

Introduction

Recent rapid and pervasive social, technological and economic changes have significantly impacted on educational contexts, requiring radical rethinking of the manner and means of higher education (Rigmor, Holly, & Wache, 2001). Web-enhanced courses have been particularly attractive for educational purposes in recent years because of their world-wide accessibility, multimedia capabilities, and interactive functions (Li & Hart 1996). Furthermore, new theories and applications of language learning and teaching are exploring the benefits of information communication technology (e.g. online language courses) facilitate SLA (Chen, Belkada, & Okamoto, 2004). Web-enhanced courses have evolved from merely digitalizing printed-based materials on the Internet to student webpage composition, and then on to more interactive activities such as online discussion forums and concept-building sessions (Kandies & Stern, 1999) because the proliferation of authentic texts on the web is far from enough to guarantee language acquisition for learners in their uninformed search (Godwin-Jones, 2007). Teachers can utilize web-based programs to extend the curricula in powerful ways, enabling students to explore different points of view, to navigate at will non-linearly, and to process the information at their own paces.

Seeing the need to develop and upgrade the domestic tourist industry, the ROC Ministry of Education decided to establish Kaohsiung Hospitality College in September 1990 in order to train managers for food service and travel-related industries. Since its founding in 1995, KHC has been aware of the needs of the business & industrial fields and established very close partnerships with more than 200 companies in the hospitality field, including food & beverage, tourism, and culinary arts. By integrating learning with practical application, the school promotes and expands students' practical skills. Moreover, KHC has spared no effort in establishing international collaboration among schools through overseas

internships so as to afford students the opportunity to implement the professional skills they learn at school in a workplace environment. KHC strives to instill a service ethic in its students that will aid them in their professional development. A closer look at the state of the hospitality field in Taiwan illustrates this necessity. The fine cuisine, the night markets, the annual events such as the Lantern Festival, the many aboriginal and Hakka festivals, as well as many other religious ceremonies and rituals all combine to make Taiwan one of the most fascinating travel destinations in the world. However, how to present the charms of Taiwan to foreign guests is a great concern. Moreover, how well our students can communicate the relevant contents in foreign languages is another concern.

Consequently, how to incorporate web-enhanced learning into hospitality education is an area worth exploring. However, the acquisition of foreign languages for specific purposes through e-learning strategies is one of the areas less researched and developed in the field of CALL (Gimeno-Sanz, 2002). The ubiquitous hospitality English learning platform (U-HELP), which was designed at National Kaohsiung Hospitality College, (NKHC) responds to specific needs of the students who will serve in the hospitality industry in the 21st century. The goal of the project is to implement the U-HELP, which will expose students to situations they can relate to and promote language use by giving students the opportunity to participate in tasks directly related to their future practice at work. The facilities available in the U-HELP all aim to provide teachers and learners with the necessary tools that will foster language awareness and enable the students to discover for themselves the intricacies of language use with the aid of the program.

Through the above learning experiences, we hope that students can become life-long learners who have the following characteristics described in Rigmor, Holly, and Wache's (2001) study. Life-long learners develop skills to access information from appropriate sources. In addition, they critically analyze and

evaluate information. Then, they apply information for effective and creative decision-making. Moreover, they develop attitudinal objectives which lead to appreciation of lifelong learning and strengthen their own developing position as a learner in relation to the field of knowledge or profession. These life-long learning qualities demand information literacy. That is, learners must have the ability to locate, evaluate, manage, and use information in a range of contexts. Many universities worldwide have attempted to identify similar qualities they aim to inculcate in their graduates.

In addition to information literacy described above, the U-HELP also emphasizes Hospitality English and cultural awareness. As Common Wealth Magazine (2006) has emphasized, the four key competencies in the age of globalization include (1) learn to know (2) learn to do, (3) learn to live together, and (4) learn to be. The third and fourth competencies emphasize that learners should be people with vision and awareness of multiple cultures in order to become moral global citizens. Given that language and culture are inseparable and that it often takes a long time for learners to progress from the level of linguistic competence to socio-cultural competence, language learning curricula should be designed to integrate more meaningful activities which promote direct and abundant exposure to the target culture. Whilst undertaken in different cultural contexts where language education and issues were significant, the most relevant context of the inquiry was a global one related to how new learner-centered practical models and theoretical projections offer the promise of a more effective approach to integrating ICTs in teaching and learning than still often dominant teacher-centered and rote learning approaches (Richards, 2005). Therefore, the U-HELP is designed for fulfilling this vision. The following sections will discuss the rationale and the processes necessary to implement the U-HELP, which satisfies learners' demands in terms of project-based learning, process orientation, and English for specific purposes to achieve professional language competence.

RATIONALE

The rapid advances in information and communication technology (ICT) have had a profound impact on educational policies, contents structure and methods of delivery throughout the Asia-Pacific region (UNESCO Bangkok, 2003). In new technology-facilitated learning environments, teachers need to build their capacities to utilize the ICT, so students can take advantage of ICT to develop their knowledge. Web-enhanced learning has great potential to promote learners' information literacy and interaction. After 1990, integrative Computer-assisted Language Learning (CALL) resulted from both theoretical and technological developments (Levy, 1997). Theoretically, many researchers highlighted meaningful interaction in authentic discourse communities. This variant of constructivism is called social constructivism (Alessi & Trollip, 2001). Social constructivism demonstrates the benefits of cooperative and collaborative learning (Jacobs, Ward & Gallo, 1997; Warschauer, 1997). Strongly influenced by Vygotsky's (1978) study, social constructivism emphasizes that knowledge exists in a social context and is shared with others rather than being represented solely in the mind of an individual. Moreover, higher psychological functions originate in interaction between individuals before they are transferred within the individual (Brufee, 1986). When learners interact with one another, sharing ideas provides learners with opportunities to refine and to reconstruct their internal thoughts. Their construction of knowledge hence begins in social experiences and ends with individual internalization. The third feature of social constructivism is that language is an instrument of social cooperation and mutual participation (Self, Karakirik, Kor, Tedesco, & Dimitrova, 2000). To illustrate, language is a means that enables people to participate in a social activity.

The most important technological development after 1990 has been the Internet (Levy, 1997). The CALL projects make use of the Internet in varied ways. The

principal role of computers is to provide alternative contexts for social interaction, to facilitate access to existing discourse communities and the creation of new ones (Kern & Warschauer, 2000). Hypermedia, simulation, virtual reality and open-ended learning environments increase benefits to a learner because they allow a user to explore information more freely, to apply his own learning styles, and to use software as a resource rather than as a teacher (Alessi & Trollip, 2001). For example, social constructivist educators regard communication, mediated by computers (CMC), of various kinds such as electronic exchange of mail, Internet chat rooms and video-conferencing, as an increasingly appropriate use of technology because they allow both asynchronous and synchronous interaction between users. This unique environment for communication has overcome traditional barriers of time, space and isolation for remote learning. CMC is thus a fascinating instrument for learning and a humanized medium for various interactions that were hitherto possible only in direct communication (Hodgson & McConnell, 1992; Liou, 1996). Despite all these advantages, integrative CALL remains a development so recent that its research methods and theoretical foundations are under intense debate among researchers (Chapelle, 1997; Salaberry, 1999).

Technologies developed in the twenty-first century not only serve the new paradigms for teaching and learning but also assist to shape these paradigms (Kern & Warschauer, 2000). Technology skills also play critical roles for modern people to connect effectively with current trends. Both students and teachers must thus be competent and comfortable with the medium. Students need to have a minimal functional proficiency that allows them to explore an open-ended environment as the Internet without the strong intervention of an instructor owing to the role shifting from teacher-centered to student-centered approaches (Brandl, 2002). The classroom teachers should be able both to improve the web literacy of students and to apply computers in their teaching.

A report by the British Educational Communications and Technology Agency, (BECTA, 2004), based on an analysis of current research about the barriers to an efficient use of information and communication technology draws a distinction among the different types of barriers under consideration and highlights teacher's attitudinal factors among a typology of barriers: (1) resource-related factors, (2) factors associated with training, (3) skills, knowledge and computer experience, (4) attitudinal and personality factors, and (5) institutional and cultural factors.

As far as teacher level barriers are concerned, many authors have investigated in detail their connection with technology. The results are presented in Table 1 (BECTA, 2004). In this sense, it seems that the lack of technological and didactic knowledge of the teacher may be one of the elements which have contributed to prevent teachers from the use of ICT and a satisfactory implementation of ICT into curriculum. According to Lee (2000), barriers inhabiting the practice of CALL number four types – financial barriers, availability of computer hardware and software, technical and theoretical knowledge, and acceptance of the technology. It is observed that the main reason that many teachers in senior high schools remain uncommitted to language instruction assisted by computer might be that they are offered inadequate training in use of computers and the instructional strategies needed to infuse technology into the teaching and learning process. Teachers lack adequate knowledge to use software programs that are justifiable on a pedagogical basis. Students consequently lose many opportunities to benefit from CALL. A web-based instruction platform justified on a pedagogical basis and freeing teachers from technical problems is thus required.

Table 1

Teacher-level barriers (BECTA, 2004)

TEACHER-LEVEL BARRIER	
Lack of time for both formal and informal training	Fabry and Higgs, 1997
Lack of time for preparing ICT resources for lessons	Preston et alter, 2000
Lack of knowledge necessary to resolve technical problems when they take place	Van Fossen, 1999
Lack of personal management skills to change	Cox et alter, 1999
Teachers have the perception that computer are complicated and difficult to use	Cox et alter, 1999
Lack of motivation to change long-stand pedagogical practices	Snoeyink and Ertmer, 2001

The above review suggests a development of a ubiquitous learning environment which combines the advantages of an adaptive learning environment with the benefits of ubiquitous computing and the flexibility of mobile devices (Jones and Jo, 2004). In a ubiquitous learning environment, students can become totally immersed in the learning process. A great deal of literature reports the positive effects of web-based learning on students' preferences for an authentic, communicative, and collaborative learning environment (Fox, 1998; Hanson-Smith, 1997; Jones, 2001; Warshauer & Whittaker, 1997). Gunawardena, Lowe and Anderson (1998) suggested that the social construction of knowledge in the online environment progresses through five sequential phases as follows:

1. Sharing and comparing of information,
2. Discovering exploration of dissonance or inconsistency among ideas, concepts, or statements,
3. Negotiating meaning,
4. Testing and modification of proposed synthesis or co-construction, and
5. Agreeing statements and applying newly constructed meaning.

In the first phase of the social construction of knowledge, participants in a particular learning community simply stated their opinions and observations. The second phase was characterized by statement of areas of disagreement or escalating conflict through experiences. In the third phase, participants sought to explore meaning and to identify areas of agreement, whereas the fourth phase was characterized by testing synthesis instead of received facts. In the last phase, participants expressed their metacognitive statements, illustrating their understanding that their knowledge had changed.

There are a variety of reasons for teachers to focus on web-based activities for promoting critical thinking. Firstly, web-based activities involve students working together and developing skills of collaboration, which gives them practice in planning teamwork and involves them as parts of a learning community in which they have a stake (Boud, Cohen & Sampson, 1999).

Secondly, web-based activities increase opportunities for students to engage in reflection and exploration of ideas when they are given more responsibility for their own learning. Thirdly, students gain more practice in discussing the subject area than is typically the case in learning activities in traditional classrooms. They are able to articulate their understanding and have their assignments evaluated by both the teacher and the peers. Finally, with Internet technology, the walls of our classroom dissolve. The courses incorporate Internet technology which enables students to explore different points of view, to navigate at will non-linearly, and to process it at their own paces (Jones & Jo, 2004). In the process, independent online reading is an excellent way to encourage the motivated students to be engaged in real interpretive communication by reading authentic texts for interesting content instead of language practice only (LeLoup, & Ponterio, 2005). Students therefore know that the modern world is connected by the Internet, which offers a vast world of information at students' fingertips. This in turn helps teachers

focus less on transmitting information and thus allows more discoveries on the part of the students. In this way, the Internet cultivates students' natural curiosity to explore and make sense of the world in a critical way (Grassian, 1995; Foster, 1998). Teachers can design web-based activities to foster learner-centered communities in which both students and teachers collaborate to develop and refine ideas (El-Hindi, 1998, Herrington, & Standen, 2000). As a result, meaningful learning occurs within an authentic learning task through social interaction.

Online learning communities, one of many different approaches within e-Learning, provide a developmental window on to the learning process, allowing fuller formative feedback as well as providing a portfolio of learner contributions (Bradshaw, 2002). Moreover, online asynchronous learning communities provide a particularly rich opportunity to generate collaborative dialogue, which is directly linked to increased skills in critical thinking and problem solving (Gokhale, 1995). Online learning community programs can not only increase student engagement and motivation but also foster increased student intellectual development (MacGregor, 2002). Charalambos, Michalinos, and Chamberlain (2004) also emphasize that the idea of community rests upon two sets of values: on the one hand, the idea that co-operation and shared responsibility provide the best context for effectiveness in accomplishing some goals and, on the other hand, that close ties of affiliation are beneficial and supportive for the living of a good life.

UBIQUITOUS HOSPITALITY ENGLISH LEARNING PLATFORM

The U-HELP aims at developing an instruction platform which might guide teacher's professional development in ICT integration for enhanced teaching and learning. In this section, the implementation of the U-HELP and the learning activities conducted in it are introduced. Afterwards, what teachers and students can achieve in the U-HELP is discussed.

The implementation of the U-HELP

The ubiquitous hospitality English learning platform developed in this study provides teachers with an easy-to-use system which included the following ten areas (Figures 1 and 2): (1) registration, (2) account application, (3) latest news (4) hospitality English (5) teachers' portfolio, (6) students' portfolio, (7) interaction, (8) learning processes, (9) questionnaires, and (10) relevant resources. This platform is designed in the spirit of Sharable Content Object Reference Model (SCORM)(ADL, 2002), which embraces the following merits of web-based learning: reusable, accessible, durable, interoperable, adaptable, and affordable. Thus, teachers and students from different schools can work on the platform at the same time in their own computers.

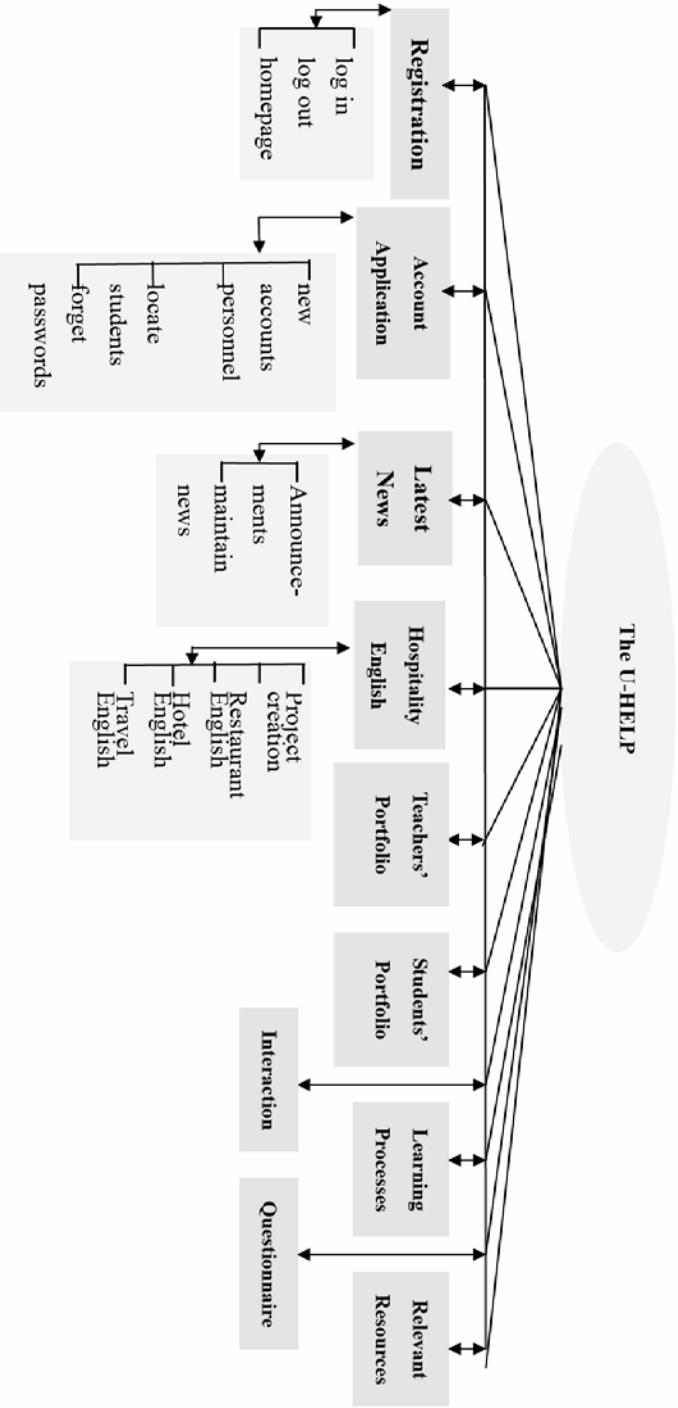


Figure 1. The content of the U-HELP

To make the best use of the U-HELP a computer with a fast processor and large memory is recommended; all system requirements are listed in Table 2. This online platform for training can be conducted across boundaries of time and space once these requirements are fulfilled.



Figure 2. A welcome page of the U-HELP

Table 2

Requirements of the U-HELP

	Equipment	Function
Hardware	PC586 or above (including at least 128 Mb RAM, 5Gb hard disk and VGA card)	to produce multimedia programs
	network interface to internet	to access online
Software	Microsoft Windows 2000 server	to operate the system
	IIS (web server)	to operate the internet
	Microsoft SQL server	to operate the database
	browser	to browse courseware online

The learning activities conducted in U-HELP

There are mainly two learning activities included in U-HELP. One is hospitality reading and the other is hospitality project conduction.

Hospitality reading

The procedures for the students to practice hospitality reading are presented as follows:

1. Students visit the U-Help by keying in the Website address:
<http://163.32.86.9/uhelp>.
2. Then, students are required to apply new accounts from **Account Application** on the menu list (Figure 3). After filling in all the information, they may click yes and submit their information.



Figure 3. The sample page of **Account Application**

3. The next step is to log in from **Registration** (Figure 4). After filling in their personal account numbers and passwords, students may enter the U-Help.

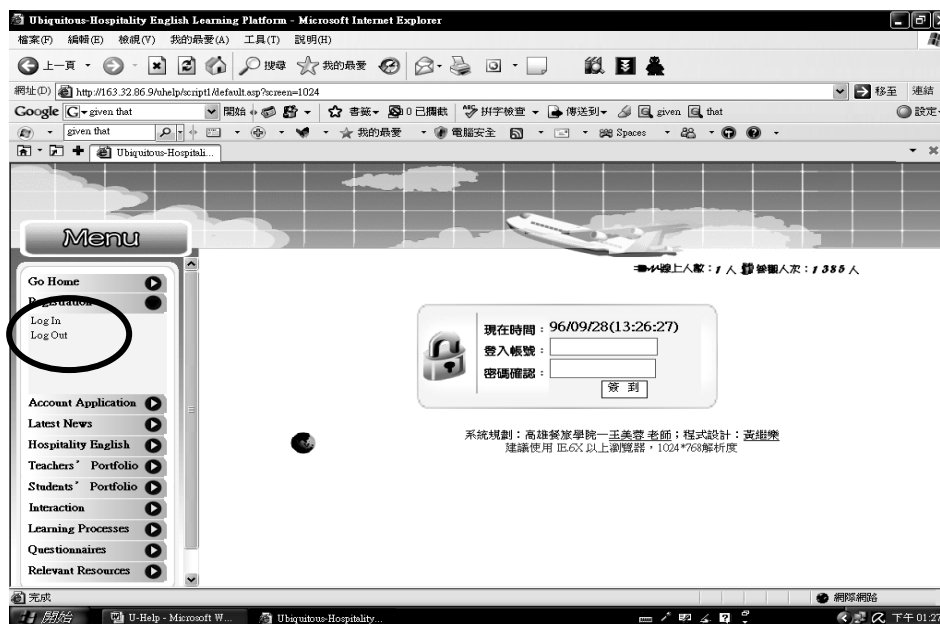


Figure 4. The sample page of Registration

4. There are three reading articles located under **Reading Club** which can be seen from **Teachers' Portfolio**.

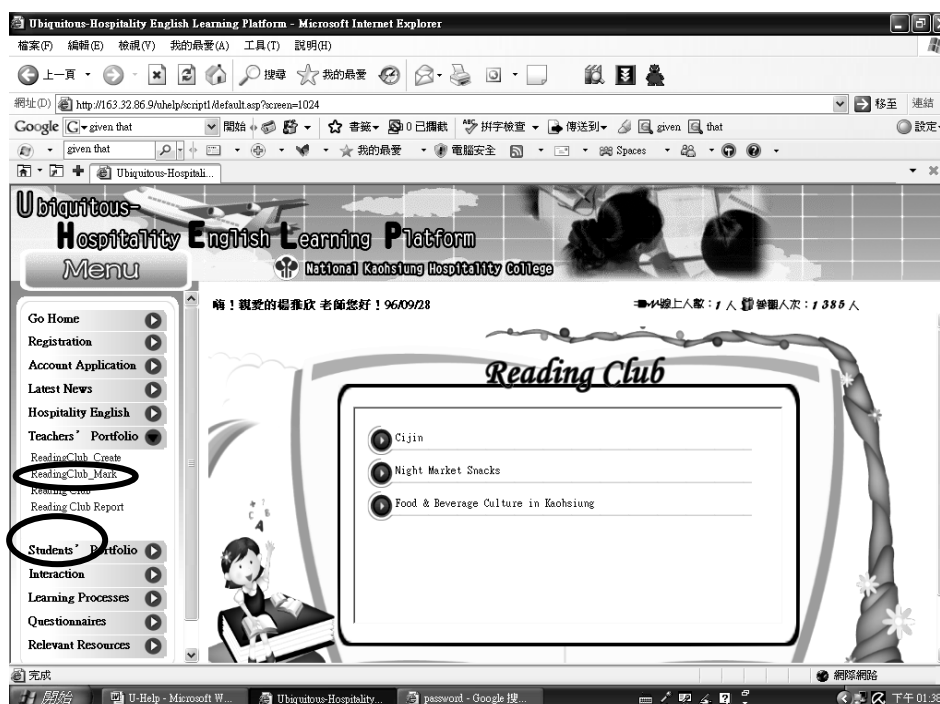


Figure 5. The sample page of Reading Club

5. Students are required to finish these three articles, Cijin, Night Market Snacks, and Food & Beverage Culture in Kaohsiung, one by one on different days. They can start to read the first article by clicking **Cijin**, (Figure 6).

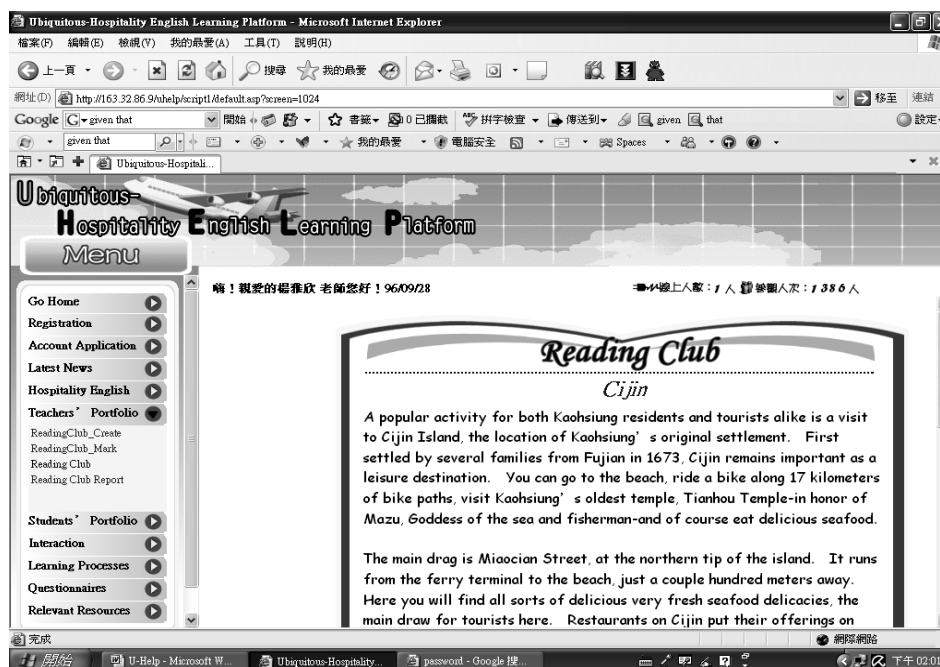


Figure 6. The sample page of the article **Cijin**

6. After finishing the reading, students may do follow-up activities such as vocabulary matching and reading comprehension exercises (Figure 7 & 8).

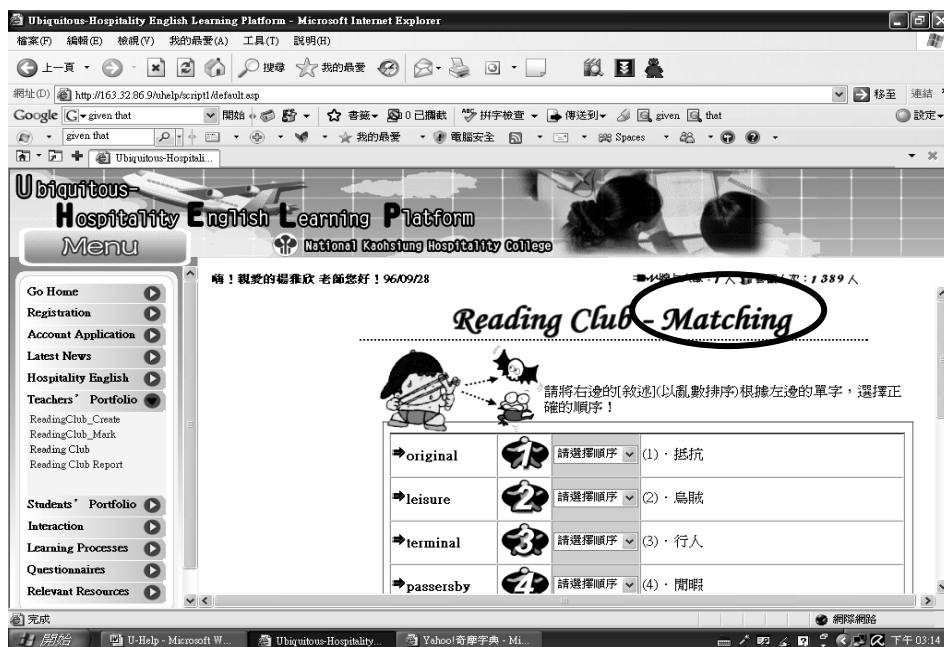


Figure 7. The sample page of Vocabulary Matching

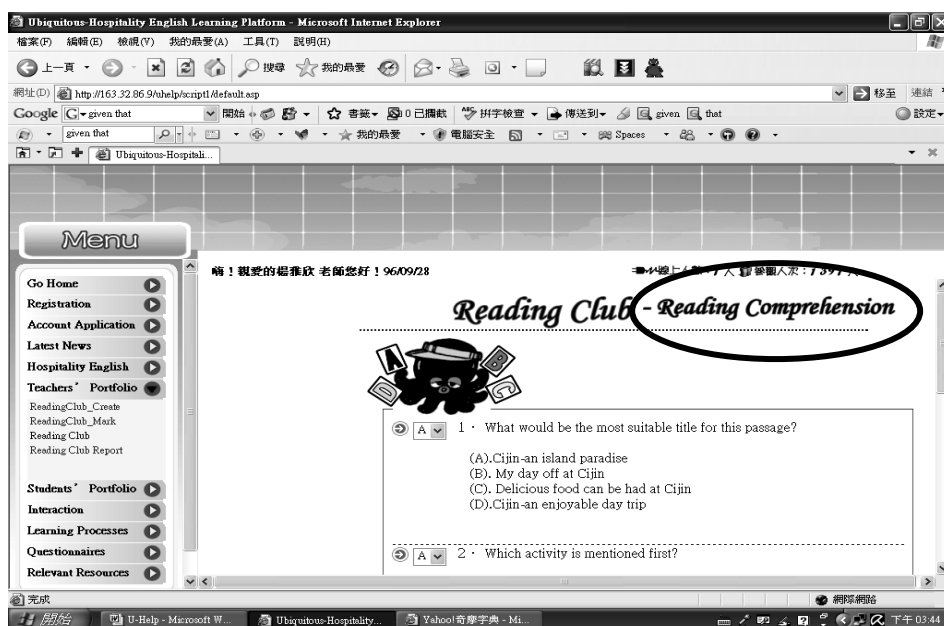


Figure 8. The sample page of Reading Comprehension

Likewise, students can follow the same procedures to complete their other readings. When they finish the three articles, participants are required to complete an online questionnaire (Figure 9). They are allowed to express

their personal opinions about this activity so that the activity designers will realize if the articles suit the students' level, if the platform is too problematic, or if there is a better way to improve the online reading activity. In the end, students need to submit a short essay to express their thoughts about this online reading activity.



Figure 9. The sample page of Online Questionnaire

In a pilot study, 33 four-year vocational college students in the course “English Reading and Writing” participated in the online reading activity. The expository texts consisted of *Cijin*, *Night Market Snacks*, and *Food & Beverage Culture in Kaohsiung*. There was about an average of 520 words per text. Every student read one text each week from a computer monitor. Within 30-minute time constraint, readers were instructed to read at their own paces. After three weeks, students were asked to answer an online questionnaire and write a reading report and upload it to the U-HELP. The whole procedure was then completed. The results of the questionnaire were presented in Table 3.

Table 3
Results of the online questionnaire

Item	Number	Mean	SD
1 I've participated in the relevant online English competition.	33	2.67	1.27
2 I am capable of using the Internet resource to learn English.	33	3.42	1.03
3 I think these texts help me understand the culinary culture of Kaohsiung.	33	3.12	1.11
4 I think the vocabulary match exercise help me comprehend the texts.	33	3.33	0.92
5 I think the multiple choice questions help me comprehend the texts.	33	3.33	0.99
6 I think this activity makes me know better about my own English reading ability.	33	3.19	1.13
7 I consider the U-HELP platform is easy to operate.	33	3.12	1.02
8 I would like to read online information in the future.	33	3.45	1.12
Average	33	3.20	1.06

Table 3 shows that most of the students had never participated in online reading activities. However, they thought that they were capable of using the Internet resources to learn English and had positive attitudes towards this hospitality reading activity. Moreover, they expressed that these texts helped them understand the culinary culture of Kaohsiung. Also, the vocabulary match exercise and multiple choice questions helped them comprehend the texts. In addition, they considered that this activity made them know better about their own English reading ability. Finally, they regarded U-HELP as easy to operate and they would like to read online information in the future.

With regards to the reading reports, there were several issues mentioned. First of all, reviewing was more difficult with the web-based reading materials than with the regular textbooks. Second, online reading made eyes uncomfortable and get tired easily. Finally when doing the follow-up exercises, it was inconvenient because students could not go back to read the articles. These results indicate the negative effects from web-base reading activity. Moreover, students reported

they preferred to use the paper textbooks to prepare for the exams although it was interesting and interactive to read online materials.

Nevertheless, the students' ways of learning a language did change in terms of self-awareness, affective styles, and the cultural aspects. On one hand, a lot of students mentioned that they were very glad to see that teachers are taking a fresh look at the reading learning process. On the other hand, they can understand teachers are guiding students to become aware of their learning styles and to develop strategies to make their language learning more successful. Consequently, the students do appreciate that teachers encourage them to explore their own language learning skills, and acquire successful language learning strategies by introducing online reading.

From a facilitator's point of view, despite some technical difficulties, students' enthusiasm about this reading activity did not decrease. They were eager to know their score results. Therefore, when the website did not work properly, they were disappointed. In brief, this reading club activity has successfully improved students' ICT skills and English reading abilities. Granted that students' English abilities are varied, most of the students have acquired positive experiences in the U-HELP.

Project conduction

The procedures for the students to conduct hospitality-related projects are presented as follows:

1. Students are provided with a guideline to familiarize them with the Project Conduction area (Figure 10).

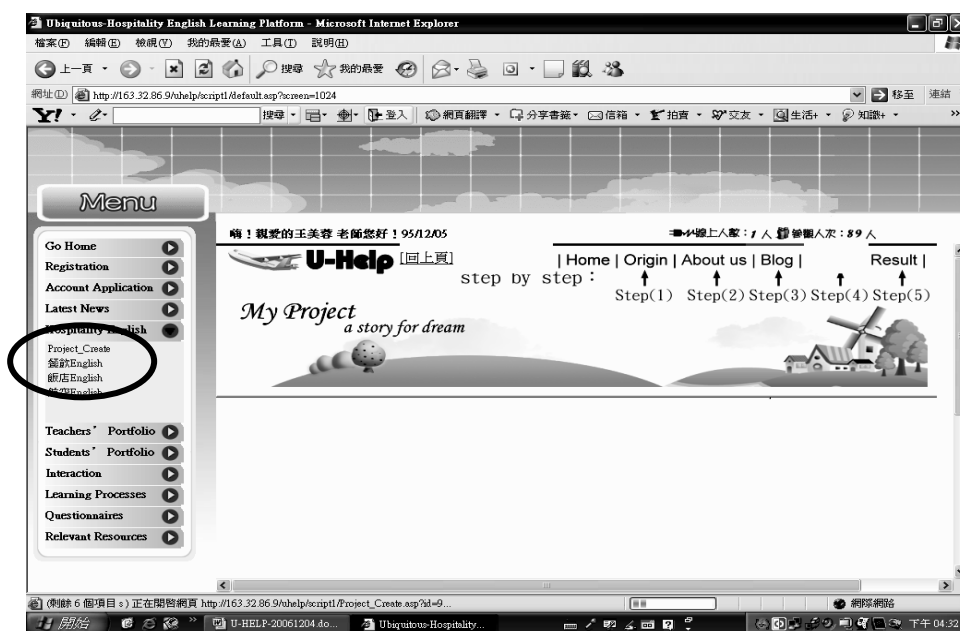


Figure 10. A welcome page of the area “Project Conduction”

- The subjects log in the U-HELP and discuss the schedule in the project conduction area (Figure 11). In this area, the subjects can plan the date and the progress of the project.

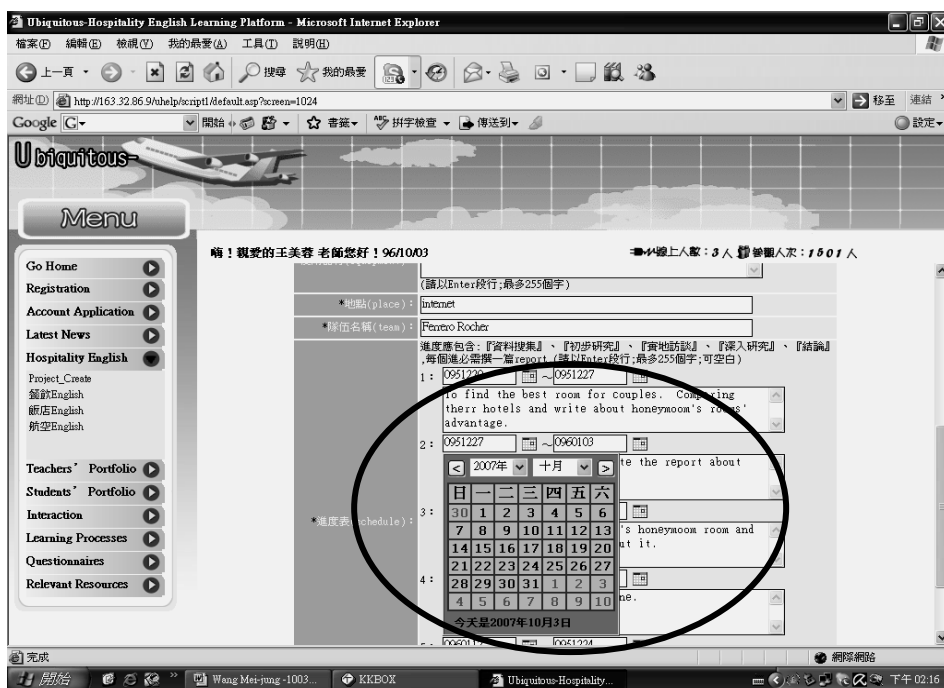


Figure 11. The sample page of Schedule Making

- Then, they upload their pictures and self-introduction in the area of “About us” (Figure 12).

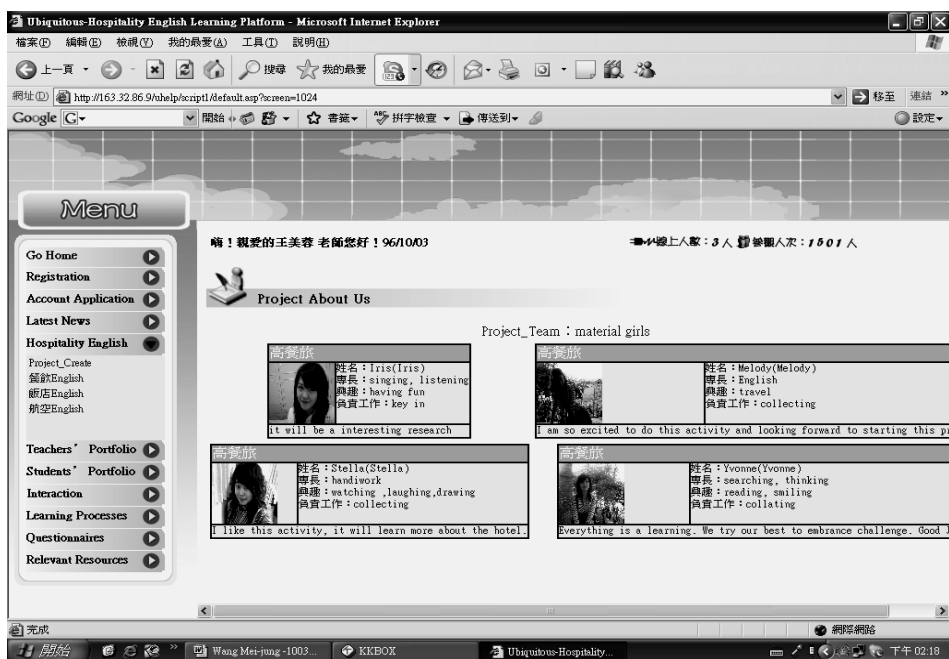


Figure 12. The sample page of About Us

4. Next, they conduct the project. The area marked “Blog” was provided for group members to post their drafts and discuss with one another (Figure 13)



Figure 13. The sample page of Blog

5. Finally, the students post their final project in the “Report” section. A sample page of students’ final project is illustrated in Figure 14.

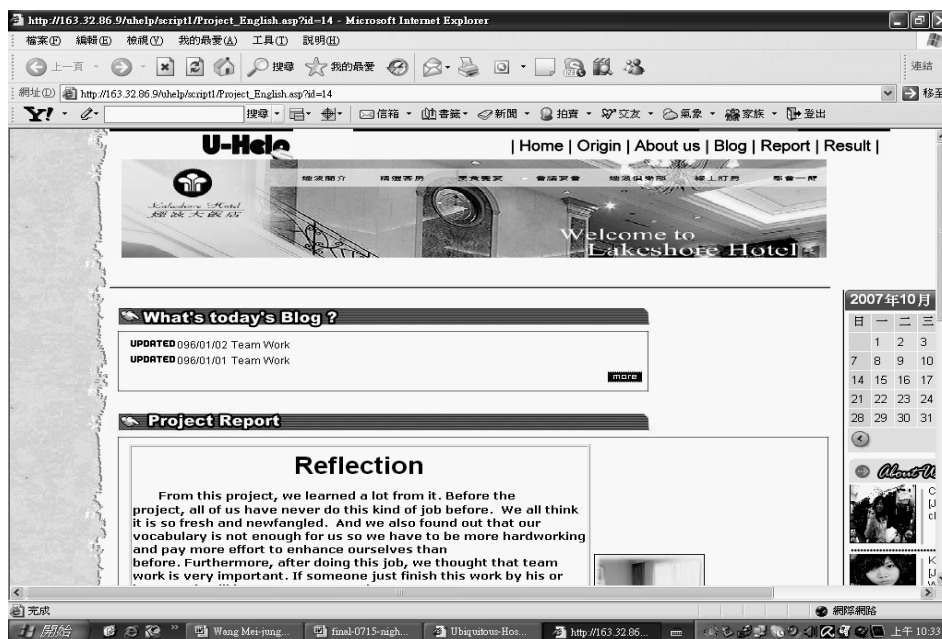


Figure 14. The sample page of **Report**

6. Students can make use of Online Discussion Board to express their ideas and share their learning experiences with each other.

To complete the projects in the U-HELP, students must be active learners and collaborate with their peers to construct their own knowledge. They have to form groups and formulate topics. Then, they learn to decide on learning tasks and establish the exploring processes and the procedures. Afterwards, they seek the resources to conclude the project. In such a learning process, the focus will be shifted into student-centered and learning-centered education, reinforcing current pedagogical trends (MacGregor, 2002). Consequently, students will take more responsibilities for their own learning and develop their critical thinking abilities. In addition, certain parts of the learning processes can be recorded. For example, the platform records the log-in time and frequency, students’ final projects,

teachers' instructional activities, and the results of online questionnaires. These records help teachers monitor students' progress. Furthermore, students can conduct peer evaluation to learn from one another in accordance with social constructivism.

Finally, the learning processes in the U-HELP are interactive, collaborative, and creative. Students learn to develop skills to access information from appropriate sources. In addition, they critically analyze and evaluate information. Then, they apply information for effective and creative decision-making. It is hoped that students improve their abilities to locate, evaluate, manage, and use information in a range of contexts and learn to appreciate lifelong learning and strengthen their own developing position as a learner in relation to the field of knowledge or profession.

In an ongoing study which explores the effects of hospitality English projects construction on the U-HELP, 26 students in the Department of Applied Foreign Languages participated in the study. Their attitudes toward the process-oriented activity conducted in U-HELP will be investigated. Data will be collected through questionnaires and final reports. The initial findings show that the subjects held positive views towards web-based learning and the interface design of U-HELP. Moreover, students' responses revealed that the web-based projects can enhance cooperation, improve hospitality English, and promote cognitive skills. More details will be revealed when the study is completed.

CONCLUSIONS AND SUGGESTIONS

The U-HELP has the potential to help teachers create an environment where every learner can access a multitude of resources and pursue some areas in more depth. Teachers can take advantage of modern technology to help students learn more actively and creatively. In addition, the U-HELP contains various strategies to encourage problem solving and collaboration among learners. In the U-HELP, teachers can design hospitality English materials which students can master according to their own learning pace. Moreover, teachers can guide students to conduct projects related to hospitality industries. Finally, the learning processes recorded in U-HELP offer teachers relevant information for in-depth investigation of students' language learning and interaction. As far as students are concerned, the U-HELP offers students many opportunities to practice hospitality English through the process-oriented and problem-based projects in the platform. They will learn hospitality English at their own pace. At the end, students' work will be saved as e-portfolios for teachers to assess students' efforts and for students to learn from each other.

Web-enhanced learning in higher education has grown exponentially because it offers obvious advantages by making access to education at any time or place feasible. Consequently, Web-enhanced learning is becoming widely available and adopted by educators as a supplement to traditional instruction. Technology in the classroom has the potential to transform the way that teachers teach and the way that students learn, because it can extend the walls of a classroom to the four corners of the globe. Nevertheless, the effectiveness of modern technology in practice depends to a large extent on how teachers and students exploit it. Simply introducing new powerful teaching aids in the regular routine to allow students to obtain better results will not make much difference. A more complicated process that alters the perspective of both teachers and students in the way that they consider the language and what they can do with it is of great importance.

Both students and teachers must learn how to use technology to seek, to organize, to analyze and to apply information appropriately. More importantly, the choice of introducing communication through ICT in language teaching involves a modification of the way to seek and to select language materials, to build activities, to assign tasks, to organise work in class, to plan projects, to state objectives, and to collaborate with other teachers, schools, and social institutions. In such a process, teachers must reconsider the role of language and the language teacher, teaching activities and syllabus design. It is possible to use new tools inside traditional frameworks only if the teachers previously redefine their objectives, their ideas of school and teaching, and their teaching methods.

Pedagogical innovations require, however, that instructors become not only proficient in the pedagogy but also knowledgeable about current technological applications and tools. Teachers, both pre-service and in-service teachers, must be provided with relevant training to apply pedagogical innovations. Teachers can thereby become transformed from “routine experts”, who have learned a set of routines that can be complicated and sophisticated, to “adaptive experts” who are more likely to relish challenges that require them to extend their knowledge and abilities. Moreover, collaboration with colleagues is important. Faculty collaboration almost invariably stimulates growth. In any learning community, teachers can try new approaches in their own teaching as a result of their collaboration with colleagues. They can observe successful strategies of other teachers and then add to their own teaching routine.

Most language teachers who currently apply CALL or web-based instruction in their own classes adopt and adapt existing technology-based materials or learning environments to a specific course or learning program. There is rarely software that might be used by teachers for their teaching contexts without modification. Significant customization and expansion are generally needed to integrate technology into the curriculum in a way that maximizes learning

opportunities and language exposure. Therefore, collaborations among teachers across course subjects are essential. Collaboration among teachers of various subjects is required to invent and to pioneer modern technology that can improve the electronic literacies of students. For example, language teachers can concentrate on the content of the instruction while computer teachers focus on the design of the web-based learning environment. In this way, breakthrough techniques that greatly improve fluency and comprehension can be invented and introduced into language classes. Another important way to integrate technology into powerful learning environments would be to involve students in designing instructional units that channel student creativity into effective language-learning activities. Under a teacher's skillful guidance, students can gain valuable language practice while they develop cultural web sites, undertake digital video class projects, and establish contacts with students in other cities and countries through Internet-based, multi-user and interactive environments.

Finally, an adaptive web-based training platform is sought. As it is beyond debate to integrate ICT into language instruction, it is worth noticing that the future success of e-learning depends strongly on the quality of "content" being made available to a possible user and in particular on the degree of matching between the type of information to be delivered and the type of technology available for this purpose. Moreover, e-learning environments can be computer-supported and collaborative learning environments that focus on the socio-cognitive process of social knowledge building and sharing. It is in these pedagogically innovative environments that future researchers might investigate how learning based on technology affects language acquisition. If such a constructive web-based learning environment can be established, learning will surely occur. In this sense, most language teachers welcome this alternative instructional environment which can develop students' critical thinking abilities and self-regulated learning strategies that are highly needed in modern fast paced information age.

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