content of the e-holiday courseware was abundant, S-12 could optionally choose the courses that were suitable or interesting to him. In addition to the language aspects of reading, S-5 and S-12 some other students elaborated their positive responses from the cultural aspect. Take S-2's and S-3's responses as examples:

This cultural project provides a good opportunity for us to understand different cultures in the world. For example, there is Water Festival in Thailand, Girl's Day in Japan, Mask Festival in Miaoli, etc. Classmates introduced their topics elaborately. By browsing my classmates' projects, I could obtain the knowledge regarding diverse cultures. So it is an interesting project and also broadens our view. (S-2)

I admired the additional festivals for the project, such as Paiho Lotus Festival or Miaoli International Mask Festival in Taiwan. (S-3)

In order to help students get the window on the world, both native and non-native cultures were selected for this study. Because of time limit for courseware composing for the subjects, twelve Chinese holidays (or festivals) and twelve foreign holidays (or festivals) were selected in this project. In terms of Chinese holidays (or festivals), there are *Mask Festival in Miaol* or *the Lotus Festival in Paiho* for instance; while the *Water Festival in Thailand* and the *Girl's Day in Japan* were representatives for foreign holidays (or festivals) in the e-holiday courseware composing project. Nevertheless, the subjects developed their content areas in the assigned holidays before, during, and after courseware composing which is in accordance to the procedures of content literacy (<http://www.literacymatters.org/content/readandwrite/reading.htm>). Before composing the courseware, the subjects draw on their prior knowledge, set a purpose, and anticipate questions. They even jot down their drafts of the ten instructional items of the e-holiday project, including (a) the dialogue, (b) the story, (c) vocabulary, (d)

Structures, (e) Three Traits, (f) Hot links, (g) Guessing games, (h) Forum, (i) Tests, and (j) Activity in the word processing system. During composing the courseware, the subjects annotated some English words and context clues which might be difficult for college students. After composing the courseware, the subjects double checked the definitions for key words or answers to the on-line tests. Some of them even browse their classmates' courseware and then showed their appreciation as S-2 and S-3 did. Moreover, S-25 expressed that his partners could develop higher-level skills in thinking. His idea was inspiring as follows:

Through collecting others' opinions, ideas and skills, a learner hence developed higher level of skills in thinking, including problem-solving, in computer network software and in communicative literacy. Most importantly, they improved their target language abilities because of frequent skill-sharpening in listening, speaking, reading and writing when dealing with back-forth correspondences. (S-25)

From the above the extract of S-25, we can see that in the content area learning of e-holidays, not only S-25 learned some skills in term of network operation but also higher-level skills in thinking including problem-solving in and in communicative literacy. After all, the cooperative learning in the present project encouraged participants to make good use of network channels for mutual communication. Both computer-and-user and user-and-user interaction were beneficial in computer network software and in communicative literacy.

Nevertheless, not every subject was satisfied with the instructional design of the courseware. S-10, for instance, had difficulty in searching reading comprehension questions for his on-line tests because of his non-educational background. He found that it was neither easy to understand each cultural activity nor efficient to edit an educational material for further learning. Furthermore, S-12 complained that it was time-consuming to find appropriate materials to decipher and describe each cultural project. Due to the difference in career background and training in the graduate program of applied English, the same requirement for each of the subjects in this project has to be taken into careful consideration.

4. Student Responses to the Interface Design of the Courseware

One of the benefits of computer-assisted learning is interaction. By means of user-and-user communication by e-mail or by forum, users can get feelings and thoughts of their respondents. By contrast, they can give further responses to their respondents by sending textual files or multimedia files. Once they deal with their messages by means of the user-and-computer interaction, users can operate the interface system. Thanks to the design of high interaction, users of the Internet system can get immediate feedback for their own feelings and thoughts. In addition, users can choose something interesting to study in the courseware and control their own learning. In this way, users know not only how to control their own learning pace but also how to learn something effectively. Therefore, a good interface design is important and necessary.

The interface design of the e-holiday courseware includes a lot of multimedia effects as follows:

1. the mouse-over sounding design for the vocabulary webpage,
2. the pop-out-window design of definition for the story webpage,
3. the sound insertion design for the dialogue webpage,
4. the scroll-down-frame design for the guessing game webpage,
5. the on-line reading and writing design for the forum webpage, and
6. the on-line questioning-and-assessing design for the test webpage.

Though it was not easy for a programmer to write the computer scripts for the interface design, it was not difficult for the subjects to adapt the scripts according to their assigned topics. Thanks to the permission of the copyright of the scripts of the programmer, Mr. Mike Chen, the subjects had accesses to adapt the scripts to compose interface designs of the teacher researcher's e-holiday courseware in the Wisdom platform. Usually, showed the subjects how to adapt the scripts in the Wisdom platform in classes of Media-17.

After collecting and generalizing the subjects' written responses in their final reports for the course, media-17, the researchers found both positive and negative student responses to the interface design of the e-holiday courseware. To begin with, S-11, S-13, and S-16 show their findings of the values of the data-base platform, Wisdom, for composing their courseware as follows:

This (Wisdom platform) is quite user friendly. For learners, users can learn reading, listening and grammar on the platform any time. The structure of the interface is orderly arranged. Each section is easily to find and work. (S-11)

The platform allows users to put multimedia materials on line, such as sounds, music, pictures, animations, videos, and even JavaScript. (S-13)

I am fond of the difference in color of the interface (It is blue for learner's interface and green for designer's interface.). Different colors make the users understand which interface they are operating and avoid causing confusion. (S-16)

Though the computer language of the Wisdom platform is php, the htm language or the asp language can be accepted and operated in the platform. Before the mid-term project, all the subjects had computer literacy in homepage composing by means of the htm language. What they needed further learning in this project were publish their webpages to the new website of the Wisdom platform, and then to make appropriate links to the platform. Specifically, the interface is well-structured arranged, so each section was easily to find and worked as confirmed by S-11. Essentially, wisdom platform is object-oriented; it is easy for users to get what they see and to see what they get in the platform. Since the structure of the interface is orderly arranged, it was easy for S-13 to find the links and to operate them. In addition, the design and color of the interface looked comfortable and was easy to find what they want. So S-13 expressed that he could easily shifted the classroom interface to the office interface in the platform. After all, most of the user-interface designs of the program were vivid and easy to learn.

As for the negative student responses to the interface design, most of the responses can be attributed to the factors of limit time for courseware composing (S-14), no on-line menu of homepage composing (S-16), and the non-stability of the Wisdom platform (S-13 and S-18) as shown in the following extracts:

I had to delete the old files first and then I could upload the new files. Of course, it took me a lot of time. (S-14)

Wisdom platform is wise, but I am stupid. . . . The process of composing a courseware is a tough task to me. The steps are complicated. I spent plenty of time to fight with these pages. (S-16)

The voices and pictures can't show up simultaneously. Users might get upset because the result (of the interest development)) is not expected. (S-13)

The stability of the user-interface is not. For instance the four types of English tests often don't work well. In addition, the capacity of ftp can be expanded to solve the serious problem of heavy-downloading. (S-18)

Generally, the Wisdom platform is under development and testing during January ~ July, 2007. The non-stability of the telecommunication system and the limited ram resulted in the traffic jam in file transferring and browsing. Since not every student understood the problem of the hardware and the software operation of the Wisdom platform, they needed helps in system operation as well as technology guidance.

On the basis of the students' comments on the instructional design and the interface design, some suggestions were made by the students. To make the suggestions easy to read and discuss, the researcher classified the suggestions by type in terms of (a) team work, (b) sharing, (c) simplifying teaching procedures, (d) reinforcing cooperative learning, (e) computer literacy, (f) nature of users/students, (g) providing a user's menu, and (h) prolonging time for courseware composing. Though there is a lot of room for improvement in the courseware composing in this e-holiday project, it shows that the subjects really cared about the instructional design and the interface design of the courseware, their meaning constructive processes, and even social interactions. If had have gotten some feedback from their classmates in class discussions or reports on their feedback from the e-holiday project, they would have composed their assigned courseware in an easy and meaningful way. Then, they will be more inspired to operate the courseware.

Conclusions

On the basis of the qualitative data analysis, five study findings were generalized. To begin with, the subjects showed a lot of positive responses to the jigsaw learning in courseware composing. To be specific, most of the subjects liked the jigsaw learning in social interaction. They also liked the instructional design of the courseware. But many of them did not like the interface design of the courseware because it was complex. To make the project better, some subjects made practical suggestions for the jigsaw learning in courseware composing in the domains of the instructional design and the interface design of the courseware.

Johnson and Johnson (1982) indicated that the cooperative learning could help lower the anxiety of learning, provide opportunities to be involved in group activities, and encourage communication between individuals and groups. In this e-holiday

project, the effects of social communication of the students were approved.

Implications

Derived from the study findings and the relevant rationales, some pedagogical implications were generalized. First, the jigsaw learning model can be applied in the real classroom teaching and virtual classroom teaching. It also can be applied in different content areas other than e-holidays. When students were more familiar with an instructional approach, they became confident in seeking out information, reflecting on their knowledge and sharing their views through written text with others (Paurelle, 2003). Furthermore, teachers have to give students appropriate time to compose courseware and publish them to the network. Last but not least, the project is needed to keep the file transmission efficiently in the platform.

The group objective can be achieved and the peer identity as well as friendship can be developed in the e-holiday project. Doughty and Long (2003) assumed that language learning as a regular and ongoing interaction between the learner's mental abilities and the linguist environment. The interaction between the learner and the auditory-and-visual environment created in the on-line language learning courseware context may facilitate the second language acquisition process. Thanks to the interaction, the socio-cognitive actions in the courseware composing make the jigsaw learning mode concrete and turn it into a new leaf, just like unscrambling of pebbles for a mosaic, picture-wearing silk for a tapestry, recycled clothes for a quilt, or even web pages for a jigsaws.

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<http://candle.cs.nthu.edu.tw/totalRecall/totalRecall/totalRecall.aspx>

Helpful Websites:

Vocabulary Generator: <http://140.127.41.55/chang-1/tttt/test1.asp>

Courseware: <http://140.127.60.124/engstu/m/workshop-project/u-01/home.htm>

Forums: <http://140.127.41.55/chang-1/tttt/index.asp>

Appendix A

Ten Items of An e-Holiday Courseware

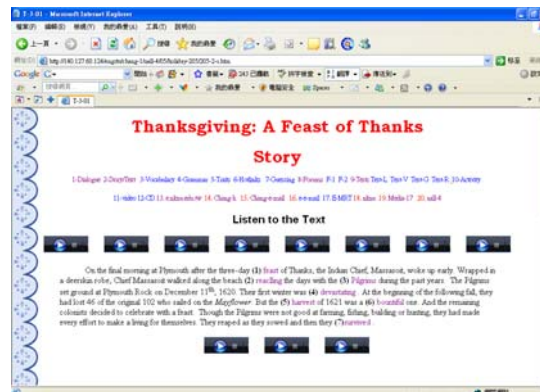
| Items | Features | Homepage names |
|---|--|--|
| 1. Dialogue (with video) | Edit an English dialogue about the assigned holiday with sound effects. | ID-1-e.htm |
| 2. Story (with textual and audio effects) | 1. Compose a story about the assigned holiday with pop-out grocery boxes. 2. Edit a story homepage with some images or animations by referring to the following websites. a. Holiday image Bank (C) http://sbsd.psjh.cy.edu.tw/pic/hday/hday1.htm b. Image Bank for all Purposes (C) http://sbsd.psjh.cy.edu.tw/pic/mala/mala.htm c. Image Bank for all Purposes (E) http://web.uvic.ca/hcmc/clipart/ | ID-2-s.htm |
| 3. Vocabulary | Compose 20 vocabulary words with their definitions and usages. Edit the vocabulary with sound effects. | ID-3-v.htm |
| 4. Structure | Introduce 2 key structures of the text. http://grammar.ccc.commnet.edu/grammar/index2.htm | ID-4-g.htm |
| 5. Three Traits (or symbols) | Present three traits of the assigned holiday: Trait 1 is about special foods. Trait 2 is about special activities. Trait 3 is about special ideas (such as beliefs, values or institutions) | ID-5-t.htm |
| 6. Hot links | Compose three hotlinks at least about the assigned holiday. A brief introduction to each of the hot link is expected. | ID-6-h.htm |
| 7. Guessing games | Design 10 questions in the games are expected. | ID-7-gg.htm |
| 8. Forums | Create two issues about the assigned holiday are expected. | ID-8-f.htm |
| 9. Tests | Design 40 English test questions: 10 listening questions (20%) 10 vocabulary questions (20%) 10 grammar questions (20%) 10 reading comprehension questions (40%) | ID-9-t-l.htm ID-9-t-v.htm ID-9-t-g.htm ID-9-t-m.htm |
| 10. Activity | Write a lesson plan on the assigned holiday | ID-10-a.htm |

Appendix B

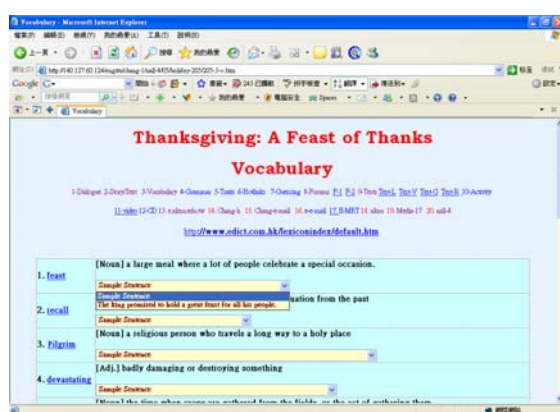
Sample Homes on the Thanksgiving Holiday



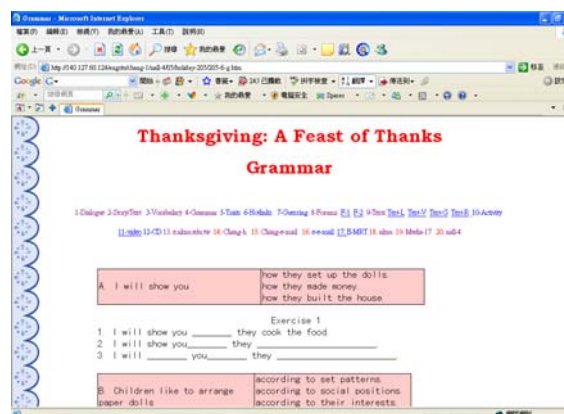
(a) A Sample Page of the Dialogue



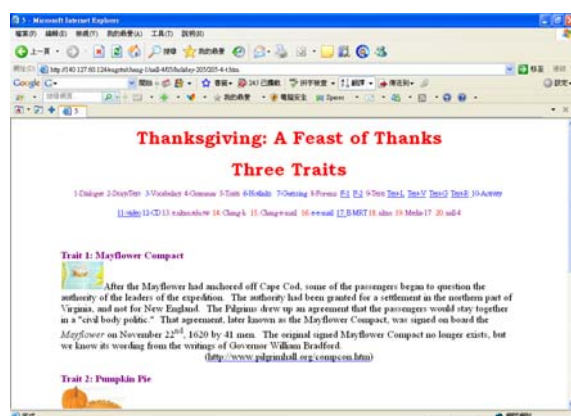
(b) A Sample Page of the Story,



(c) A Sample Page of Vocabulary



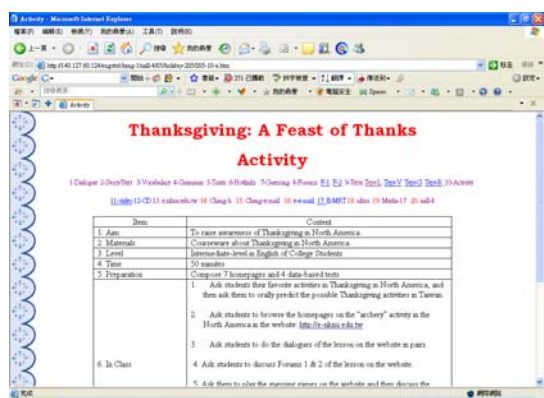
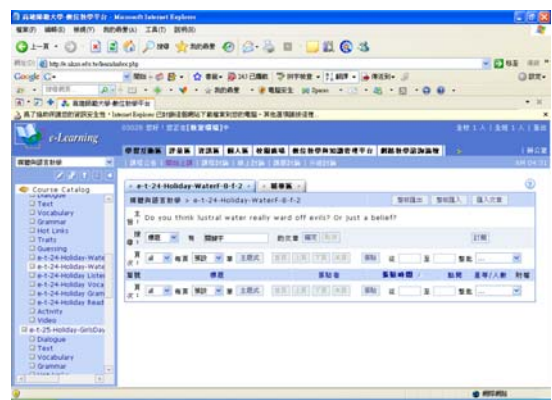
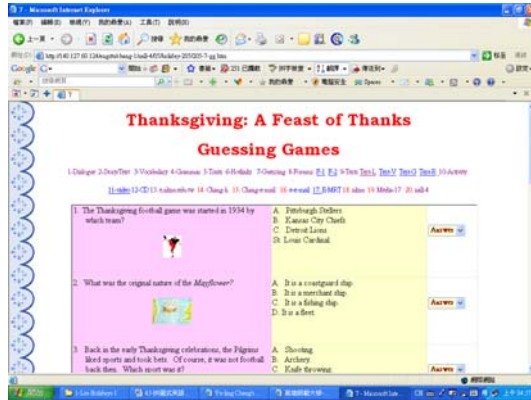
(d) A Sample Page of Structures,



(e) A Sample Page of Three Traits



(f) A Sample Page of Hot Links



Meaning Co-construction in an Oversea Video-conferencing

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Abstract

Meaning co-construction is significant to socio-cultural communication and language development. Successful meaning co-construction not only improves mutual socio-cultural understanding but also inspires language exchange between inquirers and respondents. Thanks to the development of instant message (IM) network technology, such as MSN system, Skype system, or Google system, more and more people have discussed or exchanged issues with one another in web chats or video-conferencing (herein vc) synchronously. However, inquirers and respondents may lose themselves without learning in the chatting jungle because of no definite or appropriate purposes for communication.

To deal with the problem, a well-organized chatting or video-conferencing is expected. After communicating with an inviter from the language center of Boston University (BU) for an overseas vc, the researcher collaborated with the inviter to coordinate a Taiwan-and-Boston vc program (<http://140.127.41.55/chang-1/k&b/home.htm>) via Skype system. In a five-week vc program, the Taiwanese student participants and the BU student participants discussed five assigned topics in both Chinese and English. To be specific, the student conversation performance in the program was discussed from five aspects in terms of (a) their intercultural communication, (b) their awareness of the time and space difference, (c) their interest in the target language of each site, (d) their best gains in the CMCL, and (e) their needs in open learning.

Key words: co-construction, chat, video-conferencing, Skype

For promoting globalization in the 21st century, many perspectives in meaning co-construction have been discussed. From a social constructivist perspective, Palincsar (1998) asserted the interdependence of social and individual processes in the co-construction of knowledge. From an intercultural communication aspect, Bowe and Martin (2007) claimed the feature of shared communication between speakers from different language/cultural backgrounds. From the perspective of symbolic anthropology, Shore (1991) indicated that cultural cognition is the product of two different sorts of meaning: (a) the (objective) semiotic organization of cultural texts or models, and (b) the (subjective) processes of meaning construction through which cultural symbols become available to consciousness as "experience." Nevertheless, Shore (1991) claimed the necessity to bridge these two kinds of meaning by outlining how cultural knowledge is grounded in sensory experiences.

No matter from what aspects, there is no denying that meaning can be interpreted in different contexts of situations for different communicative purposes. In the network system, users also have various interpretations for on-line or off-line messages. To construct or reconstruct appropriate meaning for good communication in the electronic age, many scholars have alternative interpretations for constructivist pedagogy in electronic-learning (e-learning). Specifically, in different social and cultural contexts, users need to prepare socio-cultural competence, intercultural communicate skills, and even etiquette for optimal communication

Meaning Co-construction in Constructivist Pedagogy

With the development of network systems, e-learning has been applied in many education systems recently. It not only helps reinforce learning by searching information or by expressing opinions on-line, but also helps entertain users in open learning. So students tend to be responsible for their own on-line tasks. To be specific, when they record and reflect upon their learning in various on-line or off-line projects, they become active learners. When they exchange information with others on-line (in chatting or forum applications) or off-line (in e-pal-ing or blog applications), they not only construct knowledge but also achieve the dual purposes of communication and social development. Kramsch (2002) asserts that learning is a nonlinear, relational human activity, co-constructed between humans and their environment. When learners interact with their environment, either the physical environment or the virtual environment, they dynamically co-construct meaning and their development as learning. Therefore, constructivist pedagogy is crucial for meaning construction in e-learning.

However, Self, Karakirik, Kor, Tedesco and Dimitrova (2000) were not satisfied with constructivism in constructivist pedagogy. They exemplified their criticism

in a definition of knowledge in constructivism by stating, “Knowledge is an analytic abstraction, like energy, and not a substance or thing that can be inventoried.” (p.4). In other words, knowledge, the other aspect of meaning, can be constructed or reconstructed in pedagogy. Since it is dynamic, it is no longer knowledge itself. Instead of constructivism, Self, Karakirik, Kor, Tedesco and Dimitrova (2000) proposed situationism.

In addition, Weller (2002) found some constraints on constructivist pedagogy in e-learning:

1. Constructivist pedagogy lacks visual clues.
2. Students’ learning styles are varied.
3. Constructivism does not suit all learning topics.

To illustrate, constructivist pedagogy does not provide a lot of visual cues for students, such as written prompts or animations. The written prompts refer to the instructional design, while animations refer to the interface design of certain courseware in e-learning. To deal with the problem of constructivist pedagogy, appropriate instructional designs and interface designs have to be taken into consideration. In addition, students’ learning styles are varied. Brown (1993) classified learning styles into five types (pp.105-113). In a cooperative learning classroom (Johnson & Johnson, 1982), for instance, a field-independent person may not be content in working cooperatively with a field-dependent person; on the other hand, a reflective person may not like to work with impulsive person. Therefore, teachers have to devise workable strategies to stretch their students’ learning styles in order to make students happy to accept others and then co-construct meanings with others. Last but not least, not every topic can be taught constructively. For example, teaching of speech or homepage composing may be done more effectively by teachers than by assistants or students. As a result, the constraint of constructivist pedagogy has to be taken into consideration in curricula design.

Meaning Co-construction in Socio-cultural Communication

In many aspects, meaning co-construction supports socio-cultural communication. Wolterbeek (2004) claimed that knowledge is value dependent, culture dependent, and changeable. Teachers can help students in co-constructing meaning of the value of the knowledge in specific cultural contexts through discussions. In this way, the students may be encouraged to negotiate their knowledge with others via their critical thinking, imagination, creativity or association. Ruth (2001) suggested teachers use advertisements to produce a socio-cultural context of situations for students to learn the target language as well as socio-cultural conventions, for example. So students can reconstruct meaning for cultural

communication. In CMCL, Lamy and Hampel (2007) regarded e-learning as a process of cultural and social practices. Therefore, they took the conventional but important perspective of socio-cultural issue into account. In shared communication, knowledge construction may be varied in social-cultural contexts; different knowledge may be explored in different contexts of situations. For instance, familiar terms to a network user in Country A may not be familiar to that in Country B (Samples 1-2); older terms may bring new meanings to a new social-cultural context (Samples 3-4), or new terms or emoticons may bring new messages to users (Samples 5-6) in text-based e-communication.

Sample 1: How is it going? (greeting in the U.S.A.)

Sample 2: Have you eaten yet? (greeting in Taiwan)

Sample 3: *Can you click the icon with your <<mouse>>?*

(a computer appliance)

Sample 4: *We can discuss it immediately in the <<instant message>>).*

(a computer communication system)

Sample 5: *Did you <<google>> today?*

(a verb)

Sample 6: *Agree. :) That's why I choose Lifehouse as my favorite!").*

(agreement)

If inquisitors and respondents cannot co-construct appropriate meanings in socio-cultural communication, they cannot understand each other. Therefore, Palincsar (1998) claimed the need of co-construction of knowledge in social interaction, and Lave (1991) asserted the importance of meaning negotiation independency of agent and world in learning. In context-based situations, interlocutors can learn to co-construct appropriate meanings for appropriate socio-cultural communications. Being able to mutually understand each other, the participants promoted the quality and quantity of language exchange.

After reviewing 445 articles in the field of e-learning from 2001 to 2005, Shih, Feng, and Tsai (2005) found that the topics on "Instructional Approaches", "Informational Processing" and "Motivation" tended to shift to the topics on "learning log files", "on-line messages" and "Patterns of Cognition in e-learning." In a study of the trend of types of digital language learning during 2000-2007, Liu (2007) generalized three modes: (a) the integrative learning mode (such as e-mailing, chatting, MSN or forum), (b) the platform system (such as Moodle, WebCT.com, or Blackboard.com), and (c) the courseware (such as BBC Learning English, CANDLE or AT&T). In spite of the variety in the theory and practice of compute pedagogies, a socio-cultural communication (or conversation) for real purposes is a virtue goal for e-learning. And the style in e-learning tends to be more open rather than rigid as

before.

Video-conferencing

With the development of high-tech, computers, users have transformed their affordance from text-based communication to an audio-based one and currently to an audio-visual-based one. The significant example can be referred to as video-conferencing (vc). Conventionally, network users use Google chats or BBS for text-based vcs. With the innovation of sound effects on the server, network users can apply Centra Symposium (<http://centraone.uncc.edu/>) or Digital Bridges (<http://www.netc.org/digitalbridges/>) to do audio-based vcs. After the improvement of the frequency of information on-line, both audio-visual-based messages can be presented and exchanged in audio-visual-based vcs, such as instant message (IM) MSN system, Skype, Polycom, or Connect. For instance, the project of The School of the Future (<http://163.32.84.102/seal/zanybbs/bbs/video/061120-v-conf-1/v-conf-1.htm>) applied Polycom to perform audio-visual-based vcs, which promoted English/Chinese bilingual learning and Taiwan/American culture learning for senior high school students in Kaohsiung, Taiwan and New Jersey, U.S.A. in 2005-2007. In addition, the use of the net-meeting system (<http://163.32.83.90/vc/index.html>) provided a free channel for discussing problems of senior citizens in the Taiwan society and the American society for university students in National Kaohsiung Normal University, Taiwan and those in the University of North Carolina-Charlotte. Though those university students have different experiences in contacting or taking care of seniors, they expressed their heartfelt love and care for the seniors across the cultural boundary. Therefore, the vc program helped the university students co-construct meaning in the same content area learning in the same speech community.

In the vc, all the participants including the teacher, the researcher, the administrators and students, have to work together closely. During the vc, the teacher is no longer an instructor and transmitter of knowledge; instead she/he needs to participate and facilitate the interaction among students and the other teacher on the other side of vc synchronously (Lamy & Hampel, 2007). Even the researcher or/and the administrators who negotiate with the other researcher or/and the administrators have to be on the other side for vc asynchronously. Therefore, there is no more students' cooperation but all the participants' collaboration in the vc. Wei (2007) indicated that via on-line group interaction, the target language, English, for Taiwan EFL students almost becomes a required medium for communication. Via on-line group interaction in vc, collaborative learning can be developed for all the participants, either for general communication or for special educational objective.

Ideally, all the participants will discuss or negotiate issues or forums with one

another in vcs synchronously. However, inquisitors and respondents may lose themselves without learning in the chatting jungle because of no definite or appropriate purposes for communication. To deal with the problem, some principles for organizing an optimal vc program is expected. Coventry (2007) proposed five principles for organizing vc in higher education as follows:

1. VC should be used to facilitate the best of distance and conventional teaching.
2. VC provides a means to get both students and tutors to a central location, all be it virtually.
3. VC does not support open leaning: students must still register and attend classes at pre-set times and progress at the pace established by the course.
4. VC could lead the way for a dual learning approach, giving students responsibility and opportunity to implement them.
5. There is no firm evidence as to whether full two way or one way with audio or simply video tapes are most effective.

In terms of principle 1, conventional face-to-face lectures or meetings may be limited in time and space in communication. With vc, the problem may be solved, so both teacher and students may have more opportunities to communicate with one another in the VC. Then they can spend more time on preparing for teaching/learning resources or solving problems instead of puzzling over time and space limitations. As for the virtual, central location in principle 2, it shortens the digital differences between the urban and the rural Institutes. So the policy of general education can be promoted. In principle 3, VC does not support open leaning, thus teachers have to design appropriate activities or assignments to help students know the issues of the course subjects the VC. In principle 4, VC can lead the way to a dichotomous approach, giving students more responsibility for their learning, working in groups, doing tasks, all of which would benefit conventional teaching with video conferencing providing an opportunity to implement them. As for two ways or one way to use audio or simply video tapes the VC s, in instruction, no firm evidence proved it. The optimal way is to use them eclectically by multimedia in a setting or by instructional objective.

To have an insight into the process of meaning co-construction or exchange in communication in vcs, many scholars have applied qualitative study methods. Two of the popular methods are discourse analysis and conversation analysis. In the discourse analysis, Grice (1975) proposed four maxims to help language users judge the effect of the communication context in terms of the quantity, quality, relevance,

manner and cooperative principles. Adaptively, Bowe and Martin (2007) provided language users with relevant maxims to analyze various types of speech acts across cultures. In contrast to discourse analysis, the conversation analysis does not insist on taking some maxims to deduce the performance of speech acts. On the contrary, it is applied to conduct the performance of speech acts. Lamy and Hampel, (2007) stated, “Conversation analysis aims to arrive at generations through description, in the greatest possible detail, of as much international and contextual data as possible.” (p.52). After comparing the conversation analyses of Goodfellow, Jefferys, and Shirra’s (1996) and O’Dowd’s (2006a, 2006b) studies of students’ responses to audio-visual-based video-conferencing (vc), Lamy and Hampel, (2007) found three similarities: (a) that close integration is needed during vc, (b) that the students had mixed feelings about seeing themselves and their partners on the screen, and (c) that much more training is required. Santacroce (2004) (cited in Lamy, M-N. & Hampel,, 2007, p.52), both discourse analysis and conversation analysis rely on the sequential nature of conversation and aim to specify the norms that regulate conversations; both of them are based on illocutionary actions to see how listeners and speakers construct or co-construct meaning for communication. However, Santacroce (2004) (cited in Lamy, M-N. & Hampel,, 2007, p.52) distinguished them in three aspects. From the aspects of scientific affiliation, discourse analysis deals with language use in linguistics; while the conversation analysis does it in sociology. From the aspects of methodology, discourse analysis usually has well-founded principles of discourse cohesion, while conversation analysis does not. From the aspects of epistemology, discourse analysis is hypothetico-deductive while conversation analysis is inductive. According to Hung (2008), since human communication is a natural process, it is hardly controlled with prepared, well-formed questions or replies for conversational cohesion. Therefore, more and more scholars applied conversation analysis in their studies on vcs.

Good meaning co-construction is a bridge for good communication. Good quality and appropriate quantity are also the keys to the success of communication; however, much consideration lies on how to achieve that purpose. Canale and Swain (1980) and Coventry (2007) suggested teachers provide students with a lot of opportunities in dialogue, construction, and conceptualization. But to what extent can students make it or what problems the students may encounter are worth investigation. Though Coventry’s (2007) five principles for organizing vc in higher education are optimal, they have to be verified by putting the theory into practice. Lamy and Hampel, (2007) pointed out three things to be improved in Goodfellow, Jefferys, and Shirra’s (1996) and O’Dowd’s (2006a, 2006b) studies of students’ responses to audio-visual-based video-conferencing (vc), which also provided room for further

exploration.

Exploring the Effects of VC on Meaning Co-construction

Thanks to the friendly invitation of a Chinese language teacher, Miss Yu, from a language center in Boston University (BU) for her Vc program via e-mail, the researcher got an opportunity to coordinate a video-conference (vc) program through Skype for five weeks in 2008. The vc program connected the conversation groups with native speakers at overseas universities through videoconferencing. The goal of the project was to benefit the students in two universities in terms of target language learning and intercultural communication.

There were two groups of students as the subjects in the vc program,. One group were ten English-speaking students from a language center at BU. The other group consisted of three juniors and two sophomores from English Department at National Kaohsiung Normal University (NKNU). All the subjects in both groups were volunteers. They volunteered to join the vc program from October 13 to December 15, 2008. Miss Yu and the researcher adopted the small-group vc approach in the project. To be specific, two to five participants formed a conversation group on each side, and held regular informal conversation in both languages (the native language of the overseas partner and English) via vc once per week.

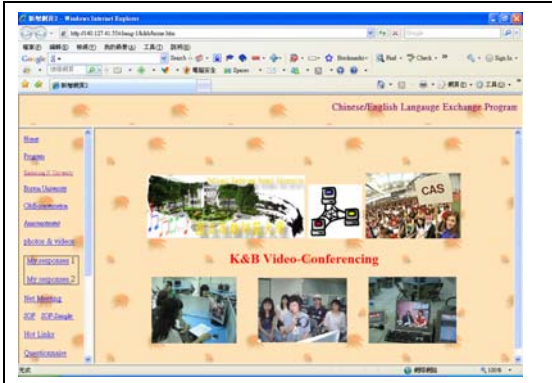
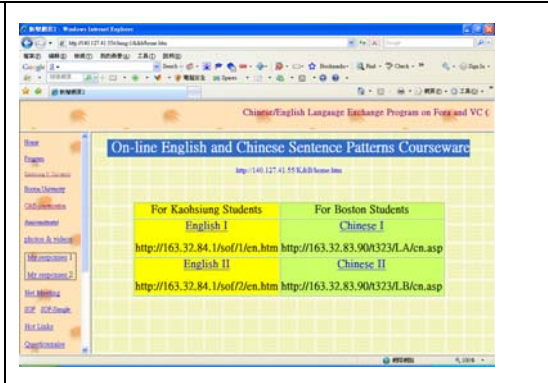
Before the vc, the researcher contacted with Miss Yu via e-mail to check the schedule for the vc and discuss ten possible topics for the student subjects to discuss or chat during the vc. Finally, Miss Yu and the researcher reached a commitment. The schedule and the topics for discussion are displayed in Table 1.

Table 1

The Schedule and the Topics for Discussion in the VC Project

| 20:10-21:50 In Kaohsiung | Activities | Topic |
|-----------------------------|---------------------------------------|--------------------------------------|
| Oct. 13 | Testing the Videoconferencing (vc) | Free Chatting |
| Oct. 20 | 1 st vc & forum 1 | Impacts of Typhoons or Hurricanes |
| Nov. 3 | 2 nd vc & forum 2 | Pros and Cons of Lotteries |
| Nov. 17 | 3 rd vc & forum 3 | Myths of Internet Cafes |
| December 1 | 4 th vc & forum 4 | Issues on Global Warming |
| December 15 | 5 th vc vforum 5 | Is Christmas Only for Children? |

In order to make the vc project manageable, the researcher composed a platform for K&B Video-Conferencing (<http://140.127.41.55/chang-1/k&b/home.htm>) as shown in Figures 1 and 2:

| | |
|---|--|
|  |  |
| <p>Figure 1. A Platform for K&B Video-Conferencing</p> | <p>Figure 2. Courseware for On-line English and Chinese Sentence Patterns</p> |

On one hand, the NKNU and BU students could review the schedule and the topics for discussion in the vc project in the three-frame platform as shown in Figure 1. They could also learn the target language for each site via the free Courseware for On-line English and Chinese Sentence Patterns as shown in Figure 2. Totally, 300 English sentence patterns and 300 Chinese sentence patterns for daily language use were provided in the courseware. On the other hand, the NKNU and BU students could do vcs on-line by means of the free software, Skype (<http://skype.pchome.com.tw/download.jsp>). In order to make the Skype identity clear, BU students used the five accounts, bu-01, bu-02, bu-03, bu-04 and bu-05; while the NKNU students used the five accounts: nknu-01, nknu-02, nknu-03, nknu-04 and nknu-05. Of course, the BU and NKNU students also introduced one another with their real English names in the beginning of every vc. But for the purpose of confidentiality in data analysis, all the students are anonymous in this report. To make clear the NKNU students' comments and suggestions for the present program, the researcher also interviewed some students after the program. Finally, all the oral profiles and the interview profiles were processed by conversation analysis.

Findings of the Meaning Co-construction in the VC Project

After a five-week vc project, the research found that most of the students liked the program, but they also had some difficulties in participating in the program. To be specific, the student conversation performance in the program can be discussed from five aspects in terms of (a) their intercultural communication, (b) their awareness of the time and space difference, (c) their interest in the target language of each site, (d)

their best gains in the CMCL, and (e) their needs in open learning. Following the conversation analysis, some students' written responses in their final reports for the project were sampled and interpreted.

The Students' Intercultural Communication

On the basis of the five given topics for five vcs, the NKNU students liked to talk with the BU students on the following four topics 1, 3, 4, and 5, but not topic 2, pros and cons of lotteries.

1. Impacts of Typhoons or Hurricanes
2. Pros and Cons of Lotteries (=> Movies)
3. Myths of Internet Cafes
4. Issues on Global Warming
5. Is Christmas Only for Children?

NKNU student-01 and BU student-01's conversation were sampled as follows:

- NKNU student-01: Today, we are going to talk about "Pros and Cons of Lotteries". Have you ever purchased any lottery in your place?
- BU student-01: Sorry, I don't.
- NKNU student-01: Why? Didn't you have lottery in your place?
- BU student-01: Yes, we do. But I am a good student. I don't buy lottery here.
- NKNU student-01: Really? Many people in Taiwan buy lotteries. It's very popular.

NKNU student-01 and the other NKNU students found that their BU partners did not want to talk about the topic "Pros and Cons of Lotteries" because BU students expressed that they were good students who were not encouraged to buy lotteries in Boston. After listening to their reason, the teacher and the students in NKNU decided to change the topic into movies. Later on, they kept the conversation going. Accordingly, meaning was negotiated and exchanged in the NKNU and BU vc project. Overall, during the vc, the teacher was no longer an instructor and transmitter of knowledge; instead she/he needed to participate and facilitate the interaction among students and the other teacher on the other side for vc synchronously (Lamy & Hampel, 2007).

When the subjects on both sites talked about Impacts of "Typhoons or Hurricanes"; the NKNU students expressed the danger of typhoons in Taiwan; while the BU students talked about that of hurricanes, especially in the midland of North

America. One NKNU student associated hurricanes with the story of “The Wizard of OZ”. Then his BU partner grinned in agreement. The finding is in accordance with Wei’s (2007) notion that via on-line group interaction, the target language, English, for Taiwan EFL students almost became a required medium for communication. On the other hand, the target language, Chinese, for BU students also became an optimal medium for communication.

In a five-week vc program, the NKNU and the BU student participants discussed five assigned topics in both Chinese and English. They also varied their communication styles by doing either many-to-many vcs, one-to-many vcs, or pair vcs. Later on, they increased mutual understanding of each other’s language, communication style and culture, which is in accordance with Lier’s (2002) and Krasmich’s (2002) notions that learning was a nonlinear, relational human activity, co-constructed between human and their environments

Some BU volunteer students in this vc project showed their cultural identities in the vc. For instance, BU-02 was from the Philippines and BU-03 was from Vietnam, so they had a sense of identity with the Asian group such as the NKNU students in the vc. In addition, one of American student hadn’t been in Mainland or Taiwan, but she had been interested in Chinese culture. So she continued her participation in almost every vc in this project.

By contrast, most of the NKNU students in this program knew much about America socio-culture via the Internet, movie channels or DVD. They were happy to talk about movies, global warming, and Christmas gifts in the Open Learning Program. For instance,

- | | |
|------------------|--|
| NKNU student-02 | How do you like movies? |
| BU student-02 | I like some movies about violence. |
| NKNU student-03 | Do you like “Spiderman”? |
| BU student-01: | Of course, it is a very violent but just. |
| NKNU student-04: | In addition, the main character is really handsome, isn’t he? |

By presenting a topic, making a comment, raising a question or applying a tag question, the student participants kept the conversation going. It shows that all the participants in the above conversation were interested in their topic on movies and they knew how to share the speech community with some techniques. So their conversation was field-dependent. The knowledge of their conversation also echoed Wolterbeek’s (2004) claim that knowledge is value dependent, culture dependent, and changeable. Through the meaningful conversation, the NKNU and BU students

co-constructed meaning together about the value of the knowledge in specific cultural contexts in the vcs. Furthermore, the finding was also approved by O'Dowd's (2006b) claim that telecollaboration helps the development of intercultural communicative competence.

In the interviews, NKNU student-03 expressed that she was satisfied with the topics for vcs. She was also benefited from the intercultural communication. NKNU student-04 stated that he could see the mutual benefits of the program. He would like to visit the BU students if he had a chance to take a trip to Boston. NKNU student-05 admitted that she was a green hand in operating Skype. But she expressed that she had learned a lot from the program. In addition to the network operation skills, she also knew the importance of cooperative learning and vc etiquette. After all, thanks to the vc mediation, the participants knew many socio-cultural factors for the success in the vc programs in opening learning. Those factors are also important factors for meaning co-construction for the participants in the future.

The Students' Awareness of the Time and Space Difference

Though the Internet is really convenient for vcs, the time difference is a very big issue for the synchronous communication in the vcs in this program. Generally, there was a 12-hour difference between NKNU and BU in October and November, but there was a 13-hour difference between two places in December. The researcher and some students were once confused by the release of the time-saving constraint, and then went to the computer lab for the fourth vc on December 1, 2009. Fortunately, the researcher and some students went to the lab one hour earlier than the appointment time, so they did not miss the fourth vc.

In spite of that, the students on both sites were aware of the time difference. The BU students did a vc in a computer lab from 8:00 ~ 8:50 p.m. They couldn't but end the vc when it was time for the closing of the lab. By contrast, the NKNU students did not have such a limitation because the computer lab was available in the morning on every Monday. But they understood their computer pals' situations, so they tried to finish their conversation in the vc in the golden 50-minute vc every time. In a way, the time and space restraints in the vcs have granted the efficient progress for students on both sites on their assigned topics.

Coventry (2007) indicated that experimentation in the vc involved genuine interaction with the learning environment. He also referred the environment to the "use of simulations". Due to the simulations in the vc program, all the student participants were glad to see and talk with one another in different places but at the same time. From the interview results, most of the NKNU students appreciated the opportunity for real-time communication. Though they had to wake up early, they

said that it was worthy. Some of them even continue “chatting” with their BU partners by e-mail or MSN after the vc program, which shows the impact of vcs across the time and space boundaries.

The Students’ Interests in the Target Language of Each Site

Interest is a lubricant for language learning. Once a student is interested in the target language, he can develop his language well. In content area learning, a student can learn not only the subject matter but also the target language (Vacca & Vacca, 1998). If the student’s interest can be taken into account in content area language learning, his target language would be developed. In the cognitive academic language learning approach, Chamot, Uhl, O’Malley, and Michael (1986) helped some EFL students develop their target language in addition to their subject matter in the content area learning. This is paralleled by the thesis research findings of Huang (2003) in her implementation of an English web reading club for senior high school students in Tainan.

The BU students from the language center in BU were interested in the Chinese language. Most of them hoped to have a good opportunity to make language pals with native Chinese students, either in Mainland or Taiwan. So they grasped the precious opportunity to chat some Chinese with the NKNU students in this vc project. By contrast, the NKNU students were English majors, and they also wanted to use their target language, English, to make language pals with BU students. In the first 25 minutes, the two groups of students were required to talk in Chinese and in the second 25 minutes in English. Though the language code shifts were not definite, the two groups of students knew how to benefit each other by using Chinese and English bilingual language flexibly. They also co-constructed meaning in their conversation in the vcs. For instance, when one student raised questions in Chinese, his partners would reply in Chinese and vice versa.

The Students’ Best Gains in the CMCL

Through interviews, the researcher collected the NKNU students’ best gains in the NKNU-and-BU vc. Generally, the NKNU students got to know the BU students’ academic study attitudes as well as life philosophies. To be specific, NKNU student-04 found that his BU partner had a good study plan and was further inspired by his BU partner to study hard before mid-term and final exams. His partner also had a part-time job to make up for part of his tuition. So NKNU student-04 admired his BU partner for making his own living in university. In Taiwan, many undergraduates get tuition support from their parents. So they do not worry about making money with their own effort, which shows a salient difference for the undergraduates

between Taiwan and North America.

When asking about her best gain in the vc conference, NKNU student-05 replied that she was happy to communicate with her BU partners in the target language, English. To be specific, she confirmed her English ability which was applied in the real vc conference. In addition, NKNU student-01 approved the strength of the software, Skype, which provided her with a real channel to “see” and “talk” with native English speakers. The genuine interaction in the vc in the CMCL inspired the students to sharpen their communication skills and expand their vision of the world. Therefore, the vc project is situation-dependent or field-dependent CMCL.

The Students’ Needs in Open Learning

The students who undertook a vc project had neither time nor location dependencies. But their opportunity to interact with their language partners was extremely limited. Therefore, the asynchronous communication is expected. As well, they hoped to do a co-project with the BU students in the future if possible.

In addition to the five assigned topics for this program, the NKNU students also wanted to create their own topics which were not found until their vc with the BU students, such as fashion or taking trips or contemporary news. The students’ suggestions seem to make a negotiation or compromise with the researcher, which is also a mirror of meaning construction. If the researcher accepts or compromises their suggestions, she will make the program more student-centered in the future.

Conclusions

Socio-cultural communication and language development are dual purposes for language instruction. Nevertheless, the dual purposes cannot be achieved if meaning cannot be shared and exchanged by language learners and users in appropriate socio-cultural contexts of situations. Coventry (2007) claimed the need of open learning for learners to interact with peers via vcs in higher education, which couldn’t be operated out of socio-cultural contexts of situations. Thanks to the free Skype instance message in the vc project, both the NKNU and the BU students had a good channel to share, compare, contrast, negotiate, and compromise meaning in some assigned topics. Though not every piece of idea in the vc was accepted, it was at least constructed, co-constructed, or even re-constructed in the vcs.

Generally, the conversation performance for the participant in the vc project was analyzed and discussed from five aspects in terms of (a) their intercultural communication, (b) their awareness of the time and space difference, (c) their interest in the target language of each site, (d) their best gains in the CMCL, and (e) their needs in open learning. Due to meaning co-construction in constructivist pedagogy

and in socio-cultural communication, the NKNU and the BU students could exchange messages, be aware of the east time and west time for each vc, develop their interest in the Chinese and the English target languages, and expressed their best gains in the program. Of course, there is still room for improvement. By taking the students suggestions for the vc project in the future, the vc in the CMCL will be modified and promoted.

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