FOREIGN LANGUAGE DISTANCE EDUCATION: THE UNIVERSITY OF HAWAI’I EXPERIENCE

The overriding rationale for distance education is accessibility: making opportunities for learning available to those who would otherwise not have such opportunities. The College of Languages, Linguistics and Literature at the University of Hawai’i at Mānoa has undertaken research and development initiatives and become a leader in distance-delivered language education because practical necessity has required it. Hawai’i is the most isolated state in the United States, and its island geography makes its citizens isolated not only from the mainland but from one another.

What is the responsibility of the University of Hawai’i at Mānoa in urban Honolulu on O’ahu to answer the request of the student at Maui Community College who wants to study Chinese even though it is not offered on her campus? What is the responsibility of the University of Hawai’i to answer the request of the businessman in St. Louis who wants to undertake language study in preparation for a work assignment in Seoul? What is the responsibility of the University of Hawai’i to answer the request of the students at a small liberal arts college in Iowa who have studied two years of Japanese but cannot continue because there is not a cohort on their campus large enough to justify a third year course?

In the United States, language education is increasingly divided into the “commonly taught languages” and the “less commonly taught languages” (LCTLs). Spanish is commonly taught; Korean is less commonly taught; Filipino, Samoan, and Vietnamese are much less commonly taught. Yet in Hawai’i, Japanese is the most commonly taught language, and at the University of Hawai’i it is possible to study a four-year sequence of Chinese, Filipino, Hawaiian, Ilokano, Japanese, Korean, Samoan, or Vietnamese, as well as French, German, Russian, or Spanish. Ideally, learners throughout the United States should be able to study LCTLs offered at UH which are not offered in their own locality.

In an attempt to meet the needs and fulfill the desires of heritage students, isolated “nontraditional” learners, and small educational institutions offering lower division language programs only, the University of Hawai’i sought support from the National Security Education Program (NSEP) to embark on a plan to deliver less commonly taught languages via distance education. This case study is a report on Hawai’i’s efforts to develop models for delivery of critical languages via distance education.
The University of Hawai'i has received two grants from NSEP to carry out distance education projects in critical languages. The first was a two-year grant conducted 1995–1997 to develop a model a) to facilitate the broad-based teaching and learning of LCTLs via interactive television (ITV) so as to reach underaccommodated regions and populations and to increase U.S. capacity in critical languages, b) to create a 2-year (four semester) distance-education course sequence in Mandarin Chinese and to field test and deliver the course over ITV with integrated Internet formats, and c) to disseminate electronically a teachers’ manual modeling current pedagogy for teaching via the medium of ITV.

The second two-year grant, conducted 1999–2002, again focused on development and dissemination of distance education models. In the area of dissemination, a series of workshops was conducted nationwide to teach faculty to use to their advantage interactive television and integrated formats in distance-delivered, performance-based language teaching. Since most ITV language instruction takes place across multi-campus public institutions, the workshops were conducted via the ITV medium itself to faculty participating at multiple sites within the same systems.

The development component of the second NSEP grant focused on creating and teaching World Wide Web (WWW)-delivered upper division Chinese and Korean language courses. The model featured advanced, third-year reading-writing and listening-reading-writing courses utilizing CD-ROMs developed at the University of Hawai'i and featuring authentic source material and activities.

At all stages of the course, the teacher was actively involved with the students via a Web forum, which facilitated the carrying out of daily tasks and team assignments. The teacher managed and monitored student progress and gave feedback through numerous lesson phases, including a Grammar Clinic where selected student postings were identified and “workshopped” by the class. A language exchange near the end of the term also featured Web-based exchange with native speakers in Taiwan or Korea. Student feedback was elicited via anonymous Web-based questionnaires at various points during the course.

As has been stated, the two UH NSEP grants were carried out to meet the immediate needs and fulfill the desires of heritage students, isolated “nontraditional” learners, and small educational institutions lacking upper division courses. Additionally, however, the University of Hawai'i, through its NSEP grants, also sought to undertake research in two increasingly interrelated areas: a) learning theory within the context of technology-delivered distance education, and b) approaches to language pedagogy within the context of technology-delivered distance education.

Constructivist learning theory postulates that learning is the process of constructing knowledge from experiences (Driscoll, 1994); social constructivists believe knowledge is accumulated by learners through social interaction (Vygotsky, 1978). Therefore, the process of knowledge construction depends not only on the
individual learner but on the interactive environment. What are the implications of Vygotskian learning theory on constructing and coordinating Web-based courses and nurturing online language learning communities?

Most Web-delivered courses tend to be content-based. For example, a history course focuses on mastery of material relating to events in a specific time period. It is not difficult to imagine a Web-based history course featuring off-line readings and some online dialogue culminating in a research paper. But what of the Web-delivered, performance-based language course? How does the instructor teach students to read and write in Chinese on line?

This case study will provide a brief report on Hawai‘i’s ITV methodology workshops and Web-based courses, and research findings focusing on instruments and procedures for evaluating Web-based learning environments, Web-based learning experiences, and Web-based learning outcomes.

THE UH APPROACH

The University of Hawai‘i began its distance education initiatives in 1995 as part of an effort to establish models for bringing instructional resources in less commonly taught languages to widely dispersed, underserved populations of learners. To this end, under two separate grant initiatives funded by the National Security Education Program, project teams from the Second Language Teaching and Curriculum Center of the College of Languages, Linguistics and Literature worked over several years to devise, test, and disseminate strategies for the design and delivery of foreign language instruction via distance education media. The principal goal of the first project was to develop and deliver beginning and intermediate level instruction via ITV; the goal of the second project was to develop and deliver instruction at the advanced level via the Web.

In this chapter a description of the ITV and Web courses will be followed by a more detailed examination of outcomes in one Web-based course.

ITV COURSES

The primary motivation for offering language education at a distance is to reach populations of learners to whom instruction in the language would otherwise be unavailable. Among the various options for delivery of distance education, ITV most closely replicates the environment of the traditional bricks-and-mortar classroom. Two-way audio and video enable learners to participate in listening and speaking activities that would be impossible to replicate in other distance-education media, such as the Web. Since listening and speaking skills are particularly important at beginning levels of instruction, ITV is very suitable for delivery of beginning and intermediate language instruction. This is why ITV was chosen in this distance education project as the medium for delivery of first- and (subsequently) second-year Chinese language instruction to students at multiple
UH system campuses throughout the Island State where postsecondary Chinese language instruction would otherwise be unavailable.

The University of Hawai'i system, which includes all the state’s community colleges as well as its three four-year campuses, is fortunate to possess an outstanding interactive television system which was created by an act of the legislature of the State of Hawai'i in 1984 and fully deployed in 1990. The infrastructure of the Hawai'i Interactive Television System, or HITS, enables full-motion two-way video to be carried via point-to-point microwave transmission between multiple locations throughout the Islands. As part of the University's Information Technology Services (ITS) division, HITS makes its technology and personnel available for the delivery of instructional programs to parts of the state where they would otherwise be unavailable. Most of these programs originate at UH Mānoa in Honolulu, the flagship campus of the UH system, and can include up to four additional remote classroom sites participating via two-way video. The existence of HITS made Hawai'i an excellent proving ground for the development of instructional models for foreign language via ITV. Prior to this project, courses in foreign language had never been offered over HITS. The focus of the project was to discover ways to implement task-based, communicative language learning activities in the ITV context.

The first Chinese ITV course, CHN 101, was launched in Fall 1995, with a complement of 11 students at Mānoa and 15 students distributed across four remote sites on three islands. Students who enrolled at these “remote sites” included those who were interested in Chinese language for reasons connected with their profession (such as a doctor of Chinese traditional medicine), those who were interested in traveling to China, and community college students who wished to complete the foreign language study requirement for their BA degree before transferring to a four-year campus. Over the next 2 academic years, the course sequence was expanded to cover a full two-year sequence, with first- and second-
year courses running simultaneously. Several of the students from the original CHN 101 cohort continued taking HITS Chinese classes for the full two-year sequence.

Administrative preparations and provisions: Meeting the challenges

ITV-based foreign language education is presented with considerable administrative complications as it reaches across campus-to-campus — and even institution-to-institution — boundaries to bring together scattered populations of learners. Registration procedures, tuition rates, and publicity all pose challenges that must be resolved in order for ITV courses to be offered successfully. As a result of this project, much knowledge was gained about administrative aspects of offering courses over ITV. Much of this knowledge came to light during the instructional planning phase.

Registration of students from multiple campuses was facilitated by an existing systemwide arrangement under which registrars at the various campuses of the University of Hawai‘i system processed registrations on behalf of the originating campus. Academic credit is automatically and directly transferable from one campus in the University of Hawai‘i system to another, so issues of credit transfer did not arise. However, there was no unified system for publicizing HITS courses across all campuses, and publicity varied in scope and quality. Recruiting students was difficult in locales where publicity was weak. Given the UH experience, foreign language distance educators planning courses would be well advised to pay close attention to publicity and the facilitation of cross-campus recruitment and registration.

Tuition discrepancies were the major point of difference between campuses that caused headaches for the course developers. Courses offered on HITS are “housed” at one school, usually the campus of the University of Hawai‘i system from which the program originates. This most often is UH Mānoa. Most courses on HITS are part of professional degree programs such as nursing or business, and registration for the courses is only possible by matriculating in the program, which is offered by UH Mānoa. Tuition for these courses is charged at the four-year campus rate, which is considerably higher than at the two-year community college campuses. The lower-division Chinese courses did not fit into this “professional training” model. University of Hawai‘i system community college students who are not in professional training programs expect to pay community college tuition for lower-division courses, which they often subsequently transfer to a four-year campus when they matriculate there. If offered at the four-year-campus tuition rate, the Chinese courses were not competitively priced and were too expensive for community college students.

It became clear that no matter what solution was adopted, cross-campus differences in tuition were always going to be difficult to resolve. In the end, in order to attract students at multiple campuses, the course was offered under a special arrangement free of charge to students at remote sites (i.e., at the community colleges). This tuition waiver was possible only with the support of external funding from NSEP. In
the second year, this arrangement was modified by cross-listing the course at a community college and at the four-year campus, thus enabling students to register for the course through the community college, paying the lower rate. But this resulted in reduced tuition revenue for UH Mānoa, the originating campus. If the instructor’s salary had not been supported by external funding, the course could not have been offered. All of these arrangements required considerable time and effort on our part as well as the cooperation of support staff in many locations. Tuition differences across campuses and the ability of the targeted student population to pay, as well as the balance between tuition revenue and instructor compensation, will be important considerations for institutions planning to offer ITV-based language courses.

Another issue in offering the courses across campuses was reconciling academic schedules. While the academic calendar was the same, class times during the day differed from campus to campus. HITS programming slots were only available at the top of the hour, while on most campuses classes began at half past the hour. For many students, the 50-minute class stretched across two class periods on their campus, creating conflicts which reduced the courses’ attractiveness. In the end, only students who could tolerate the conflict enrolled. Although it seems a small detail, the issue of class times and academic calendars can pose major challenges for institutions offering courses via ITV.

Instructional strategies for ITV delivery of foreign language instruction

ITV is a special educational medium requiring adaptation of instructional strategies — namely, adaptations in classroom organization, student grouping, and in content or document delivery. As mentioned in chapter 1, among all the different distance education media — including Web-based instruction, one-way TV, and others — ITV is the medium that comes closest to recreating the traditional classroom setting. Nevertheless, there are great differences between the ITV classroom and the traditional classroom, as the following discussion will illustrate.

Classroom organization

Well-trained language teachers know the importance of managing classroom space and time through careful organization of seating arrangements, teacher position in the classroom, activity duration, and so forth (see, e.g., Gower, Philips, & Walters, 1995). In the unique environment of the ITV classroom, assumptions that are taken for granted in the ordinary classroom, such as relative freedom of movement or easy audibility, no longer hold. Students and teacher are placed into an audially and visually fragmented environment in which speaking to one’s classmates or forming groups for a communicative activity requires deliberate effort. In this environment, classroom activities must be adapted from their usual forms if they are to work at all, and both students and teacher must learn new ways of participating in the classroom community.
An ITV class is conducted simultaneously at multiple locations: the originating site, where the teacher is located; and one or more remote sites. These sites are connected by video lines. Several cameras at the originating site are available to capture the image of the instructor and/or the students there. Each remote site has, in general, only one camera, which captures the image of the students at that site.

As shown in Figure 2, each remote site is connected separately to the originating site, where the video signals coming in are:

- displayed on television monitors along the back wall of the classroom, so that the instructor can see all sites at all times; and
- made available to the engineers as potential material for display on the “program” signal, alone or in combination with other images. (Figure 3 shows the mixing board where incoming signals are mixed and sent out again “on program.”)

Figure 2. Schematic of originating classroom and remote-site classrooms
The “program” signal is sent out to all sites, where it appears on the television monitor at each site (including the originating site, where it is visible on at least one monitor). Since the “program” signal is the only signal received at the remote sites, students at those sites only see what is placed “on program.” They do not see the entire class at all sites in the same way the instructor at the originating classroom does. The instructor must take care when conducting activities to make sure that all relevant visuals are visible on program.

Figure 3. Control room: Images from various sources are available for placement “on program”

The teacher in the ITV classroom sits at a special “station” at the originating site which consists of a chair and table plus special technical equipment, and faces the class (see Figure 4). This furniture configuration is similar to that in the traditional classroom except for the presence of the additional equipment. The presence of the equipment and the necessity of avoiding sudden moves out of camera range limit the instructor’s mobility and create a certain amount of separation from the students, even at the originating site. The sense of separation between teacher and students, and between student and student, can be even more pronounced at remote sites, where students generally sit in rows facing a camera and a monitor. With no live teacher in the remote-site classroom, the spatial environment is centered more around the television monitor, while in the originating classroom, the students have to decide whether to watch the “real” teacher or the teacher on the television monitors. With planning and experience, the sense of physical and psychological separation engendered by the technology can be mitigated through use of the technology to create interaction and a sense of community on program, equalizing the remote sites’ and the originating site’s sense of participation and access. Pair- and group-work, or the adaptations of pair- and group-work described below, are especially useful in creating this sense of community, since they tend to engage the student as a communicator rather than as a mere spectator.
As the first UH Chinese course began on HITS, time was required for both teacher and students to adjust to this unfamiliar medium. Training for ITV instructors and students was provided by HITS support staff, covering on-camera behavior such as verbal self-identification, use of the visual presenter (also known as a document camera or ELMO®), and use of the microphones. This training, while helpful, was not geared to the special needs of communicative language instruction, and it soon became plain that the generic teaching and learning behaviors reflected in the training were suitable only some of the time in the language classroom. The ITV medium is naturally suited to a “talking head” style of presentation — that is, teacher-fronted lectures with intermittent display of visual media. But current language teaching practice has removed teacher-fronted activities from the central role and instead emphasizes communicative use of language in naturalistic situations, with a special focus on communicative tasks. Therefore special efforts were needed to adapt language teaching activities for use in the ITV environment.

Student grouping

In the communicative language classroom many classroom activities typically involve pairwork (including serial pairwork or “mingling”) and small group work. The ITV medium poses challenges for implementing these activities. As the Chinese ITV course continued over several semesters, a set of strategies for adapting such activities was developed. These adaptive strategies can be roughly divided into two large types. Adaptations of the first type are aimed at reducing or replacing simultaneous channels of communication — in other words, changing the management of activities in which many different people are speaking at the same time. This type of adaptation is necessary because on ITV only one communication channel is available at any one time between sites. The second type of adaptive strategies involves finding effective methods or substitutions for document delivery — in other words, finding ways to deal with the need to distribute visuals (e.g., student drawings), worksheets, and other documents at short notice, even when students are divided across multiple sites. These two basic types of adaptations require careful attention to student grouping, use of the single communicative channel, and use of the images placed “on program” for everyone to see. These adaptations are discussed below.
Instructional strategies pair- and group-work. In the communicatively oriented language classroom, activities in which students work together as pairs or groups occupy significant portions of class time. In such activities, multiple conversations are carried on simultaneously. Part of the reason for limiting the number of students in language skill classes is to enable pairs and groups to form and re-form easily and to enable the instructor to actively monitor group performance. While the design and management of pair- and group-work becomes second nature for instructors in the traditional classroom, those new to ITV may be unaware of the very different conditions in the traditional classroom and the ITV classroom. This lack of awareness can make managing pair- and group-work activities difficult on ITV.

In the traditional classroom, pairs or groups are distributed around the room. All conversations are carried on the same air, and the hubbub may be such that the instructor, doubtless happy that the activity has excited the students, must nevertheless intervene and appeal for everyone to speak more quietly. Even when the noise is considerable, however, pairs or groups sitting together have no problem focusing on one another’s utterances. As long as one is face to face with a conversational partner, it is possible to filter out a considerable amount of background noise. During the activity, the instructor can circulate freely in the room to deal with questions and to monitor individual pairs and groups, perhaps “harvesting” examples of student utterances to deal with afterwards. And when the activity is finished, it is usually not too difficult for the instructor to get everyone’s attention. At this point, groups and pairs may be rapidly reconfigured for an extension of the activity.

In the ITV environment, many seemingly commonsense assumptions about what is possible in an activity are turned on their head. The usually singular, unified classroom environment is fragmented. Assuming that students are present in the originating classroom, the instructor is physically present only for these students. The remote-site classrooms see the instructor only on screen. While communication among students at each site is carried through the classroom air at that site (as in the traditional classroom), conversations across sites — including anything the instructor wants to say to everyone — must be carried over the audio channel. In ordinary F2F (face-to-face) conversation, people speaking to one another can understand one another even if there is background noise, such as other conversations nearby. Non-verbal cues such as facial expressions help carry the message, and it is easy to focus on the other person. But speech carried over ITV audio, somewhat like speech over the telephone, is usually only intelligible if there is little background noise AND only one utterance is being carried over the channel. This means that in any site-to-site communication, only one person may speak at a time; everyone else must listen, or at least not disturb the conversation. At the same time, background noise is more complicated than in the traditional classroom: Each site has its own “hubbub,” which, depending on whether microphones are on or off, may or may not be audible to the other sites. Instructor announcements over the audio channel may go unnoticed if a site is involved in its own hubbub, or if other noise is coming through active microphones. In effect, the
instructor is externalized from the remote-site classrooms, and must adapt special strategies to manage remote-site classrooms “through the screen.”

The physical isolation of one site from the next means that options are limited for reconfiguring pairs and groups for continuation or extension of an activity. At a given site, only so many combinations will be possible. If total enrollment at all sites has been limited to a number corresponding to the usual number in a traditional language classroom, some sites may have very few students, or even a single student who can only be paired or grouped with students at other sites.

While the instructor can manage activities at the originating site in a fashion similar to that in the traditional classroom, adaptive strategies are needed to manage activities at the remote sites and to manage interaction among all the sites. Some general strategies are

- to use a language comprehensible to the technician to issue verbal instructions for the performance of an activity and for technical requirements connected with it, such as certain camera shots;
- to designate specific sites and specific students in one’s spoken instructions, so that both students and technicians know how the channel is going to be used;
- to specify clearly which microphones should be on, and which off, during the activity;
- to issue instructions for configuring (and re-configuring) groups in advance — in other words, to assign partners for one or more iterations of an activity so that no break will be needed to re-group students;
- to set time limits in advance, so that at a pre-arranged signal the activity will shift gears or come to an end;
- to designate a concrete “product” for each communicative activity, for instance a worksheet on which prices must be filled in for at least 10 items based on information received;
- if possible, to model the activity with a student or group of students at the origination site prior to beginning the activity itself (see Figure 5).

If pairs or groups can successfully be formed at each site, then the channel does not need to be used for communication during the activity. In this case, prompts or supporting materials (such as sentence patterns) may be placed on program using the visual presenter or a computer screen, and students can proceed with the activity separately at the various sites. Since the channel is not being used for communication, all microphones are turned off. But in case the teacher wishes to monitor what is happening at a remote site, he may request microphones to be turned on at that site while he listens in with headphones. (The loudspeakers in all
classrooms are turned down, so the material coming through the active microphone does not disturb other students.

Figure 5. Activity modeling: teacher and student at originating classroom try activity first while everyone else listens

Alternative instructional strategies — public and private channels. If pairs or groups cannot be formed “evenly” within each site — for example, if there is a single student at any site — then alternative arrangements must be made. There are two major strategies to approach this problem:

- “Private channel” strategy. Assign one pair or group to interact on program using microphones and (possibly) headphones while everyone else works “traditional-style” (off-program) and ignores the group on program;
- “Public forum” strategy. Substitute a whole-class activity for the pair- or group-work activity, with everyone participating on-program.

If the “private channel” strategy is selected, all students other than those in the on-program pair or group must be in a pair or group at their own site. The group of students communicating on program should be no larger than three or four, but additional students may be assigned a “receptive” or listening role in the activity. Measures must be taken to visually and aurally separate the students on program from other students at their respective sites. This is accomplished as follows:

- If possible, all students on the “private channel” should be visible on screen through the use of split-screen technology. For example, in Figure 6, one student has been placed in an inset.

- At any site where “private channel” users and non-users are together in the same classroom, they should, if possible, be aurally isolated from one another. One practical solution is to have the “private channel” user(s) wear headphones, while the loudspeakers on the television monitors are muted. It is helpful to have an additional pair of headphones available at
the originating site so that the teacher can listen in on the “private channel” users periodically.

Figure 6. One pair uses the channel privately. One student is alone at her remote site; the other uses headphones to block “hubbub” at her own site.

While the “private channel” strategy may seem elaborate, after a few attempts it tends to run more smoothly as it becomes part of the classroom culture for students, the instructor, and the technicians. In the follow-up phase of the activity, when the instructor has drawn everyone’s attention back together to “see how things went,” the results from the “private channel” pair or group can simply be integrated with the results from other pairs or groups in the checking process.

The “public forum” strategy may take a number of forms, but its basic intent is to consolidate many pairs or groups into one large group — the entire class — while still giving every student a chance to speak. A typical adaptation is to take so-called “serial pairwork” activity and change it into a panel discussion. A serial pairwork activity, as realized in the traditional classroom, is one in which students interact briefly with a series of partners to get one piece of information from each. A typical serial pairwork activity, “Who Drew This?”, is described below, followed by a description of its adaptation.

- In preparation for the traditional classroom version of this activity, each student is asked to create a visual representation of something he is going to talk about. For example, if the task is to find out facts about where someone went on vacation and what kind of transport he used to get to each destination, students are directed to draw a map of their trip with destinations numbered and icons of trains, planes, and so forth between the destinations. The drawings are not to be labeled with the artist’s name.

- Before the instructor gathers the drawings, he directs the students to make sure they will be able to answer questions about the places they went and how they got there. Then he gathers the drawings and either displays them all in a central location or redistributes them so that each student receives a drawing he did not make.
• Students interview one another about their trips with the objective of identifying the author of each drawing. If all drawings are centrally located, then after interviewing one partner, a student can point to the correct drawing, and then move on to the next partner. If each student has received a drawing, he interviews partners until he finds the person who made the drawing he has received.

In the ITV classroom it is not possible for students to rotate through partners at multiple sites, so a “public forum” adaptation of this activity may be performed, as follows:

• Once students have made their drawings, the teacher chooses one. If the chosen drawing is from the origination site, the teacher keeps track of who drew it, and without revealing that person’s identity displays the drawing on the visual presenter. Alternatively, the teacher may request that one of the drawings at a remote site where there are at least three students be placed on the visual presenter there. (In this case, the teacher may not know who made the drawing.)

• Without revealing specifically who made the drawing, the teacher directs the camera to show three people sitting in a row, one of whom is the author of the drawing. The image of this “panel” is placed on program along with the drawing via split screen technology (See Figure 7).

• Opening a “public forum,” the teacher directs all members of the class to ask questions of the panel members about their destinations and how they got to each. Each student must ask one question, which may be a repetition of an earlier question.

• After the round of questioning, the class is asked to identify the author of the drawing.

Figure 7. “Public forum” adaptation. The panel members (at top) are interviewed about their respective journeys to see whose description matches the travel map.
In using the adaptations described above, the teacher’s approach to giving students feedback need not change. Generally speaking, the approach favored in current pedagogy is to allow communication to proceed uninterrupted unless students request help; erroneous utterances heard during communication can be brought into focus at the end of the activity.

The “private channel” and “public forum” adaptations cover a lot of situations, but may not suffice for every eventuality. Creative instructors must experiment until they find adaptations that work in their particular situations.

**New strategies for document delivery and display**

As mentioned above, aside from strategies for student grouping, the other large category of adaptive strategies for ITV-based foreign language instruction centers around finding effective methods or substitutions for document delivery — in other words, finding ways to deal with the need to distribute drawings or worksheets at short notice, even when students are divided across multiple sites.

In the communicatively oriented language classroom, many activities require students to work with visual artifacts and documents, such as drawings and written descriptions. In such activities, a visual and its corresponding written description may be separated and distributed at random to students; the student task is to match up each description with its corresponding visual by reading and understanding the description.

This theme of matching visual to text can be extended to listening and speaking; creation of the drawing or artifact may be woven into the activity itself, as when a student draws a representation of what his partner is saying. The common thread among the variants is that they all require redistribution of drawings and documents among students. In the traditional classroom, this is a simple matter of gathering up the pieces and passing them out again, or posting drawings on a bulletin board. In the ITV environment, documents can be distributed by the alternative means of mail, fax, and visual presenter. Choosing the appropriate alternative in each instance of requires consideration of a number of factors.

Worksheets, tests, or visuals that the instructor can prepare well in advance of a certain date can be duplicated and mailed to arrive in time to be distributed by on-site staff. Naturally, this means of distribution is preferred by ITV support staff, since it is most convenient for them. As mentioned above, however, modern language pedagogy stresses the importance of student-centered, communicative activities, and much of the time these require the use of student-produced writings and drawings. Because mailing requires a long lead-time, it is not a good means for distributing student-produced content. In most cases, instruction moves too quickly for regular mail to be useful as a means for students to exchange writings or visuals based on a current lesson.
Fax transmission can serve as an alternative for document delivery, but faxing has its limitations, and so it cannot serve as a simple substitute for passing documents by hand. Any document that is transmitted by fax must be handled on the far end by ITV support staff, whether receiving or sending. Clear instructions must be provided with documents faxed to remote sites as to whether the documents must be copied and distributed, distributed individually, or handled by some other arrangement. Fax transmission is suitable for black and white line drawings, but not for color or high-resolution items. Items written or drawn in pencil do not transmit well.

The visual presenter enables display of documents, visuals, or small objects in full color. Text documents in letters smaller than 36 points or so usually cannot be displayed in their entirety; for smaller text to be read, a portion of the document is viewed in a zoom (close) shot.

Adapting an activity for the ITV classroom

The following is a practical example of the adaptation of an activity for the traditional classroom for use in the ITV instructional format. The activity is communicative and task-based; in other words, information flows from one student to another via the target language (in this case, a written text), and the information is used to accomplish a purpose (the matching of a text with a drawing or other graphic). The various steps that must be taken to implement the activity are outlined in detail.

Reading/writing activity “Who wrote this?”

In the traditional classroom version of “Who wrote this?” each student creates a “visual” (a drawing or graphic) and a matching text on the topic of the assignment — for example, a picture of a yard and a house with a corresponding written description. The visuals and the texts are gathered by the teacher and any names are erased. The visuals are displayed at a central location (such as a bulletin board); the texts are redistributed. In the reading portion of the activity, students read the text they have been given and attempt to match it to its corresponding visual, relying only on information in the text. Students may trade texts for a reiteration of the activity.

A close replication of the traditional classroom version of “Who wrote this?” is impossible, or at least impractical, in the ITV classroom. Simultaneous display of all visuals (as on the bulletin board) is impossible in the ITV medium. Only one, or perhaps two, visuals may be displayed at once on the visual presenter. Redistribution of all visuals and texts would involve two series of faxes: first, remote-site students would have to fax visuals and texts to the originating site, and then the originating site would have to fax visuals and texts for individual redistribution to the remote sites — an extremely cumbersome and time-consuming proposition.

There are two basic approaches for adapting the “Who wrote this?” activity for the ITV classroom. Both involve selective use of the fax and visual presenter.
Alternative 1. Before class, remote-site students fax their writings to the instructor. The instructor chooses three writings from any three students (originating site or remote site) and copies them, or cuts-and-pastes them, onto a single page, which is then faxed to the remote sites. In the best case, copies of this fax are made on the spot for each remote-site student. The same sheet may be copied for the originating-site students, or they may receive randomly distributed writings by their classmates. The instructor first asks students to read the writings they have received, singly or in pairs or groups, and to predict the appearance of the drawings that would correspond to the readings. The instructor then uses the visual presenter to display drawings from the origination site sequentially, and asks students at the remote sites to use their visual presenters to do the same.

Each time students perform a positive identification between the drawing on display and the writing they are looking at, they are asked to call out. At this point, they may be asked to read aloud so that others can confirm their ID. This adaptation may be seen in Figure 8.

Alternative 2. If faxing is not possible, a whole-class version of the activity may be implemented using the visual presenter exclusively. The instructor gathers writings and drawings from the originating-site students. The instructor displays one drawing and asks students to work in pairs to predict what they will see in the corresponding writing. The instructor then displays writings sequentially for students to read, and asks students to call out when the writing that matches the drawing appears.

Figure 8. Students placed into a split screen read aloud a student-produced text they have received to confirm that it matches the student-produced visual the teacher has displayed on the visual presenter.

The Hawai‘i ITV experience

The project team found that despite its vast differences with the traditional classroom, ITV is a viable medium of instruction for all the skills that are taught in the bricks-and-mortar foreign language classroom, as long as careful consideration is given to the adaptation of communicative activities to suit the demands of the ITV environment. During several years of experience with Chinese language instruction via ITV, the project team observed the following:
Student reaction to the courses, as indicated in end-of-semester evaluations and day-to-day interactions, was favorable. Students with no other alternatives for taking Chinese were particularly appreciative of the courses.

Student participation in the classroom community, despite the constraints imposed by the medium, was active and social, especially during communicative activities, according to teachers' reported experience. Despite geographical separation, students at different sites got to know each other during the classes, forming a single, cohesive classroom community.

Student achievement was comparable to that in the traditional classroom, despite the extra time needed to deal with the special demands of the ITV medium: setting up activities, communicating with technical personnel, sending and receiving faxes, and a greater proportion of “are you there?”–type phatic communication than in ordinary classroom discourse.

Students were successfully streamed into other courses, or experienced communicative success when traveling in the target language environment (China and Taiwan).

Access to Chinese language instruction at the postsecondary beginning level was broadened statewide.

ITV proved a robust medium for the delivery of communicative language instruction at the beginning and intermediate levels in all four skills.

In order to share our experience with foreign language instructors using ITV at other institutions in the United States, the project team developed Web-based and workshop resources. The following tasks were completed as a dissemination component of this project:

- “Best practices” for foreign language instruction via ITV were disseminated nationwide via a summer institute and accompanying videoconference, as well as three well-received workshops, each serving multiple locations via ITV, at state universities in California, New York, and Wisconsin.
- A Web site, http://nflrc.hawaii.edu/sfleming/flitv, was developed and published to serve as a resource for ITV-based foreign language instructors.

WEB-BASED COURSES
As mentioned in chapter 1, ITV represents the most appropriate choice for beginning and intermediate language classes. Current language pedagogy stresses the importance of all four skills in the early stages of language training. ITV is currently the only distance technology that offers a communicative environment comparable to a bricks-and-mortar classroom, and therefore only ITV can provide a distance environment adequate for training in the skills of listening and speaking.
Although exclusively Web-delivered instruction is probably not appropriate for teaching four-skills courses at the beginning or intermediate levels of language study, Web-based delivery is appropriate for skills other than speaking, and is especially suited to higher levels of language study where learners have established a foundation of reading and writing skills they can use independently as a means for two-way communication. The universal reach of the Web extends accessibility to these courses far beyond the reach of ITV courses, offering learning opportunities both for students at institutions not offering advanced training and for mid-career professionals needing development and maintenance of advanced language skills. With this rationale in mind, the University of Hawai‘i has created three Web-based courses for advanced study in Chinese and Korean:

- Advanced Web-based Chinese Reading and Writing;
- Advanced Web-based Chinese Listening, Reading and Writing; and
- Advanced Web-based Korean Reading and Writing.

Prior to the development of the Web courses, UH had produced a set of self-instructional CD-ROMs in Chinese and Korean, with some focused on reading authentic texts and some focused on listening (video interviews). The Web-based classes were conceptualized as communities for learners who would benefit even more from the CD-ROMs if, instead of using them on an individual basis, they joined with other learners to engage in preparatory activities before “entering” the CD-ROM, and then followed up with language practice activities following each use of the CD-ROM. The same development process underlay all the courses; this section of the chapter focuses on the development and delivery of the first course, Advanced Web-based Chinese Reading and Writing.

The overall process comprised the following stages:

- Through a series of meetings, the general sequence of instructional activities was designed and revised on paper. (The instructional sequence is described in more detail below.)
- Several popular commercial courseware packages were examined to determine their suitability for enabling the sequence of instructional activities. All were rejected because the team felt it would be impossible to customize them adequately.
- The programmer undertook to design software and databases that would enable all the instructional activities that had been designed within a password-protected environment, employing a three-tier client/server structure based on Allaire ColdFusion® and Microsoft SQL Server®.
- The team worked together to sketch out the site interface, including the placement of activities on pages, the placement of pages in frames, and the placement of menus and navigation guides in the site. The programmer and Web designer determined the file structure for the site.
• While the programmer worked on software development, the instructional designer proceeded with specific design of individual units. After meeting with the other members of the team to incorporate their suggestions, the instructional designer turned over each unit design, roughed out on paper or typed up as a word processing file, to the Web designer. When all units were developed, they were “mapped” onto the instructional period of the coming semester in a syllabus that laid out the entire semester’s work schedule and due dates.

• The Web designer converted the paper design into Web pages to fit the course interface, incorporating JavaScripting where needed to enable student self-checking of fill-in-the-blank or multiple-choice answers.

• The Web designer handed over the Web pages to the programmer for the addition of ColdFusion Markup Language (CFML) scripts and incorporation into the course site.

• Team members invited guests into the site before the launch of the course to “wander around” and test the functions in the course. Reported bugs were fixed.

• The course site was prepared for the actual course launch. Student usernames and passwords were created, and a student e-mail list created. Instruction proceeded according to the schedule laid out in the course syllabus.

Pedagogic theory and course development

Without institutional resources for the development of Web-based courses corresponding to the technical support that makes HITS courses possible, the Hawai‘i team, comprising an instructional designer, a Web designer, and a programmer, had to rely on its own resources in developing the course. During the development process, these team members with their diverse skills and knowledge worked together, each playing a distinctive role described in more detail below.

The instructional designer was responsible for developing a general sequence of instructional activities that would be followed in all the units, and then developing specific instructional activities for each unit in line with the sequence. The Web designer was actually a language instructor with enough expertise in HTML and JavaScripting to convert the instructional designer’s paper version into non-dynamic HTML and to incorporate some JavaScripting for student self-checking of answers. The programmer created and implemented scripts that enabled the dynamic elements of the course, including passwords and permissions, grading functions, student grouping, “word banks,” and forums.

While the instructional designer was aware from the beginning of the more obvious constraints of the medium — for example, that the course would be asynchronous and that interactions would be restricted to written communication — he was
encouraged by the Web designer and programmer to work without worrying too much about other limitations of the medium. Most of the time, the instructional designer worked on paper to sketch out ideas, which he then revised after meeting with the Web designer and programmer.

The sequence of instructional activities was based on a pedagogic approach grounded in schema theory. Some of the key concepts guiding the design of the course were:

- Readers understand a text through a process of interaction between text-based elements (structural and linguistic components) and reader-based elements (behaviors and strategies such as deploying background knowledge and hypothesizing). The most successful readers are those who employ these skills actively and consciously (Barnett, 1989; Carrell, 1988).
- A reader reading alone has access only to his own reader-based elements. A group of readers sharing information can strengthen each other’s comprehension and contribute to each other’s learning. Creation of community for the sharing of knowledge is vital for good course design.
- An instructional sequence should begin with what students already know, rather than the instructor’s assumptions about what learners know. Learning activities should, to the greatest extent possible, be personally meaningful and communicative.

**Instructional sequence**

In line with the above concepts, the instructional sequence of the course was designed so that each unit comprised the following stages, which are also represented in schematic form in Figure 9.

**Warm-up activities/word bank**

Students share linguistic and real-world background knowledge by filling out Web-forms with vocabulary and sentences. Student responses are accumulated on a guestbook-page for each query, so that all the answers that have been input are visible at a single glance. Answers are also gathered into a course database — a “word bank” for student use.

**Preparatory activities**

Students complete a preparatory matching task at the baseline level (rather than the target level) of the lesson. Instant feedback is provided with a “check answers” button employing JavaScripting.
Core lesson

Students complete the CD-ROM lesson, which is structured according to a receptive-skill lesson model rooted in schema theory, comprising the following five stages:

- **pre-activities** — prediction, activating background knowledge;
- **global activities** — identifying and locating topics, “mapping” the text;
- **specific information activities**;
- **linguistic activities**;
- **post-activities**.
• linguistic activities — learning about linguistic forms in the text; and
• post-activities — using the knowledge gained in the lesson in a communicative task that is a natural outgrowth of the text.

Students can then participate in a “Q&A” forum to troubleshoot any problems they had completing the CD-ROM lesson. Discussion can be in Chinese or English.

Students are assigned a discussion task via e-mail. They are directed to a specific thread in the forum, where they interact with one or two other classmates in Chinese in a role-play or task.

After the students have worked on the task, the instructors choose five or six erroneous utterances (i.e., postings that have syntax or usage problems) from the student discussion threads and place them in the next forum, the Grammar Clinic. Students are directed to respond to two or three of the erroneous sentences by supplying a correction. Finally, the teacher adds comments to each thread, and everyone reads over the accumulated contents of the forum.

Post-lesson activities

Students are told in advance of the final writing task of the unit, which is usually a short persuasive essay related to the topic of the lesson. In preparation, students first read a model text on a topic related, but not identical, to the lesson topic, in which certain linguistic features — usually discourse connectors or other useful tools — are highlighted. Students complete linguistic exercises based on the highlighted items in the model text to strengthen their familiarity with these items.

Students complete a final writing task, usually a written role play related to the theme of the lesson, and post the composition to a threaded discussion. Each student is assigned to respond to two other students’ writings with appreciations and critiques.

A multiple choice quiz based on the content of the CD-ROM lesson is also included at the end of each unit. The quiz is assigned minimal weight in the grading of each unit.

Additional course elements and teaching tools

To assist students in the management of information resources in the course, including vocabulary that has been posted to the Word Bank, outstanding essays, and useful entries from the Grammar Clinic, the course site also features two management tools: the Course Resource Manager and the Personal Resource Manager. The Course Resource Manager is maintained by the instructor and contains resources for all students, such as the complete archive of Word Bank items. The Personal Resource Manager is unique for each student and contains resources that the student has chosen and placed there. These resources are not
contained within the sequence of instructional activities, except that as part of the post-lesson activities students are asked to save or add ten vocabulary items to their Personal Resource Manager that they will use in their final essay.

To assist teachers with monitoring student activity on the course site, managing student usernames and passwords, and assigning grades, the site also includes Instructor Resources. Instructor and student privileges are differentiated such that while the instructor can read and write grades for all students, a student can only view his own grades.

The site also provides access to external informational resources via appropriately placed links to Web-based dictionaries and informational Web sites. In order to look up a word, students need only copy the word from the text at the site and paste it into the dictionary’s search field.

In cyberspace, the most difficult thing to replicate is the experience of face-to-face communication. In this course, a sense of community and peer learning is fostered through providing spaces for learner interaction on the course Web site. As each learner moves through the stages of a unit, he passes back and forth from group work environments to an independent environment. This alternation between communal and independent work reflects stages in the learning process as learners and instructor approach the “core” text in each unit and then come back together to react to the text and use the language learned from it. These “core” texts are multimedia reading lessons contained on a CD-ROM, a copy of which is distributed to each student. Each lesson on the CD-ROM is based on an authentic text and follows a sequence of self-instructional activities based on the same pedagogical principles as the course overall.

In comparison with an equivalent course delivered in a traditional classroom format, this reading and writing class offers many more opportunities for the learner to read and write, since only by reading and writing can he communicate. Time devoted to oral discussion in the traditional classroom is turned into time devoted to reading and writing; the targeted modalities are used to teach the targeted modalities.

Initial offering of the Web-based course at UH

The Web-based course was at first offered only to UH Mānoa students as an experimental prototype using an existing course rubric. To gain an accurate image of how the course looked from the students' side, a small-scale case study of the course was conducted, with data gathered through various means. This study is detailed in the following section.

CASE STUDY OF THE WEB-BASED COURSE

Delivering a language course exclusively via the Web constitutes a paradigm shift in teaching; very little relevant research exists to guide the language teaching
profession in this new endeavor. How should a Web-based language course be
designed and conducted? Will a Web-based language course constitute a valid and
legitimate educational experience? How will students respond to and behave in such
a course? These fundamental questions guided our investigation in this case study.

We wanted to know if a Web-based language course is viable for students and
instructors. We wanted to know more about what learners liked or disliked, and
why. We wanted to evaluate students’ performance. Under what conditions would
they perform well or not perform well? We wanted to know if their language
proficiency would improve. To begin to gather information regarding these
questions, we systematically observed students’ online behavior over a semester
during the inaugural offering of Chinese 399: “Advanced Reading and Writing.”

Chinese 399 student background information

Student status
According to data provided on the student background survey, a majority of
students (9 out of 12) were full-time students at the University of Hawai‘i at Mānoa
in Honolulu on O‘ahu. One student was an instructor at UH. One student worked
full time off campus. Another student living on the neighbor island of Kaua‘i was
retired. The last two students, in particular, were typical distance learners because
they were nontraditional students who probably would not have taken the course if
it had not been offered on line.

Linguistic background
The background survey also showed that five students in the class were originally
from China. All of them immigrated to the US as children and used English as a
their primary language. They all spoke Chinese fluently but wanted to improve their
literacy skills. An online reading and writing course at the advanced level was ideal
for these students.

Motivation for taking the course
Students reported that the instructor’s recommendation played a significant role in
influencing course selection. A number of students in the online course had taken a
traditional course with the online instructor the previous semester and were
personally recruited by her for the distance-delivered course. Scheduling difficulty
was an additional reason some students reported for choosing the online course.
Another Chinese course was canceled at the beginning of the semester, and some
students had a problem finding a replacement course to fit their schedule. The
online course was ideal for them.

Computer skills
As was expected, the students who enrolled in the online course were computer
literate, and most of them reported prior experience using Chinese software.
However, most of the students used PC rather than Macintosh computers, and this
caus ed some concerns about the off-line CD-ROM assignments because, at that
time, the course CD-ROM existed in a Mac version only. (A PC version has subsequently been developed.)

Rationale for research choices in case study

The aim of this case study of the Web-based Chinese 399 course at the University of Hawai`i was to evaluate the learning environment, the learning experience and learning outcomes (including activities and socialization, as well as measures of understanding and satisfaction). Though there are no widely accepted evaluation criteria for evaluating Web-based learning, one valuable study has been done by Riel and Harasim (1994). In their paper “Research Perspectives on Network Learning,” they proposed a strategy for assessment that includes three main areas: network design and structure, social interactions, and individual learning outcomes.

Using Riel and Harasim’s model, this case study evaluates the Web-based Chinese 399 course in the following three areas:

- Learning environments
- Learning experiences
- Learning outcomes

Both quantitative and qualitative data were gathered and analyzed. Three surveys yielded quantitative data: a background survey, a post-unit survey, and a course evaluation survey. Qualitative data was obtained from observation, examination of course records, and interviews with the instructor and students.

Learning environment

Design

The design of the learning environment was evaluated in the following areas: course structure and content, learning environment in general, and major course activities. The data in Table 1 show students’ reactions to course content and course structure.

<table>
<thead>
<tr>
<th>statement</th>
<th>mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>The amount of material covered was adequate for the credit received.</td>
<td>4.10</td>
</tr>
<tr>
<td>Course content was presented in a well-organized manner.</td>
<td>4.01</td>
</tr>
<tr>
<td>A variety of class activities were used to help present course content.</td>
<td>3.94</td>
</tr>
<tr>
<td>Examples and illustrations were effectively used by the instructor.</td>
<td>3.92</td>
</tr>
<tr>
<td>The instructor used the course Web site effectively for meeting the</td>
<td>3.85</td>
</tr>
<tr>
<td>objectives of the course.</td>
<td></td>
</tr>
</tbody>
</table>

Note: The mean rating combines satisfaction data from 3 separate administrations of the same survey throughout the semester.
The ratings indicate that from the students’ point of view, the course was well designed and well structured, and its content and organization served the course objectives. One student commented, “overall this course is very useful. It is easy to follow, and the structure is clear.” Another student said, “[the course] content is challenging and easy to move around [sic].”

Table 2 shows students’ evaluation of the learning environment. Students thought that the learning environment was well designed for online learning. At the same time, the mean ratings of 2.72 and 2.39 in Table 2 demonstrate that students did feel a certain degree of distraction and difficulty in understanding online instructions.

<table>
<thead>
<tr>
<th>statement</th>
<th>mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>The screen layout and interface design of the CHN399 course are consistent and easy to use.</td>
<td>4.16</td>
</tr>
<tr>
<td>The design of the Web forums was conducive to discussions.</td>
<td>3.84</td>
</tr>
<tr>
<td>The overall learning environment was conducive to learning.</td>
<td>3.79</td>
</tr>
<tr>
<td>I tend to get easily distracted in an online environment.</td>
<td>2.72</td>
</tr>
<tr>
<td>I had a difficult time understanding online instructions.</td>
<td>2.39</td>
</tr>
</tbody>
</table>

Note: The mean rating combines satisfaction data from 3 separate administrations of the same survey throughout the semester.

Table 3 shows how students felt about the course activities. Among various types of activities, students reported that the most useful part of the learning environment was the forums. Interviews with the students corroborated that students liked the discussion forums. As one student said, “I feel the discussion forum is the best tool in the course, where we can exchange ideas…”

<table>
<thead>
<tr>
<th>statement</th>
<th>mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>The discussion forums (i.e., Q&amp;A, small group discussion) are useful.</td>
<td>3.92</td>
</tr>
<tr>
<td>The warm-up activities are useful.</td>
<td>3.91</td>
</tr>
<tr>
<td>The Grammar Clinic is helpful.</td>
<td>3.74</td>
</tr>
<tr>
<td>The preparatory activities are useful.</td>
<td>3.71</td>
</tr>
<tr>
<td>The content of the core lessons (CD-ROM) is well designed.</td>
<td>3.23</td>
</tr>
</tbody>
</table>

Note: The mean rating combines satisfaction data from 5 separate administrations of the same survey throughout the semester.

The learning environment successfully accommodated the pedagogical sequence of activities specifically designed for the course. The close match of Web design and pedagogical design in this customized environment proved conducive to language learning. The forums, which facilitated the exchange of knowledge and ideas among
the members of learning community, were particularly critical to the design of the learning environment.

Navigation
Students agreed that the learning environment was easy to navigate and its functions were easy to use. Except for some Chinese input problems that were related to third-party software, the students usually did not have problems doing online exercises, posting messages to the forums, taking online quizzes, and so forth. One student commented, “the course Web site is the best designed that I have had to use. The colors are just right and finding (navigating) information is very easy.”

Table 4: Ratings on the learning environment regarding navigation (scale: 1 to 5)

<table>
<thead>
<tr>
<th>statement</th>
<th>mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>The screen layout and interface design of the CHN399 course are consistent and easy to use.</td>
<td>4.16</td>
</tr>
<tr>
<td>I had a difficult time understanding online instructions.</td>
<td>2.39</td>
</tr>
</tbody>
</table>

Note: The mean rating combines satisfaction data from 2 separate administrations of the same survey throughout the semester.

Tracking records showed that students navigated the course in a task-focused fashion. After they logged in, they focused on completing specifically assigned tasks (e.g., write three entries in the warm up activity), and then often left the course. Most of the time they did not routinely navigate to other parts of the class site. For example, there was a news forum for posting announcements, asking questions, and sharing information. However, students rarely went there to check. The consequence was that even if the instructors posted an announcement in the forum, only a few students read it. The instructors had to e-mail the students to let them know there was something new in the course.

Students’ task-focused navigation patterns indicate that system developers should employ a task-based approach in designing a learning environment. Developers should anticipate that students may not navigate on their own to ancillary forums and should therefore design approaches to motivate students to explore multiple paths in the learning environment, using different media, such as e-mail, for communication when necessary.

Social Interaction: The learning experience
Participation in discussion
Generally speaking, students’ participation in discussion was active. When we examined the number of messages posted in forums in each unit, we found that more than half of the students met the requirement of posting at least two messages in a specific discussion task. We also noticed that participation was not evenly distributed. Some students posted comparatively large numbers of messages in
certain units but fewer in others. Data from observations, surveys, and interviews indicate that this was due to several factors:

1. Students had varying levels of interest in different units. For example, one student commented of a particular unit, “the unit has been very useful for me. The vocabulary I learned has opened up a new door into Chinese life.” As the comment would indicate, the student participated actively in this particular unit.

2. Students had different levels of background knowledge for different lessons, which influenced their participation. In regard to a lesson on Chinese medicine, one student commented, “I wish I knew more about this topic. I wonder if it is so important to know about this topic. It seems that it was difficult to discuss this topic and essays about buying medicine. I had a hard time to write feedback [sic] on other classmates’ essay[s].”

3. Students did not put an equal amount of time into each unit. For example, there was a nontraditional student who needed to go on business trips from time to time, so he did not participate actively on those occasions.

4. If students did not get a response immediately or did not get a response at all from other students, they lost interest in following up. As one student said in the interview, “the level of my motivation went down when I did not get feedback.”

Below is an example of uneven participation. The numbers shown in Table 5 indicate that in the forum for essay writing there was an overall higher participation rate in the last two units.

<table>
<thead>
<tr>
<th>student ID</th>
<th>unit 1</th>
<th>unit 2</th>
<th>unit 3</th>
<th>unit 4</th>
<th>unit 5</th>
<th>unit 6</th>
<th>unit 7</th>
<th>unit 8</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>student 1</td>
<td>4</td>
<td>6</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>14</td>
<td>8</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td>student 2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>6</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>student 3</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>student 4</td>
<td>9</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>10</td>
<td>9</td>
<td>44</td>
</tr>
<tr>
<td>student 5</td>
<td>11</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>5</td>
<td>46</td>
</tr>
<tr>
<td>student 6</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>6</td>
<td>18</td>
<td>36</td>
</tr>
<tr>
<td>student 7</td>
<td>7</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>8</td>
<td>39</td>
</tr>
<tr>
<td>student 8</td>
<td>14</td>
<td>5</td>
<td>5</td>
<td>14</td>
<td>8</td>
<td>7</td>
<td>15</td>
<td>17</td>
<td>85</td>
</tr>
<tr>
<td>student 9</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>24</td>
</tr>
<tr>
<td>student 10</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>6</td>
<td>23</td>
</tr>
<tr>
<td>student 11</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>6</td>
<td>4</td>
<td>5</td>
<td>10</td>
<td>38</td>
</tr>
<tr>
<td>student 12</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>27</td>
</tr>
<tr>
<td>total</td>
<td>72</td>
<td>34</td>
<td>31</td>
<td>49</td>
<td>47</td>
<td>44</td>
<td>90</td>
<td>98</td>
<td>465</td>
</tr>
</tbody>
</table>

According to observation and students’ feedback, there were two major reasons for this unevenness. First, the last two units involved students from Taiwan in a language exchange with the students in Hawai’i. The local students were paired up
with Taiwan students so that they could learn Chinese from the Taiwan students, and the Taiwan students could learn English from the local students. Being able to communicate authentically with native speakers sparked students' motivation to participate. As one student commented, “the last two unit[s] were the best. I really like the opportunity to talk to native speakers.” Another student said, “I am more confident that I can carry [on] a conversation with a Chinese speaker…”

A second reason for unevenness of participation from unit to unit, and high participation in the last two units in particular, was that the topics of the last two units were celebrities and movies. Students were asked to write a description (local students wrote in Chinese and Taiwan students used English) of a celebrity or a movie and have their language partner(s) guess the name of the actor or movie. These topics and tasks proved to be very interesting to the students. We found that in addition to interacting with their partner(s), many students also participated in the discussion of other pairs to talk about the actors and movies. This extra, voluntary participation also contributed to the high number of messages in these units. The higher participation in the last two units speaks to the importance of designing good tasks, choosing interesting topics, and providing opportunities for students to interact with native speakers in authentic situations.

Student-instructor interaction

Students were generally satisfied with their interactions with the instructor. Table 6 shows the survey results regarding student-instructor interaction.

<table>
<thead>
<tr>
<th>statement</th>
<th>mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>The instructors were responsive to students’ needs.</td>
<td>4.25</td>
</tr>
<tr>
<td>The instructors encouraged student participation.</td>
<td>4.19</td>
</tr>
<tr>
<td>Assignments were graded in a timely fashion.</td>
<td>4.17</td>
</tr>
<tr>
<td>I felt comfortable contacting the instructors outside class.</td>
<td>4.10</td>
</tr>
<tr>
<td>I felt uncomfortable posting questions into the discussion forum.</td>
<td>1.88</td>
</tr>
</tbody>
</table>

Note: The mean rating combines satisfaction data from 3 separate administrations of the same survey throughout the semester.

In this virtual environment, because students and the instructor did not meet face to face, it was crucial for the instructor to monitor the students' learning process, constantly encouraging participation and responding quickly to queries. When the instructor did not provide ongoing structured support, students' participation was not active. An example of this may be found in our experience with the Grammar Clinic.

In the first four units, the instructor limited participation to posting sentences with grammar mistakes and asking students to fix them. The instructor gave no hints or summary of relevant grammar rules. Students felt that they did not get much out of the treatment of grammatical errors, and therefore were not participating actively.
After realizing the problem, the instructor changed the strategy and began to put more effort into interacting with students, offering hints and summarizing grammar points during the discussion. After these changes were implemented, students showed a marked increase in interest. As one student said, "the GC in this unit was much better than the ones before. Dr. Lu was very helpful. She provided feedback quickly. She also gave useful hints and comments."

From this case we can see the importance of instructor guidance in a virtual language learning environment. When designing and conducting a Web-based language course, meaningful communication between instructor and students must be built into the course and actively pursued during instruction; it is a major contributor to student motivation.

Satisfaction with the social interaction of the learning experience

In general, students were satisfied with the social interaction of the learning experience. After finishing the course, most of the students said that they would like to take a similar course in the future. Students also said they would recommend this course to others. Table 7 shows survey results regarding student overall satisfaction with the course.

<table>
<thead>
<tr>
<th>statement</th>
<th>mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>I would recommend that other students take similar courses from the same instructor.</td>
<td>4.03</td>
</tr>
<tr>
<td>I have a sense of accomplishment so far.</td>
<td>3.76</td>
</tr>
<tr>
<td>I enjoyed the learning process and interactions in this class.</td>
<td>3.69</td>
</tr>
<tr>
<td>I enjoy getting to know fellow class members.</td>
<td>3.66</td>
</tr>
<tr>
<td>The method of course presentation kept my interest high through the entire course.</td>
<td>3.56</td>
</tr>
</tbody>
</table>

Note: The mean rating combines satisfaction data from three separate administrations of the same survey throughout the semester.

According to survey and interview data, students thought Web-based language learning had the following advantages:

1. More flexibility in interaction. Students liked the flexibility of the Web-based course. One student had a full-time job and would not have been able to come to campus three times a week for a class. He said that this Web-based course was perfect for him because he got an opportunity to improve his Chinese using a flexible schedule. Some other students also mentioned that they could log into the course from home at night, which was very convenient. As one student summarized, the advantage of a Web-based course is that "you don't have to be in the classroom at the required time. You can visit the site at any time you want."
2. More interaction in the literacy modalities (reading/writing). Students said that they wrote more in this course compared to their level of writing in a traditional classroom-based course. Because the Web course was largely text-based, there were many more opportunities for students to write in Chinese. A student commented, "I was able to retain more vocabulary over a longer period of time probably because I was using the vocabulary (writing essays or answering questions) almost as soon as I learned it. This is very important for me."

3. More authentic cultural interaction. The Web-based language course provided opportunities for students to interact naturally with native speakers. In the traditional classroom, such opportunities are rare, unless the instructor brings a guest to class or makes a field assignment. The students clearly enjoyed language exchanges with native speakers. This was shown in the high participation rate in the two units that involved native speakers. Examples of students' statements are, "this language exchange is a very good activity…the experience is very valuable." "I truly enjoyed this unit," and "this unit helped me to learn unique vocabulary for discussions with almost any Chinese speaker."

In the context of second and foreign language instruction, and in view of the Internet’s tremendous potential to enable transnational and transcultural communication, the students' enthusiasm for interacting with native speakers should be accorded special attention. It appears that maximizing exchange of this sort has the potential to greatly enhance student motivation, which is an important predictor of learning (Crookes & Schmidt, 1991).

Shortcomings in the social interaction of the course
In addition to noting positive things about Web-based language learning, students also expressed their dissatisfaction about some aspects of learning language on line:

1. Lack of adequate sense of community. Students felt that they did not have a true sense of community. Although we did ask students to post their self-instruction and pictures in the first unit, it did not prove to be very helpful for students in getting to know their classmates. One student commented, "I would like to get know my classmates…Uploading pictures of participants might be helpful if they agreed to be posted on the Web…"

2. Lack of adequate sense of feedback. Although most of the students said that they liked the asynchronous approach for this course because it allowed time for thoughtful writing, many students also mentioned that they felt discouraged when they did not receive feedback from others. The students usually did not mind waiting for a day or so for others' responses, but if they did not get feedback after several days or got no feedback at all, their motivation would weaken. As one student said in the interview, "I don't mind waiting a day or so, but it bothers me if I don't get any feedback."
Students' perspectives on Web-based language learning demonstrate the advantages of using the Web for language teaching and learning. The problems of lack of a sense of community and lack of immediate feedback are more related to the nature of asynchronous communication than to particular problems with this Web-based environment. To overcome the drawbacks connected with asynchronous communication, instructors must stimulate students' motivation and to respond students' messages in a timely fashion. The inclusion of a certain amount of synchronous communication in the course (e.g., synchronous Web-based chat during self introductions) may help students get to know each other better.

In an attempt to overcome shortcomings related to community-building, especially, and to enhance social interaction in the course, the instructor tried different approaches to motivate students' participation and to create a positive social dynamic. One approach the instructor used was to raise non-linguistic questions about students' postings. For example, when talking about hotels, one student mentioned that she had previously been to Xi'an, China. The instructor then asked if she planned go to China again, and the student talked about her summer plans. This not only kept the interaction going but also created a friendly conversational atmosphere.

In general, the instructor encouraged students to talk about their personal experiences not only so that would they write more but so that they would come to know each other better. In fact, the instructor often referred to her own experiences when responding to students' postings. In this way, the students came to know more about the instructor as well. Such efforts helped students to overcome somewhat their feelings of isolation.

Learning outcomes

Learning outcomes were evaluated by rating students' essays in an early stage of the course (hereafter called "pre-test") and their essays in a later stage of the course (hereafter called "post-test"), then comparing the ratings. Students were considered to have gained in writing proficiency if post-test scores were higher than pre-test scores.

The evaluation process was as follows:

1. All 12 students' essays in the first unit (self-introduction) were selected as pre-test samples and their essays in the seventh unit (introduction of a movie) were selected as post-test samples.
2. Three Chinese language teachers at UH were chosen to form a professional rater group and three Chinese whose occupations were not related to language teaching were chosen to form a non-professional rater group.
3. In both rater groups, each rater was randomly assigned to rate eight students' essays including both pre- and post-tests of a particular student.
Therefore, each student’s pre- and post-test were rated by two professional raters and also by two non-professional raters (See Table 8 for distribution of raters).

Table 8: The distribution of raters (* indicates that the rater rates the student)

<table>
<thead>
<tr>
<th>student ID</th>
<th>rater1</th>
<th>rater2</th>
<th>rater3</th>
<th>rater4</th>
<th>rater5</th>
<th>rater6</th>
</tr>
</thead>
<tbody>
<tr>
<td>student 1</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>student 2</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>student 3</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>student 4</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>student 5</td>
<td>*</td>
<td></td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>student 6</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>student 7</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>student 8</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>student 9</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>student 10</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>student 11</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>student 12</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Raters evaluated the essays based upon criteria that comprised three areas: vocabulary, grammar, and content, each scored on a scale of 1–5 points. When evaluating an essay, a rater assigned a score for each of the three areas. A rating for an essay was the sum of the scores of these three areas.

5. In each rater group, a rating on each student’s pre- or post-test was obtained by calculating the mean of the ratings from the two raters assigned to that student.

6. For each rater group, a one-tail T-test was conducted to compare students’ pre-test rating and post-test rating. See Tables 9 and 10.

Table 9: T-test results for pro raters’ ratings

<table>
<thead>
<tr>
<th></th>
<th>pre-test</th>
<th>post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>mean</td>
<td>9.677083</td>
<td>12.0625</td>
</tr>
<tr>
<td>1-tail probability</td>
<td>0.008834</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Based on professional raters’ evaluations, the T-test results show that the average rating of the post-test sample (12.0625) is higher than that of the pre-test sample (9.677083). The test shows that at the significance level of 0.01, the mean rating of the post-test samples was significantly higher than the mean rating of the pre-test samples (p=0.0008834<0.01), which indicates an improvement in writing proficiency.
Table 10: Test-test results for non-pro raters’ ratings

<table>
<thead>
<tr>
<th></th>
<th>pre-test</th>
<th>post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>mean</td>
<td>9.91667</td>
<td>11.708333</td>
</tr>
<tr>
<td>1-tail probability</td>
<td>0.000169</td>
<td></td>
</tr>
</tbody>
</table>

Based on non-professional raters' evaluations, the post sample also had a higher average rating (11.708333) than the pre-test sample (9.91667). And the T-test results also show that the average rating of the post-test sample is significantly higher than the average rating of the pre-test sample ($p=0.000169<0.01$), which also indicates an improvement in writing proficiency.

THE HAWAI’I WEB EXPERIENCE: LESSONS LEARNED

The most important lessons to be drawn from the University of Hawai’i’s experience with Web-based language education fall into two broad areas: Web course design and online behavior. Web course design refers to the preparation undertaken and the elements put in place before the course is offered, and online behavior refers to student and teacher actions inside the virtual space of the course during the semester. It must be stressed that design and behavior are both vital to the success of a Web-based course. A course that is well designed provides stimulation and guidance to both students and teacher once the course has begun, while a poorly designed course can be confusing and discouraging. Effective behaviors in a Web course create a comfortable social space in which students enjoy customized instruction and have the sense of interacting with real human beings.

These are the most important lessons learned in this project: Web course design must be based on pedagogical principles, and it must focus on being user-friendly. Online behavior must help build a sense of community, and it must create a sense that the teacher is responsive. These “lessons learned” are discussed below. The conclusions offered in this section are based on data gathered from analysis of online behavior as reflected in course postings and tracking records, student feedback surveys, and student and instructor interviews gathered for Advanced Web-based Chinese Reading and Writing (Chinese 399). As learners, students do not have the same awareness of pedagogic processes that teachers do. While teachers are able to reflect on teaching and learning processes using the metalanguage they have mastered through their training, students' awareness generally centers around positive and negative responses to aspects of their learning experience. These responses provide important indicators of the effectiveness of the pedagogic orientation or principle that underlies the course which the students have taken.

Web course design: Pedagogical principles

In the past few years, prepackaged courseware or course management systems such as WebCT and Blackboard have become widely available. Use of these systems, often implemented campus- or system-wide, squeezes instructional designers into a mold
established by a generic course management template that is expected to serve the
gamut of educational disciplines. The distinct pedagogical needs of language
education are not reflected in the design of this generic courseware. For a language
instructor seeking to develop a skill-building course, the generic course template
provides little guidance toward the development of a good instructional sequence.
Entering an “empty” course space in one of these generic course management
systems, the designer (who is often the same person who will teach the course)
encounters various tools laid out awaiting organization: chat rooms, calendars, quiz
modules, and threaded discussion. If time is pressing, the designer may allow the
available tools to dictate choices about how instruction will take place. The
moment such choices are made, technology has trumped pedagogy, and the designer
has abandoned an essential principle: Pedagogical principles must determine the
instructional sequence.

Table 11: Pedagogical principles associated with Web course design features

<table>
<thead>
<tr>
<th>pedagogical principle</th>
<th>Web course design feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Move from what the learner knows to what the learner does not know.</td>
<td>A “collective brainstorming” mechanism, such as a class word bank, comes at the beginning of each unit.</td>
</tr>
<tr>
<td>Teach receptive skills before productive skills.</td>
<td>Students work individually with listening or reading materials before doing extensive posting in the course.</td>
</tr>
<tr>
<td>Provide opportunities for real communication.</td>
<td>Students engage in a learning exchange with native speakers who log on to the course from the target language environment.</td>
</tr>
<tr>
<td>Tailor instruction to student needs.</td>
<td>The Grammar Clinic treats errors that have occurred in student postings in the current unit.</td>
</tr>
<tr>
<td>Allow for peer learning.</td>
<td>Students write essays for everyone to read and respond to, not just for the teacher.</td>
</tr>
</tbody>
</table>

While it is a hard fact that choices for instructional activities are constrained by
available technology, it is important that the initial stage of instructional design —
the composition of the instructional flow — take place apart from any
technologically determined template. Ideally, the Web course template — what
might be termed the “basic interface” — should be designed to visually reflect the
temporal flow of activities, rather than forcing students to jump from page to page
trying to locate different tools. Also, if existing software tools do not match the
activities the instructional designer would like to include in the course,
programming resources should be sought out to create the desired tool, unless an
effective adaptation of the existing tools can be made.

Table 11 shows some sample pedagogical principles, and the design features of the
Hawai‘i Web-based courses that conform to each principle.
Course management software may well improve in the next few years, but in the meantime, in order to create courses that adequately reflect sound pedagogical principles, Web course designers who wish to deliver high-quality language instruction may need to plan for intensive investment of resources in programming and Web page creation. If adequate resources are not available, the designer should carefully consider whether or not to go ahead with course delivery. For example, it is difficult to imagine how a prepackaged Web course management system such as WebCT or Blackboard could effectively serve as an effective instructional medium for speaking skills. Intensive investment in programming and design using other Web technologies would be necessary to teach speaking over the Web in a pedagogically sound way.

As an alternative to using the prepackaged courseware mentioned above, the University of Hawai‘i developed its own platform for its Web-based courses using self-designed menus and content pages embedded in a frameset. Course content is a combination of static and dynamic Web pages, with dynamic content stored in a database and “fed” to the end user through a set of scripts that enable the various functions of the course. Development of this custom-designed system required substantial investment of time and money and a high level of technological expertise.

In the University of Hawai‘i Web-based Chinese course, which targeted reading and writing skills, the only way for participants to communicate was through posting in the forums and the word bank. Since writing was the sole medium of communication in the course, students had many more opportunities to write than they would have had in a traditional writing course. Asynchronous communication reduced pressure on students to write spontaneously and allowed them to think more carefully because they had the opportunity to spend time revising their writing before they sent it out. Other material in the course also required use of the written — rather than the spoken — modality. Data from surveys and interviews reflect students’ realization that they did far more reading and writing in this course than they might have done in a similar traditional classroom course. Students felt that this was a strong positive point of the course, which was designed to focus instruction precisely on reading and writing.

Student data reflecting the strengths of this course in maximizing reading and writing practice suggest that the course turned the constraints of the Web-based medium to advantage by matching modalities: in other words, matching an available modality (written communication on the Web) to the modality targeted in instruction (reading and writing). These data support the development of courses in which the modality of instruction is similarly matched to the target modality. At present, this means that instruction in speaking would be poorly supported by the Web at any level, but most particularly at the beginning level since students at that level lack even a rudimentary foundation upon which to build.

From the standpoint of contemporary pedagogic practice, using language to communicate is an essential part of the language learning experience. Some of the
most important evidence gleaned from the student interviews and surveys in this study points to the importance of person-to-person communication as a critical element of a satisfactory and effective learning experience. Student reaction was especially positive to instructional units in which the learners interacted authentically and naturalistically — that is to say, in which they communicated to exchange real information rather than just to complete a linguistic exercise — with native speakers and classmates in the target language environment. This evidence parallels the emphasis in current language pedagogy on communicative interaction, in contrast with earlier pedagogic models that stressed mastery of linguistic forms.

The evidence gathered in this study strongly supports the conception of Web-based language courses as environments for communicative interaction among participants, with language partners, and with the instructor. The evidence does not support models for Web-based courses in which the user interacts primarily with the online material, as for instance in a sequence of self-paced, self-instructional modules.

Modern principles of language instruction place great emphasis on the use of authentic materials — that is, materials produced by native speakers for purposes of communication with other native speakers. The CD-ROM-based lessons at the “core” of each instructional unit were all built around authentic materials. Student data from surveys and interviews reflected students’ confidence that studying authentic materials would strengthen their capacity to function successfully in the target language environment in the future.

Web course design: User-friendliness

As information-bearing media, Web pages vary in effectiveness due to their content and their presentation. Interesting and well thought-out content is ineffective if poorly presented; poor content cannot be improved by good presentation. As mentioned in the above section on pedagogic principles, pre-planning the instructional sequence before creating course Web pages helps ensure that course content is pedagogically sound and engaging for learners. Once the sequence is well planned, the task becomes to create user-friendly Web pages for effective delivery of the course content.

At the level of the single Web page, principles for sound design are similar to those for print materials: Do not crowd the page with too much text, use visual elements effectively, and so forth. But even more critical to user-friendliness is ease of navigation and use. Students in the University of Hawai‘i course were in strong agreement that “the screen layout and interface design of the CHN399 course [were] consistent and easy to use.”

Since Web pages have hyperlinks — in other words, “hot” text and/or images that lead the user from page to page through many possible sequences — navigation must be carefully managed to avoid confusion. The University of Hawai‘i course employs a dedicated menu bar in a frame on the left side of the browser window that allows
users to easily find their way through tasks in the course. The menu bar features expanding menus in each instructional unit, a sequential arrangement of student tasks, and clear geographic separation of course material from ancillary tools, such as online dictionaries (see Figure 10). This presentation of tasks in chronological sequence contrasts with the tool-based arrangement found in most course management software.

Ease of navigation will become even more important in the future, when Web-based components become common in many courses as part of the movement towards distributed learning. Whereas students in CHN399 and other students who voluntarily choose to enroll in exclusively Web-based courses are currently quite Web-savvy, in the future the general level of technical expertise among students using Web-based course components may flatten out. Ease of navigation and use will become even more important to accommodate these users.

Many users have dial-up connections to the Internet and are using older machines and systems. It is important to keep technological demands on the user, such as special plugins and scripting, to a minimum. In the University of Hawai‘i course, only one plugin, RealAudio®, was used.

Online behavior: Fostering a sense of belonging

Far from being a tool for self-learning or a “teaching robot,” this Web-based course was a locus for meaningful interactions among a group of people. The maintenance and development of this community of learners was an important element of course delivery. Data from this Web-based course suggest that person-to-person communication fostered enthusiasm and sense of belonging, but that a certain social cohesion was still lacking.

The Web enables convenient, almost universal student access, but as of this writing the Web-based environment is unable to approximate the traditional classroom space in the same way that the ITV environment does. Although the Web-based environment does enable learners and instructor to “meet” in a virtual online space, the sense of community is not as immediate as it is in the traditional classroom. For this reason, it is essential to make special efforts to reinforce students’ sense of being members of a community of real people.

Student responses to surveys and interview questions in the Web-based course in this study indicated that they felt that the course lacked such a sense of community, and that this affected their level of comfort. They would have liked the chance to get to know each other better outside of the tasks assigned in the course. This data suggests that the creation of social spaces within a course has importance that deserves prioritized consideration alongside the design of tasks and activities more directly related to the learning goals of the course. In response to this feedback, the course designers have, as of this writing, implemented a feature that displays the image of each posting’s author alongside the posting, creating an increased sense of
interaction with a real person. Moreover, plans for future adaptation of the course include the expansion of areas in the course that are purely social and unrelated to course assignments.

Figure 10. Forum in Web course, showing menu bar at left with expanded unit menu

Online behavior: Instructor participation

In order to accommodate participation by students in any time zone, the communicative environment of this Web-based course was designed to be asynchronous. Participants posted entries at any time for others to read and respond to at their convenience. In a synchronous environment, in contrast, users would all log on at a given time and exchange postings in real time, using such tools as Web-based chat. In a completely open-ended asynchronous environment, users might have to wait an unlimited length of time to get a response to a posting. However, in the asynchronous UH course, interaction occurs within the framework of a regular work schedule requiring a certain amount of participation by a certain deadline. These deadlines encourage prompt response to others’ postings.

Data from student interviews and surveys reflected the importance students placed on receiving prompt responses, both from other students and from the instructor. Lack of response to postings was frustrating and disappointing. In the context of an asynchronous course, these data point up the importance of structuring the course schedule in a way that encourages timely responses. The data also indicates the
importance of extremely active, intensive participation on the part of the instructor, including prompt response to student postings. Feedback can be tailored and personalized in a dedicated space for real-time reflection and feedback on actual student-produced language. The Grammar Clinic in the University of Hawai‘i Chinese 399 course, for example, remains empty until the instructor gathers and analyzes student errors in several discussion threads in the clinic. In each thread, students are invited to “fix” the errors under discussion and to try creating similar examples free of errors. Guidance of the type exemplified in the Grammar Clinic resulted in high agreement ratings from students to statements such as “The instructors were responsive to student needs.”

THE ROAD AHEAD

As distance-delivered instruction at UH expands beyond the local community to the national and international community, distributed learning becomes more challenging and presents more opportunities for creative implementation. UH is beginning to explore models where remote learners create their own distributed learning environments by recruiting local tutors, especially conversation tutors, who are linked to and supported electronically by the instructor at UH. Upper level modality-specific courses, such as reading/writing courses, will continue to be developed and offered on line with more modest distributed support, since on-line courses are ideal for developing advanced reading/writing skills. Here, too, however, distributed learning will likely be featured in more and more UH courses as distance students increasingly will be asked carry out field work projects involving local, target-language sources and informants and report on them by carrying out communicative tasks in the learning community on line.

The underlying rationale for distance education is accessibility, making something accessible to someone who would otherwise not be accommodated. For distance-delivered language education to enjoy acceptance and be effective, quality must not be compromised. We at the University of Hawai‘i are working to establish accessibility and maintain quality as we advance instruction at a distance in uncommonly taught languages, in particular, to the virtual learning community.

REFERENCES


