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- Peter Heffernan

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Allen Quesada

Using the Web to Practice and Learn Grammar: ESL Students' Perspectives

The Internet has created access to a whole new world of information of seemingly unlimited variety.

The field of Teaching English to Speakers of Other Languages (TESOL) is no exception. The Internet is an excellent vehicle for the dissemination of teaching and learning materials related to listening, speaking, writing, and reading (Dudman & Reynolds, 1996; Hess & Kasikova, 1995; Kitao & Kitao, 1996). This study deals with the use of computers and Internet sources in the ESL grammar classroom. These supplements to classroom instruction allow both students and teachers convenient communication, turning more of the control of the instructional communication over to students (Alley, 1996; Batson & Bass, 1996; Warschauer 1996a; Warschauer et al 1996).

In addressing Computer Assisted Language Learning (CALL) issues, language teachers should conceive of technology as support for language learning rather than as a single tool or source of information. Technology can change not only how teachers teach but also what they teach. Task-based and content-based approaches have sought to integrate learners in authentic environments, and to integrate the various skills of language learning and use (Egbert & Hanson-Smith, 1999).

The Study: Purpose, Questions, and Methodology

The study took place in an Intensive English Program (IEP) on the campus of a state research university in the Midwest of the United States. The course chosen for this study was an ESL third level of a five-level grammar course. The purpose of this interview-based qualitative study was to describe and explain the perspectives of eight adult ESL students when using a Web-based

support program called NetGrammar as a supplementary tool for an intermediate grammar class. The focus of the study was on the expectations, beliefs, and attitudes of ESL students when using the Web to practice and learn English grammar. The following research questions provided the framework for the research process.

1. In what ways do ESL students use the Internet resources found in the Web site NetGrammar for enhancing the learning of English grammatical structures?
2. What are the perceived advantages and disadvantages of Web-based support materials for learning English grammar?
3. What are the students' perspectives on the interactive Web exercises for practicing English grammar?

To reduce the likelihood of misinterpretation, I used triangulation through ethnographic interviews, field notes and observations, and the grammar textbook, which provided a more complete picture of the participants' experience throughout a semester. My primary role in this study was as an interviewer and as a "virtual grammar tutor." I created the grammar content delivered over the Web, monitored the interaction of the participants using a Web-based program called NetGrammar in the computer lab, and wrote field-notes during and after the interviews.

The eight student participants in the interview portion of this study were ESL students from eight different geographic areas including the Middle East, South America, Central America, Mexico, Russia, and Thailand. The six male and two female participants ranged in age from 18 to 37 years. All of them had similar computer skills and commu-

nicated well in English. Their TOEFL scores ranged from 400 and 550.

Participants met twice a week for 45 minutes for a period of 16 weeks. They were required to use the CALL lab at least twice a week to work on specific software programs such as Testmaster and FOG, and the Web site NetGrammar. As research in second language acquisition (Celce-Murcia & Larsen Freeman, 1999) suggests that some students expect and need to learn the formal rules of a language in focus, NetGrammar focused on English grammar through interactive listening, reading and writing activities.

The first stage of data collection dealt with standardised open-ended questions, which were constructed to elicit the key issues of the problem from the participants' perspectives (Lincoln & Guba, 1985, p. 235). All participants were asked the same questions in the same order. The duration of each interview was about 40 minutes.

Data Analysis Procedure

To make sense of the data, I noted patterns and themes in the interviews, observations, and notes that appeared consistently over time (Miles & Huberman, 1994). The first stage of the analysis focussed on the standardised open-ended questions. The tape-recorded data were transcribed verbatim into electronic format. They were unitised¹ and categorised (Lincoln & Guba, 1985) using a computer software package for qualitative data analysis called QSR NUD*IST Vivo (Nvivo). The second stage of the analysis served to reduce the data and categorise them using the emerging themes. In the third stage of the analysis, emerging categories were refined through the addition, deletion or reorganisation of themes or existing categories. A member check was conducted to ensure the accuracy of the information reported and the transcriptions and other relevant documents were unitised and categorised.

To reduce and display the interview data, I first organised the responses from the eight participants according to each of the three research questions. It is important to

note that the interview data were transcribed without any attempt to alter or correct what the participants said. Since the participants' English proficiency level varied from low intermediate to high intermediate, many answers or responses contained grammar errors.

Findings

In what ways do ESL students use the Internet resources found in the Web site NetGrammar for enhancing the learning of English grammatical structures? The participants' perspectives indicated that they used various strategies to practice and learn grammar on the Web, but all the participants used the Web in similar ways. They did the grammar exercises directly on the computer and/or with printouts of the Web exercises.

Printing. The advantage of working directly on the computer was that they had access to many exercises per unit. While the participants were on the computer they printed the CALL exercises. Some of the participants printed the Web exercises and worked on them in paper version. Afterwards, they returned to the computer to receive relevant immediate feedback. The following quote summarizes this theme,

"I usually print out the Notes section. I think [that] if I can print the Web pages and study from it, it is better for me. Then, I go to the Web to check answers." [S1.3]

Home Access. Most of the participants enjoyed the idea of accessing the Web exercises from their homes and the flexibility of going to any computer lab on campus. As Bradin (1999) notes, "Learners often appreciate the added security of being able to take home a printed copy of the material viewed on screen" (p. 169). Most of the participants had a hard copy of the Web exercises for further review. The following quote illustrates this theme.

"I usually start from the Web pages [NetGrammar]. After that, I review some grammatical topics in the textbook and then I feel more confident to go to other programs such as Testmaster, FOG. That's the way I use the three from home." [S1.4]

Note Taking. All participants took notes from the Web exercises. Some of them even e-mailed their Web exercise results to their teacher. The following quote summarises their note writing,

"I use the Web at home. I just answer the questions directly from the computer. But when I find something important I write it down." [S1.5]

On the whole, most of the participants had a very positive attitude towards the Web exercises, and felt that those exercises helped them learn grammar. Interestingly enough, many of the participants noticed improvements not only in mastering grammar but also in reading and writing.

What are the perceived advantages and disadvantages of Web-based support materials for learning English grammar? The responses of the majority of participants were consistent with the results found in other studies (Frizler, 1995; Warschauer, 1996b).

Accessibility. One of the advantages of the Web according to the participants was that they could obtain information quickly and easily. They did not have to leave the Web environment to search for other related materials. All participants pointed out that the twenty-four hour availability of the information was ideal. They felt that they were less restricted than in a classroom. The findings on accessibility support Hanson-Smith's (1997) contention that,

The Internet and its multimedia version, the World Wide Web, allow the instantaneous exchange of information both to and from archive sites and between and among individuals. Language learners may post messages to a bulletin board, which users may "drop by" to look at, or they may enter "live" chat areas where communication is simultaneous, as if one were "talking" by typing. A number of sites now exist specifically created for ESL learners (and for learners of other languages as well) to exchange ideas on topics of interest to them (p. 8).

As more on-line resources are accessible from various locations, the idea of becoming autonomous learners will become a reality (Healey, 1999). Many participants expressed that one advantage of using the Web was that they did not have to spend extra money on more books, or workbooks for practice. This is important since many of these international students had limited budgets.

Motivation. Because of its interactivity, the Web motivated the majority of the participants to continue working on the exercises. The variation in the exercise format encouraged them to work on as many exercises as they pleased. The following quote illustrates this theme:

The materials [on NetGrammar] are motivating. I'd like to see pictures and colours because it is more attractive; if a student is bored, he could be more motivated to do an exercise. The look of NetGrammar is important because I get motivated. It is inspiring to see pictures and it increased my curiosity to be involved with the grammar of English. [S1.3]

Pressure-free and Self-paced Learning. The majority of the participants found that they did not have to wait for feedback on their work. Immediate feedback on every exercise was available, together with suggestions, hints, and references to other materials. The participants observed that their self-esteem increased, and felt they were in control of their work. They did not feel pressure from anybody but worked at their own pace, supporting Healey's (1999) argument that "most current computer software gives users full control over the pace of learning" (p.401). Thus, students can decide how often and for how long they work on a specific program. The following quote is typical of informants' pressure-free and self-paced learning.

You feel more free when you are with the Web. I feel confident when I am alone next to the machine. It is a very important I can go on my own pace, and I don't have the pressure from my teacher to finish the sentences or

exercises. In conversing with my friends, I have noticed that by using the Web I have learned a lot now. I feel the confidence to talk more English and now I can understand more structures." [S1.8]

Transferability. All participants observed that the regular use of the Web helped them transfer what they had learned to other contexts such as reading, writing, and speaking. They felt that their reading and writing skills improved as a result of their Web-based work. The participants made a direct connection between what they had practiced on the Web and how they applied it through writing, reading and speaking. The following quote is representative of participant comments about transferability.

I feel more confident to use grammatical sentences in the essays. By doing the exercises and by studying with NetGrammar helped me to do better in the proficiency exam. And I feel more fluent in reading and writing, too. The Web helps you to improve your grammar, reading, and vocabulary. [S1.6]

Although computers could not substitute for classroom teachers, in some cases, particularly in grammar practice, participants felt that the Web environment offered them more than a traditional grammar class.

Hypermedia nature. One of the disadvantages of the Web, according to the majority of participants, was its chaotic format. That is, the hypermedia nature of jumping from one place to another made it difficult for them to track where things originated. They were easily distracted from their goal, jumping to other sites instead. One of them explained:

"At first, I felt like lost. I did not know where to go or how to go back to where I started." [S1.2]

Availability of Equipment, Training, Human Contact. Another disadvantage of using the Web was that some students had no computer at home. The majority of the participants also noted that a lack of computer training might discourage students from using the computer and

the Internet. All of them expressed the necessity to have workshop sessions at the beginning of the semester to show students how to take advantage of the many resources available. Some participants were also concerned about the lack of face-to-face interaction on the Web. They felt that there should be more collaborative computer tasks, requiring two or more students to interact with one another to complete an exercise or a task.

What are the students' perspectives on the interactive exercises on the Web for practicing English grammar?

Levels of difficulty. The participants found the different types of exercises on the Web very good and useful. The level of difficulty varied from exercise to exercise, which made them challenging and motivating. One of the participants explained, "there is more variety of types of exercises on the Web." [S1.1] Another said, "by using the Web exercises, you find simpler sentences or more basic structures than the ones in the CD-ROMs." [S1.5] Yet another participant felt that "the level of difficulty of exercises is higher in the Web than in class." [S1.8]

Interactivity. The participants found that the interactivity and ease of use of the Web exercises made them feel good about themselves. The use of the Web did not make them feel frustrated. As Healey (1999) expresses,

For software the issue of barriers to learning generally centres on user-friendliness. Software that regularly crashes falls into the worst-case category, causing total loss of the learner's control over the activity...Software can set up barriers to learning when it is cumbersome to use, requiring unnecessary keystrokes, or memorization of obscure commands to accomplish basic tasks (p.400).

One of the many features of the Web exercises that had an impact on the participants was the immediate feedback capability. All of the participants found the feedback useful and complete, encouraging them to keep going. Thus, the Web

environment presented relevant immediate feedback, a task an ESL teacher could not easily perform for every single student in a class of 18 students or more. One of the participants confirmed, "sometimes I feel very well when I finish and I found 80% or 67% correct as feedback" [S1.3], providing support for Hannafin and Peck (1988):

The immediacy of the feedback provided by the computer is difficult if not impossible to replicate in other media. Most answers can be evaluated instantly. Others' answers may take a few moments to analyse. In any case, the computer's ability to evaluate and respond surpasses by far the human instructor's ability to do so. This capability is a key factor in CAI's efficiency and effectiveness (pp. 9-10).

According to Soo & Boling (1999), feedback that "offers remediation (an explanation of why the learner was wrong) and reinforcement (an explanation of why the learner was right) is much more effective than simplistic 'Wrong, try again' messages" (p. 448). The explanations should always be in language appropriate for the user. The active participation in preparing and organising Web materials makes the instructor more aware of the selection of different exercise types (mechanical, communicative, etc.). The Web, with its multi-media capacity, is ideal for language learning in that one can find authentic materials to suit learners' needs. According to Morrison, Ross, & O'Dell, (1995), the designer should emphasise a user-friendly screen design to create an efficient and effective learning environment.

First, a screen should have orienting information (e.g., how many frames or questions remain). Second, the screen should display directions for the learner in a consistent location. Third, the program should echo or display the students' responses. Fourth, a display area for informative error messages should be provided. Fifth, the options available to the student (e.g., quit, review, go to the previous screen) should be displayed in a consistent are. (Morrison, Ross, & O'Dell, p. 216).

As the designer of the Web site NetGrammar, I took advantage of already available Web sites to expose the participants to a variety of contexts and exercises.

Conclusions

This study provides evidence to support the integration of new technologies such as the Web to accommodate students with different learning styles. As teachers plan Web-enhanced courses, they need to realise that hundreds of ESL Web sites are available to support traditional ESL courses. Another important implication for teaching is that the grammar content on NetGrammar was fairly easy to update. For example, as each grammar point was developed in the classroom, I modified, added, or deleted links on the Web site. Overall, the participants in this study interacted and negotiated meaning with an authentic audience, and had enough time to work in an atmosphere with an ideal stress/anxiety level (Egbert, Chao and Hanson-Smith, 1999).

This study provides evidence to support the integration of new technologies such as the Web to accommodate students with different learning styles.

The results of this qualitative study emphasise the need to include more Web-based materials for practising grammar using new technologies. Most of the participants followed similar strategies while using the material on the Web. They either practised directly on the computer and/or printed the exercises in order to work on them afterwards. The findings also suggest that the students required ongoing Internet training, and technical support. Furthermore, they show that Web-based materials increased students' self-esteem, and enhanced their attitude toward the computer and grammar learning. On the whole, most of the participants had a positive attitude towards the use of a Web-enhanced course to practice and learn grammar. In a nutshell, ESL teachers

should be encouraged to seek alternative teaching methods that incorporate Internet resources into their classes.

Notes

- 1 Unitising: used in qualitative research for data processing analysis; requires the formation of different units or categories of analysis (Lincoln & Guba, 1985, p. 344).

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Sigrun Biesenbach-Lucas & Donald Weasenforth

Design, Implementation, Outcomes, and Assessment of Electronic Discussion Groups

How effective are asynchronous electronic discussion assignments in university-level language courses? An exploration of syllabus issues provides some insights.

Technology, Constructivism and Second Language Learning

Communicative language teaching today aims at engaging students in authentic, relevant activities that stimulate meaningful interaction among students and thus engage them in an exchange of ideas in which they negotiate meaning (Nunan, 1999a). This collaborative negotiation of meaning is considered crucial to second language acquisition (Long, 1983; Swain, 1985).

Some recent collaborative computer technologies have proven useful in fulfilling these communicative goals. For example, chat and e-mail have been used to engage students in interactive and collaborative environments, in and outside of classrooms, in which they can construct and assimilate meaningful information.

While synchronous collaborative technologies – including chat, MOOs, and MUDs – are particularly useful in providing a highly interactive environment for students to negotiate meaning (Nunan, 1999b; Warschauer, 1998), asynchronous electronic media – such as e-mail, listservs and threaded discussion – may exhibit certain advantages. What asynchronous technologies lack in terms of interaction, they make up for in terms of flexibility of use. Unlike synchronous media, asynchronous technologies allow students to participate at any time and at their own pace. This flexibility makes it very easy for instructors to extend discussions outside the classroom. Perhaps more importantly, it also allows students time to process messages at a pace com-

fortable to them and negotiate ideas with others. This allows students to reflect on others' messages and their own responses, promoting critical thinking skills, problem-solving and communication skills (Bullen, 1998; Burley, 1998; Chan, 1998; Marjanovic, 1999).

In addition to cognitive benefits, asynchronous technologies have been found to promote social relationships (Chong, 1998; Weasenforth, Meloni and Biesenbach-Lucas 2001). Mutual support within learning communities is crucial to collaborative co-construction of ideas. Finally, asynchronous technologies provide an additional alternative opportunity for assessing students (Weasenforth, Meloni and Biesenbach-Lucas 2001). Assessing students on a continual basis and in many different ways is also critical to a communicative approach to teaching, especially in light of the complexity of the learner and the learning process.

Electronic Discussion Assignment Design

For this study we incorporated principles of communicative language teaching with the use of a technology, threaded discussions, which had features that seemed to support collaborative construction of meaning. Features of threaded discussions, we felt, would allow us to meet the communicative curricular objectives we set out, including giving non-native students an additional opportunity to use English outside class; providing a non-intimidating forum in which students could actively involve themselves in critical participation;

promoting collaborative discussions that would support critical understandings of course content; and providing opportunities for mutual support and friendships. In addition to these objectives for students, we hoped that the threaded discussion assignment would give us an alternative, additional means of assessing students' understanding of course materials.

We designed an assignment that incorporated the use of threaded discussions for two advanced-level ESL reading/writing courses for graduate students at a major American university. Students were assigned to groups of 3-4 discussion partners for an entire 15-week semester. Within his/her own group each student was asked to contribute at least one message per week via the threaded discussion board. We left it to the students to decide who would initiate the discussions. We also allowed students to choose the discussion topics.

Students were told that they would be graded individually for each week's contribution as indicated in guidelines and an evaluation form which were given to students at the beginning of the semester (see Appendix A). The criteria included the number of postings (one posting minimum required per week), inclusion of course-related matters, inclusion of critical reflection on course content, and incorporation of references to previous student messages. Students were assured that accuracy of language usage would not affect grades so that their communication would not be deterred by undue attention to sentence-level concerns. The criteria were discussed with the students and students were instructed in how to use the discussion board before the first discussion assignment.

To limit their influence on group interaction, instructors did not participate in the discussions. At the end of each week, instructors printed each group's messages and evaluated each student's contribution(s). Students were given a completed evaluation form including comments on the content of their messages.

Benefits from electronic discussion groups

Communicative Language Teaching: Interaction and Output

Communicative language teaching places an emphasis on the collaborative interaction, language production, and negotiation of meaning. These goals can be realised through the use of electronic discussion boards which makes them a valuable addition to other activities in a language class.

First, the groups that students were assigned to provided real audiences for their postings: instead of writing for the teacher, as is typical of many class assignments, students were writing for their peers. This is a realistic activity for language learners as they are nowadays expected to engage in a variety of discussion board forums in mainstream and university courses. Thus the assignment provided authentic practice with this type of activity, introducing students to technology that is fast becoming a major feature in a variety of learning situations. Second, since students were focussed on communicating about course content, and moreover those aspects of the course content that were self-selected and thus important to each group, the activity provided a clear focus on meaning over form, as is evident in the students' grammatical as well as lexical and mechanical inaccuracies throughout their postings (cf. Sotillo, 1999). Third, the instructors did not intervene in the electronic discussions. Such intervention characterises face-to-face classroom situations in which instructors tend to rephrase students' utterances in order to make them more comprehensible or in which instructors tend to provide most of the language input. In their electronic discussion groups, students had to rely on their own resources in order to negotiate meaning. Thus, the joint construction of arguments pushed students to present their point of view clearly and credibly, which frequently took the form of repeated clarifications and expansions of their ideas. This ongoing give and take of opinions, in which learners interact, produce

written language output, and negotiate meaning appears to be fertile ground on which second language acquisition can take place. Since the language output in the postings was written and related to course content, it simultaneously gave students an opportunity to develop more academic language conventions (cf. Lamy & Goodfellow, 1999).

Understanding of Course Content

The electronic discussion groups provided increased opportunities for students to engage with course materials and thus to deepen their understanding of course content, such as lectures, readings, assignments, and class discussions. This occurred on basically two levels: on the one hand, groups tended to engage in expanded discussion of aspects raised in class, and on the other hand, groups initiated additional topics and ideas that had received little or no attention in class. This opportunity to spend more time reflecting on course topics is an added benefit of the discussion groups. Often curricular goals, and syllabus or time constraints prevent class discussions to progress beyond a certain point even though students might like to continue a discussion or need more practice with materials. Electronic discussion groups are not bound to such pressures; the students in the present study were able to pursue a discussion thread at their own pace and over as many turns as they wanted. In addition, the availability of multiple perspectives on topics through each group member's contributions allowed students to arrive at a deeper and richer understanding of course content than would be possible through in-class teacher presentations and discussions that may be dominated by a few students (Berge, 1998; O'Malley, 1995; Weasenforth, Meloni, & Biesenbach-Lucas, 2000). In addition, there is evidence that jointly constructed information in a meaningful context enhances later retrieval of that information in other class activities (Polichar & Bagwell, 2000).

However, electronic group discussions, in which instructor intervention is minimal, also run the risk

of reinforcing students' misunderstandings of course content and concepts precisely due to the negotiation aspect of the activity. Therefore, it is important that the instructor keeps up with the reading and evaluation of each students' posting on a regular basis so that such misunderstandings can be addressed in class and do not escalate into sustained misinformation. In the present study, the students' contributions did at times reveal misunderstandings that might otherwise have gone unnoticed had we not used this assignment. Often, misunderstandings do not surface until a major test is taken, at which point clarification comes too late. Thus, the electronic discussions were a unique window for instructors on both their students' comprehension and misunderstandings of course materials that could be clarified in a timely fashion in subsequent class meetings.

Positive Affective Class Climate

All groups that participated in the assignment described here perceived social benefits (cf. Scarce, 1997). The postings provided opportunities for students to learn more about each other and each other's cultures and perspectives, thus fostering multicultural awareness and tolerance (cf. Collins & Berge, 1996) that not only promoted a positive affective climate within the groups, but that also carried over into the face-to-face classroom environment. Such broadened awareness may not always develop in face-to-face classrooms where not all students participate and where most contributions are driven by content and focus on language and less by students' personal experiences. It also cannot easily develop in occasional synchronous chat sessions since they are too sporadic to build a sense of group cohesiveness. Over the course of the semester, it became evident that each group developed its own online community as evidenced in each group's distinct norms for initiation of postings, length of postings, and topic threads (cf. Korenman & Wyatt, 1996). The electronic discussion groups presented an unthreatening environment for opinion exchange in which stu-

dents could feel comfortable admitting their own ignorance and knowing that their group members would provide support. Students often think that their problems with language or comprehension are unique – the groups enabled them to see that in a community of learners, many share the same problems and can offer each other advice and emotional support.

Forum for Varied Learning Styles

In most second language classrooms, some students tend to dominate class activities and some students tend to be hesitant in contributing actively to class discussions. While some students are outgoing risk takers, others are more reflective and do not get sufficient time to plan their contribution to the class in oral activities. Some students' oral skills are more developed while other students are far less articulate. While the more verbal students receive constant feedback on their language production and thus have increased opportunities to modify their subsequent output, reluctant students have few such possibilities. The asynchronous nature of electronic discussions provides an alternative forum in which students with such opposing learning styles can thrive and benefit.

Students who are shy in the classroom or who are more reflective can take time processing the postings made by their group's members. The pressure to respond immediately in real time is absent; thus, they can reflect more deliberately on reading as well as composing their own contribution to the ongoing group discussion (Aiken, 1993; Drake, Yuthas, & Dillard, 2000; Lamy & Goodfellow, 1999; Sotillo, 1999). Students can take time to draft and revise their contribution before posting it to the other group members. In addition, since the assignment required each group member to contribute to the ongoing discussion at least once a week, it was not possible for students to remain silent as they might do in the classroom. The small size of the groups also encouraged regular turn-taking and postings to the ongoing discussion. Thus, electronic discussions provide an alternative

opportunity for students who are less likely to contribute in a face-to-face classroom to demonstrate their engagement and comprehension of course content (Weasenforth, Meloni, & Biesenbach-Lucas, 2000).

Responsibility for Learning

Most classroom activities are characterized by a high degree of teacher direction and involvement. Even in in-class communicative group activities the instructor is always present and often intrudes into the students' discussion, oftentimes redirecting them or guiding them toward a certain goal and modelling language. However, in order to become more responsible for their own learning, students need to be given choices and opportunities to make decisions about their learning or approach to an assignment on their own. Due to the lack of instructor intervention in the electronic discussion groups, students had to make their own choices on an ongoing basis, which is more difficult to coordinate in an asynchronous environment than in a synchronous, or face-to-face, environment (Abrami & Bures, 1996). Students had to decide on turn-taking sequences within the group, they had to decide which discussion points to initiate, continue, or abandon, and they had to decide the level of depth that their discussions would take, thus taking greater responsibility for their own learning than most other classroom assignments allow them to do (cf. Berge, 1998). In addition, students' negotiations of meaning were entirely self-initiated and -directed as the instructors did not provide suggestions for how to clarify points of non-comprehension. Thus the students had to push themselves to convey meaning clearly and credibly, while receiving regular practice in producing challenging language output. However, such initiative and engagement is not at all a typical learning situation for many students and thus presents a considerable challenge for those who tend to be more dependent learners (Tait, 1999).

Alternative Assessment

Electronic discussion groups present an assignment type that com-

bines ongoing and alternative assessment in a unique way. Since the assignment was carried out over the course of an entire semester and yielded regular contributions that could be evaluated, the instructors could obtain more representative and reliable evidence of students' performance in their classes than could be obtained through sporadic quizzes and tests or one-time papers and presentations (Collins & Berge, 1996). Some students simply do not do well on tests or falter in oral presentations. Electronic discussion groups are an alternative to the more traditional ways of assessing students.

In addition, the instructors' weekly feedback gave students input on how to shape their postings toward the expected goal. Few other traditional assignments give students continued practice in developing their language skills toward a goal; typical class assignments are one-time events, which –while they do provide feedback—do not offer students continued opportunities to refine their language abilities.

The electronic discussions also allowed for a different view of a student's abilities, which would not have been evident from class contributions and performance on traditional assignments only (cf. Chong, 1998; Weasenforth, Meloni, & Biesenbach-Lucas, 2000). Some students whose performance fell into an average range on quizzes and tests wrote well-developed, insightful and critical postings to their groups. The implication of this observation is that many students can be given opportunities in electronic discussions to demonstrate their mastery of course objectives which they might not otherwise be able to do. Thus, integrating electronic discussion group assignments with other tasks and assignments might increase both validity and reliability of assessment procedures used in a course; Weasenforth, Meloni, & Biesenbach-Lucas, 2000).

The frequency of the weekly postings by students to each group, however, also contributed to a very heavy additional workload for the instructors. Throughout a given week, extensive house-keeping was required on part of the instructors:

noting which student had made a posting to his/her group and when, checking if all group members had made their required posting by the due date, printing out the postings, and keeping them organised.

While the weekly evaluations provided feedback to the students on their efforts – students felt encouraged knowing they were going in the right direction, or they knew how to adjust their postings subsequently – this also meant an additional, considerable time investment on the part of the instructor: instead of evaluating an occasional test, or a final paper, or an oral presentation, which occur at intervals throughout a typical course, the instructor had to set aside time for weekly evaluation of all postings in order to provide students with continued feedback, and some students' postings tended to be fairly long. However, despite this extra burden, the benefits of the assignments for the students' comprehension of course content as well as their development of academic language functions were clearly worth the instructor's extra investment of time.

Caveats: The "Red Flags" in Electronic Discussion Groups

The Link to Previous Messages

In an effort to enhance the dialogic nature of the discussion board assignment, students had been required to make explicit links between their own posting and previously posted contributions by their group members (cf. Lamy & Goodfellow, 1999). However, a number of students found this to be a limitation, adding to a more artificial discussion than a natural development of ideas. This factor is exacerbated due to the asynchronous nature of the medium, which frequently entails a time lag of several days between postings, making it harder to perceive continuity in the discussion. Thus, this requirement may have restricted students' attempts at initiating new topics and pursuing new lines of arguments for the sake of maintaining a continuous thread. Also, making explicit links requires linguistic skills and using cohesive devices that students may not have practised suffi-

ciently to feel confident enough in relating their ideas to previous ones. Our recommendation thus is to either teach students the language necessary to make connections to others' opinions, or to abandon this requirement altogether, allowing students to develop even greater responsibility by allowing their group to determine its own path.

Lack of Reflection

Similar to other researchers (Chong, 1998; Hettinger, 1995), we found that the degree of reflection, another requirement for the postings, was not as great as expected. Students' paraphrases of course readings and other content outweighed their synthesis, and evaluation of information. Thus students demonstrated more low level thinking skills rather than high level critical thinking skills. It is possible that the students' limitations in English may have contributed to the predominance of retellings; however, it is also possible that the instructors' lack of modelling what they expected is responsible for the lack of reflection in the students' postings. Thus, our recommendation for teachers is to present students with model postings to discuss elements of critical reflection as well as examples of cohesive ties between postings.

Fixed Groups

While students enjoyed the social benefits of staying in one group for the entire semester, a number of students indicated that they would have liked to change groups, as tends to be the case for in-class arrangements. Even though problems with group dynamics accounted for some of the negative feelings, the other most common complaint referred to a lack of interaction and new ideas. It is clear that other assignment constraints, as outlined above, play a role in this perception: the asynchronous nature of the assignment prevented a more frequent give-and-take of information, and the lack of modeling may have led to a rehashing of already known information instead of a sharing of new viewpoints. In addition, the majority of the students came from Asian language backgrounds, which may further have contributed to the perceived passiv-

ity of some group members (cf. Collins & Berge, 1996). Thus, we recommend that group members be reassigned to new groups at least three or four times over the course of a semester so that students have more opportunities to be exposed to a wider perspective of thoughts.

Lack of Prompt

The assignment required students to initiate their own topics within their groups, thus entailing a high degree of responsibility for their own learning. This was in fact difficult for some students but may not be surprising. Many students came from prior learning environments where it is not common to play an active role in one's learning. We recommend that instructors assign weekly topic prompts on relevant course aspects for a given week, so that those students who prefer to respond to a teacher-provided prompt have a point to get started. Those students who wish to pursue their own ideas should also be allowed to do so. Such an arrangement might allow the instructor to cater to students with varying proficiency levels within the class as well as with different learning styles.

Conclusion

The main objective of this study was to identify the pedagogical benefits – from a communicative language teaching perspective – of the integration of a specific technology (threaded discussions) with a specific task (reflective discussion of course material outside of class), with fixed group assignments of advanced-level ESL students and assessment criteria. We found that this particular set of parameters was successful in a number of ways. It allowed instructors to extend student-student discussions of course materials outside the classroom, an important achievement in light of the fact that many of the students' use of English outside the classroom is limited. The discussions prompted co-construction of clearer understandings of course materials and assignments. Students' comments also indicate that social relationships were forged and strengthened, providing additional support for students. Also, both instructors found the additional opportunity to assess students' understanding

was helpful. The discussions revealed students' misunderstandings that might not have come to light otherwise. On the other hand, they also provided opportunities for quiet students to demonstrate their understanding and knowledge.

Similar to others' observations (Chong, 1998; Hettinger, 1995; Scarce, 1997), students in our study produced not as much reflective thought as expected. With an understanding of the synergistic nature of the various elements of this assignment, we are not ready to fully blame the technology; rather we plan to revise other elements - such as features of the task and student groupings - to determine whether the technology may still allow us to achieve our curricular goals more fully.

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Appendix

Electronic Group Journal Assignment Student Instructions

1. Your instructor will assign you to a group of 3 or 4 students for the semester.
2. Within these groups, you will be expected to carry on electronic group discussions throughout the semester. That is, you will make weekly e-mail contributions meeting the following criteria:
 - Contributions should be reflections of course content.
 - These contributions need to include – but need not be limited to – evaluation of course content. In other words, they need to include critical reflection, not just description or summary.
 - Each student is expected to send at least 1 message per week.
 - Each message needs to be a reaction to previous messages. Contributions must build on previous contributions; that is, your contribution is not a separate, independent message without a relationship to messages from others in your group.

Your contributions will be rated against the above criteria. They will NOT be evaluated based on language accuracy. See the evaluation form below.

Weekly Evaluation Form for Electronic Group Journal Assignment

Student: _____ Date: _____

At least 1 email sent (to group members and instructor)	3	2	1
Messages are on course content	3	2	1
Messages include critical reflection	3	2	1
Messages build on previous messages	3	2	1

3 = Good, 2 = Adequate, 1 = Inadequate

Grade: _____

Sim Prescott and David Prescott

New Information Technology and Pre-service Language Teachers

The structure and content of a university-level course for pre-service language teachers and evaluative work that arose as a result of the course are discussed in this paper.

Introduction

In the first part we describe the structure and content of the Universiti Brunei Darussalam course EL2210, Electronic Resources for English Language Teachers. We account for the pedagogic paradigm of resident tutorial group with remote and resident experts and describe how this model of delivery has enabled the course provision to respond to the constant challenges of Information and Communications Technology (ICT). In the second part of the paper we discuss some of the issues related to the evaluative work conducted with pre-service language teachers who have studied the EL2210 course. We also discuss some implications for classroom teachers, which are inherent in this evaluative work.

Part One: EL2210 Electronic Resources for English Language Teachers

Theories of Learning

The first component of the course is concerned with theories of learning. Widdowson (1994, p. 20) has argued that in order to develop, teachers need "the disciplinary authority of theory (and) to know how to use it as a condition for inquiry." Knowledge and application of this authority are essential to make one's way meaningfully and constructively with respect to electronic ESL resources. In the first component of the course the student-teachers consider all course materials within the frameworks of relevant theories of learning: behaviourism, constructivism and socio-cultural theory derived from the work of Vygotsky (1978).

Levy's (1997) proposal that computer use in language learning

can be categorised into two broad divisions is a useful way of classifying computer operations and applications. Materials (software or online wares) that are intended to instruct, promote the use of computers as tutors; materials which allow users to achieve other tasks (e.g., word processing, concordancing), promote the use of computers as tools. A good deal of CALL software and many English language (ESL) websites can be characterised as being of Levy's tutor type. Furthermore, much 'early generation' CALL software exhibits behaviorist learning principles. Programs such as Storyboard, Gapkit and Clozemaker are based on stimulus/response patterns.

A Piagetian constructivist approach to learning places importance on the learner as an active participant in the learning process, structuring individual experience and knowledge. Learning of this sort emphasises underlying understanding rather than response to a situation. In this approach new experiences are related to existing knowledge, which in turn is derived from previous experiences. Unlike behaviourism, where instruction is central, constructivism emphasises learning; teaching is the means whereby the conditions for learning are created. CALL software programs such as London Adventure and Language Express and (ESL) websites such as <http://www.quia.com/dir/eng/> involve learners in procedural and learning choices. Learners are active participants within the parameters of the programs.

Both behaviourism and constructivism tend to promote learning as an individual endeavour. Jones and Mercer (1993) characterise

behaviourism as a way of describing how people learn in terms of individual thoughts and actions and constructivism as how individuals adapt to the complexities in which they operate. Electronic English language resources, which engage learners individually, have much in common with these approaches to learning.

A weakness of individual models of learning is that they take no account of the social character of most learning, particularly language learning. The social nature of classroom processes and language learning can more appropriately be characterised by the notion of teaching and learning. A great deal of learning (ICT is no exception) involves the sharing of knowledge. Learning word processing or how to use e-mail programs, for instance, results in the possession of knowledge and skills that allow other kinds of information to be shared through print out, file transfer or electronic mail. Used in this way, computers and their programs are, in Levy's terms, tools. In this view of learning, people share knowledge and understanding in order to create a new socio-cultural resource.

A theoretical framework that relates to such a social, communicative, culturally oriented view of learning can be found in the work of the Russian psychologist L. S. Vygotsky. Vygotsky gives prominence to the role of language in cognitive development, problem solving and learning, and emphasises the essentially social nature of cognitive change. The significance of these ideas for the role of the computer in the learning process and the teacher's role in relation to computers in the classroom is the potential of computers to reorganise classroom instruction and make possible the extension of education beyond the classroom. However, as Shive (1999) has pointed out, computers have no intrinsic pedagogy, the direction of the reorganisation depends on teachers and their understanding of ICT. Hence the emphasis in this course is on the student-teachers' development of meaningful and constructive knowledge with respect to electronic English language resources.

Software Evaluation Task

The second component of the course is concerned with collaborative exploration, assessment and evaluation of ESL software. The student-teachers work in small groups to explore a range of CALL software. In addition to considering the software within the frameworks of behaviourism, constructivism and socio-cultural theory they construct instruments for the purpose of reviewing and evaluating the software. For this they receive input from the resident lecturer, they view on-line examples of evaluation instruments and examine instruments developed by previous cohorts of students at Universiti Brunei Darussalam. They choose a CALL software program to trial and evaluate using the instruments they have designed. Finally they evaluate the application, utility and effectiveness of their instruments.

This collaborative task is well suited to the students at Universiti Brunei Darussalam. Commentators on Bruneian culture and society (Blunt, 1988; Maxwell, 1996) have characterised it as collectivist in orientation, with preferences for group solidarity and cohesion. Moreover, the pedagogic justification for the collaborative nature of this task is that its exploratory, problem-solving aspects are highly pertinent to collective analysis, trial and resolution. In learning theory terms it is a constructivist task encompassed by a Vygotskian style socio-cultural procedure. It also allows the students to utilise their collectivist propensities to aid each other in resolving the challenges the task poses.

Website Evaluation Task

The third component of the course is concerned with assessment and evaluation of ESL websites as resources for teachers and students. For this, the student-teachers work individually to construct instruments to review and evaluate ESL websites. Again, they evaluate the application and utility of their instruments. The assessment and evaluation of websites is also conducted in the context of the theories of learning with which the course commenced. This time the

students have input from the remote lecturer as well as the resident lecturer and they view on-line examples of evaluation instruments and some examples of instruments developed by previous cohorts of students at Universiti Brunei Darussalam. This is an individual task building on the collaborative analysis, trial and resolution procedures of the software evaluation previously undertaken. In learning theory terms, it is a task with clear elements of constructivism embedded in it. There are some socio-cultural aspects as the task results in an electronic end product viewed by the resident lecturer.

The Pedagogic Paradigm

The ICT revolution in the way we communicate and conduct business is also affecting the way we educate. One growing application of the Internet to education is web-based instruction (WBI). This learning environment affords small institutions such as Universiti Brunei Darussalam the opportunity to share resources and expertise on a regional or global level. In the instance described in this paper, colleagues teaching similar courses at different universities have pooled resources and expertise. The Curtin University of Technology (Western Australia) lecturer took responsibility for the work on the websites while the Universiti Brunei Darussalam lecturer took responsibility for the educational and learning theories that were used to underpin the assessment and evaluation activities and provide the theoretical background.

The pedagogic paradigm is that of remote facilitator, resident tutorial group, and resident lecturer/backup facilitator. A key feature of the course is the on-line tutorial input of the remote facilitator. These tutorials are aimed at consolidating the knowledge and skills development that the student-teachers are engaged in by making available expertise otherwise lacking at Universiti Brunei Darussalam. The pedagogic paradigm together with the evaluation tasks allow the student-teachers to develop the "freedom of action" Widdowson (1994, p. 20) writes of, within limits of dis-

cipline and authority as the "necessary enabling conditions".

Practical Considerations

From a practical point of view one of the strengths of the model is its flexibility. As it is not tied to any particular platform, portal or communications application, it can be implemented in a wide range of environments and can withstand unanticipated electronic resource and delivery issues. Initially we used Groupware applications for conferencing. We considered using CU-SeeMe and Netscape Conference among others, before selecting Microsoft NetMeeting. This application features a rich set of conferencing features including text-chat, full duplex audio, video, and a collaborative 'whiteboard' area where figures may be drawn and images pasted. NetMeeting also allows the others in the meeting to view, or even use an application on a remote computer with its 'share' feature. We planned to take full advantage of this feature by having the remote expert instruct the tutorial group in the use of one or more CALL applications. However, a trial run established that we did not have enough bandwidth¹ between Curtin University in Perth and Universiti Brunei Darussalam to employ all features successfully. As a result, we revised our procedure, presenting multimedia 'input' from the remote expert, and reflecting on this through the text-based chat feature, augmented by the 'whiteboard'.

The second year we conducted the course bandwidth was even more of a limiting factor as the remote facilitator was on a short-term placement in a rural area of the Southern Philippines, where telephone infrastructure is rudimentary, unreliable and supports only slow data transfer rates. In such low bandwidth networking situations Groupware applications are impractical, so the model was implemented using a Java-based synchronous text chat applet. We chose to use the synchronous text chat application in WebCT²; however there are alternatives available on the WWW currently, many of which are free³. Such a platform for

our conferencing proved both flexible and functional. As there was no requirement to install or configure applications – the Java applet is accessed through any version 4+ Web browser – the remote facilitator was able to participate from wherever the Internet could be accessed, whether that be a College Campus, friendly business office, or Internet Café. This flexibility could apply equally to students, who could participate from home or an Internet Café as easily as from a University computer laboratory. Furthermore, the Java applet platform proved functional in that it was tolerant of low bandwidth connections, and supported the creation of multiple ‘rooms’ or channels, for small group discussion.

Protocols

While the selection of appropriate software platforms for the conferencing was important, of equal significance was the formulation of a set of protocols to frame and structure the discussion. Meetings, debates and group forums can easily degenerate into chaos without a set of protocols to structure them, and this likelihood is increased where the important non-verbal aspects of communication are unavailable. Furthermore, with the exception of the remote facilitator, members of the group were unfamiliar with the use of ‘groupware’ conferencing software for anything other than one-to-one informal ‘chatting’. It was therefore determined that a hierarchical style (Herron, 1989, p. 18) of facilitation would be appropriate. To this end, a set of protocols was negotiated prior to the conferences, establishing three modes of discussion: facilitator input, during which the facilitator delivered extended commentary; individual student input, a round-robin mode where students could offer their comments and reflections to the group individually in sequence; and open discussion, where any member of the group could raise or comment on any issue at any time. Text signals for the facilitator to indicate transition from mode to mode were agreed on, and each conferencing session included several cycles through all three modes. These protocols

proved effective and clearly contributed to the quality of the discussion generated, although it is anticipated that were a group to become more familiar with the online conferencing environment, a more autonomous style of facilitation could be adopted.

Outcome

Regardless of the specific platform upon which our conferencing was established, the results of the discussion and reflection were extremely satisfying. The text-based chat environment, in tandem with suitable protocols, appeared to invite a more equitable contribution from all participants. Students who might be reluctant to speak up in the ebb and flow of normal debate were afforded the opportunity to make a considered contribution in the text-based debate. In addition, there was some indication that relative anonymity and lack of face-to-face pressure of the conferencing environment militated against the collectivist nature of the students and produced more of a ‘debate’. The text-based environment, therefore, may have promoted a more ‘critical’ perspective then might have been achieved in an audio-visual conferencing medium, or in a traditional classroom. Finally, as all discussions were logged, a valuable record was available with which to design follow-up sessions and refine our model.

Summary

In general pedagogic terms, the use of ICT to provide expertise unavailable at Universiti Brunei Darussalam has enhanced the quality of the course. ICT makes this possibility feasible without involving substantial costs. Internet connections are considerably cheaper than telephone, video or satellite connections so the potential exists to provide a programme of integrity within a modest economic framework. In particular, in terms of technology, the available possible ICT options permitted change and adaptation in response to changing circumstances without unduly eroding the integrity of the course. The model offers a means of bringing cost effectiveness and quality of delivery closer together for a small,

geographically remote institution such as Universiti Brunei Darussalam, with limited personnel and budgetary resources.

Part Two: Evaluation of Electronic Resources and Classroom Issues

In this section of the paper we discuss some of the issues related to the evaluative work conducted with pre-service language teachers who have studied the EL2210 course. We also discuss some implications for classroom teachers, which are inherent in this evaluative work.

Issues Relating to the Evaluative Work

It was stated earlier in the paper that an essential supposition informing this course is derived from Widdowson (1994). Further comment from that writer is pertinent to the evaluation tasks.

Freedom of action is meaningless without limits: these are, negatively, constraints when they inhibit action, but they are, positively, necessary enabling conditions. The crucial thing is not to deny the disciplinary authority of theory, but ... to make it relevant as a set of bearings to find your own way (p. 20).

The fields of CALL software and English second language websites are domains where “necessary enabling conditions” are needed for teachers to make their ways meaningfully and constructively. One important reason for beginning the EL2210 course with a consideration of learning theories is to provide the student-teachers with the “authority of theory” in order to “enable” their discernment of the underlying principles inherent in the resources they evaluate.

This is the first issue relating to the evaluative work. It is fundamentally important for teachers and this importance of having some “authority” to act as “a set of bearings” with respect to CALL software and English second language websites can be illustrated by a simple analogy. When English language texts or course books are published, critical reviews of the contents and potential applications of these texts and course books appear in profes-

sional and academic publications which are easily accessible to teachers. This professional, critical literature, which is an important feature of print based English language resources, has no equivalent as yet in the world of electronic English language resources, particularly those that are on the Internet. Even a well established site such as TESL Internet Journal (available at <http://www.aitech.ac.jp>) carries few critical reviews of the English language resources available on the Internet. It is, therefore, important that teachers are given opportunities to develop critical, evaluative tools that will allow them to judge the worth of the electronic resources that they might consider using with their students. The involvement of the student-teachers studying EL2210 in developing critical, evaluative procedures is an important dimension of their academic and professional growth.

The wider issue which derives from the development of critical evaluation and which applies to all teachers who are called on to embrace ICT in their classrooms, is an issue of professional development and growth with respect to electronic resources. Eastment (2001) has pointed out that about ninety per cent of money spent on electronic teaching resources is spent on hardware, about ten per cent is spent on software and almost nothing is spent on training teachers or on technical support. Eastment claims these figures are fairly standard regardless of country. Certainly one of the criticisms levelled at the National Information Infrastructure Advisory Council set up by the Clinton administration (Oppenheimer, 1997, p. 2) has been to do with an over concern with hardware at the expense of teacher development.

A second issue relating to the evaluative work concerns the exploratory, problem-solving aspects of the two evaluation assignments in EL2210. Luke (2000) would characterise these assignments as rich learning and assessment tasks because of their exploratory, problem-solving nature. The option of having the student-teachers evaluate software and websites using ex-

isting instruments was not, in the view of the course lecturers, a realistic option. This is partly because there are few existing instruments for evaluating electronic resources. More importantly, the course lecturers believe that the current approach is more suited to the realities of teachers' situations with respect to electronic resources. In the volatile world of ICT, dependent, non-critical modes of thought would hardly equip student-teachers to face and deal with the unexpected and unpredictable issues and circumstances that they will certainly encounter. Luey has commented about the influence of ICT on professional lives, "people need to be trained to learn and change, while education seems to be getting more specific" (cited in Oppenheimer, 1997, p. 10). Again, analogy with print-based English language resources is apposite. As a technology the book is established in form, has a long tradition and is not subject to radical change. The same does not apply to electronic resources because, whether they are software or online wares, they are the focus of continuing change. Eastment (2001) has argued for the avoidance of what he terms "the hype of ICT". The development of CD ROM technology and the coming of digital electronic technology which may have considerable implications for multimedia enhancement of teaching resources make Eastment's call opportune. In such capricious circumstances it is important to help teachers acquire a knowledge base that enables them to have the capacity to critically examine each new electronic "miracle" in a principled and systematic way.

Electronic Resources and Classroom Issues

One problem for classroom practitioners with respect to evaluation of CALL software is the difficulty of gaining both an overview and a sense of the detail of programs simultaneously. Computers present information in linear patterns and interaction is restricted to what can be accessed at the moment, so it is seldom possible to conduct, or assess different activities concurrently. Meisling (cited in Oppen-

heimer, 1997, p. 10) comments "a computer ... gives you tunnel vision". In practical terms this means that comparative evaluation is restricted by the limits of the technology in a way that does not happen with print materials. The reality for classroom teachers is that evaluation of CALL software is therefore unavoidably time-consuming. The implications of this reality are that already busy schedules have even more demands placed upon them so that often teachers simply do not have the time to make the evaluations required.

Another issue for classroom practitioners is that of navigation within and between websites. This has become increasingly important because sites have tended to become more and more loaded with information, much of it redundant. For instance, many sites now carry advertising, or even commercial downloads which require a payment. This is one key difference between CALL software and ESL websites. Software may be relatively expensive in comparison to websites but it does come free of advertising and unnecessary links that are increasingly features of websites. There is a need for precise pathways through the proliferation of materials that can clog some websites, an issue that doesn't arise in CALL materials. The implication here rests on the need to promote critical modes of thought in teachers so that the technology is a tool and not a master. A number of prominent educators in the United States (cited in Oppenheimer, 1997, pp. 13-14) have raised the issue of information as opposed to understanding with respect to the Internet. Eastment (2001) talks of the conflict between lots of information and quality information, between information and knowledge or wisdom. Teachers need to be aware of the increasing importance of evaluating these features in websites and sorting out the substantial from the superfluous.

Eastment (2001) has promoted the idea of teacher competencies for the Internet. One of these, evaluating, he advocates as a competency needed by teachers who wish to use the resources of the Internet. A

number of his ideas with respect to evaluation of websites (currency of material, accuracy of the language, authority and URL information) are very important considerations for dealing with electronic English language teaching materials. The relative freedom or anarchy (depending on your viewpoint) offered by the Internet means that anyone with the knowledge can establish a website. The student-teachers in EL2210 have identified outdated sites, inaccurate language and questionable status of site developer as some of the pitfalls that the unrestricted nature of the Internet allows. As they have pointed out the need for teachers to have critical, evaluative tools to detect such perils is obvious.

The implication for classroom teachers is that a certain level of knowledge and expertise is essential if the electronic teaching resources of the Internet are to be used effectively and efficiently by classroom teachers. As we have already indicated in this paper, support for the acquisition of this sort of knowledge and expertise with respect to ICT in schools is poor. Yet acceptance of this reality is inescapable, a message which educational administrations seem slow to embrace. All too often money which should be spent on developing critical, evaluative skills and ICT competencies in teaching staff is diverted into purchasing yet another set of "essential" hardware. It is salutary to remember that without the pedagogic support of the teaching staff the potential of the ICT investment in any institution will not be realised.

Notes

1. The amount of data that can be passed along a communications channel in a given period of time.
2. WebCT is an integrated course management/delivery tool designed by the University of British Columbia. Curtin University has extensively implemented this tool, which works like a web server with a number of special features. It allows 'accounts' to be set up for unit/course designers, who can then mount course

content in the form of HTML pages. WebCT comes with its own HTML editing functions, or the course designer can upload independently created files. The course designer can also make use of a suite of applications to support his/her course, such as synchronous text chat (the application we used), e-mail, a discussion board, and interactive quiz/test/exercise creation tools. This is a tool designed to facilitate online course delivery, which is the primary use Curtin University makes of it.

3. For example: all the major Web Portal companies (Yahoo, Excite, Lycos, etc.) offer free Java-based Chat. There are numerous Chat sites available, such as the Singapore based Alamak.Com (www.alamak.com); and at the price of having to display some advertising on their web page, users can get code which will place a Java-based Chat room on their website from any number of providers (e.g. www.parachat.com).

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Mosaic

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Vol. 8, No. 1
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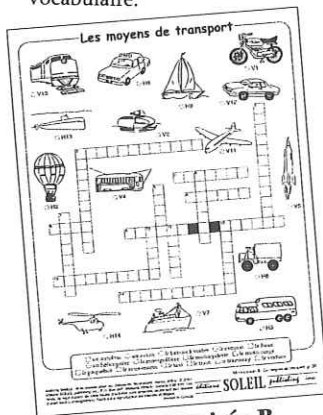
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Mots croisés pour les débutants

par Anthony Mollica

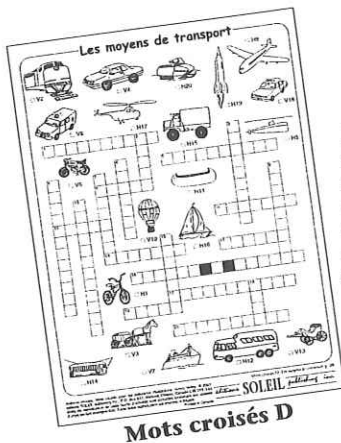
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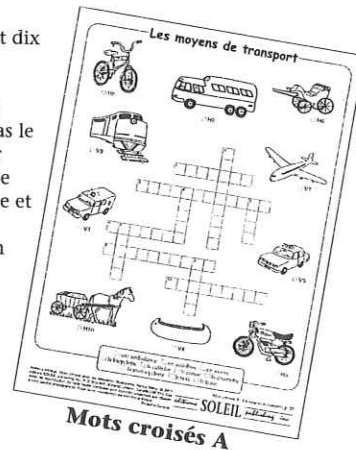


Mots croisés B

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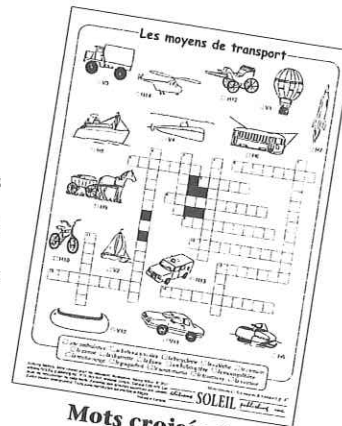


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Mots croisés A

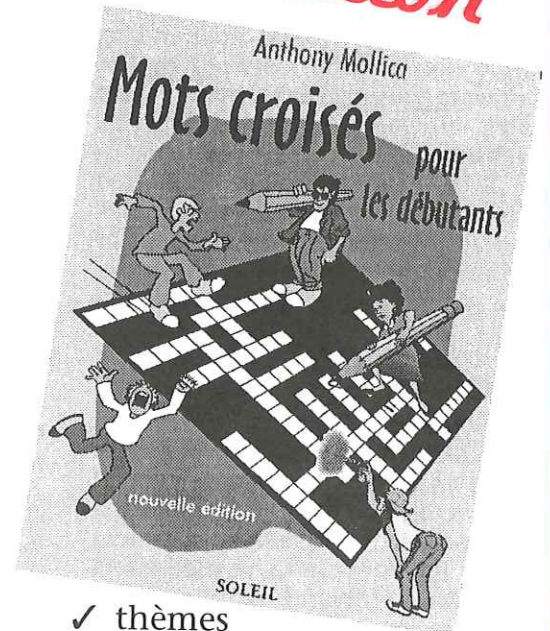
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Mots croisés C

Les *Mots croisés D* contiennent les vingt illustrations et n'utilisent que l'image comme stimulus. Lorsque l'élève arrive au dernier casse-tête, il a déjà vu et écrit chaque mot deux fois et l'activité finale peut être considérée comme un casse-tête d'évaluation pour vérifier si l'élève a appris tous les mots se rapportant au thème.

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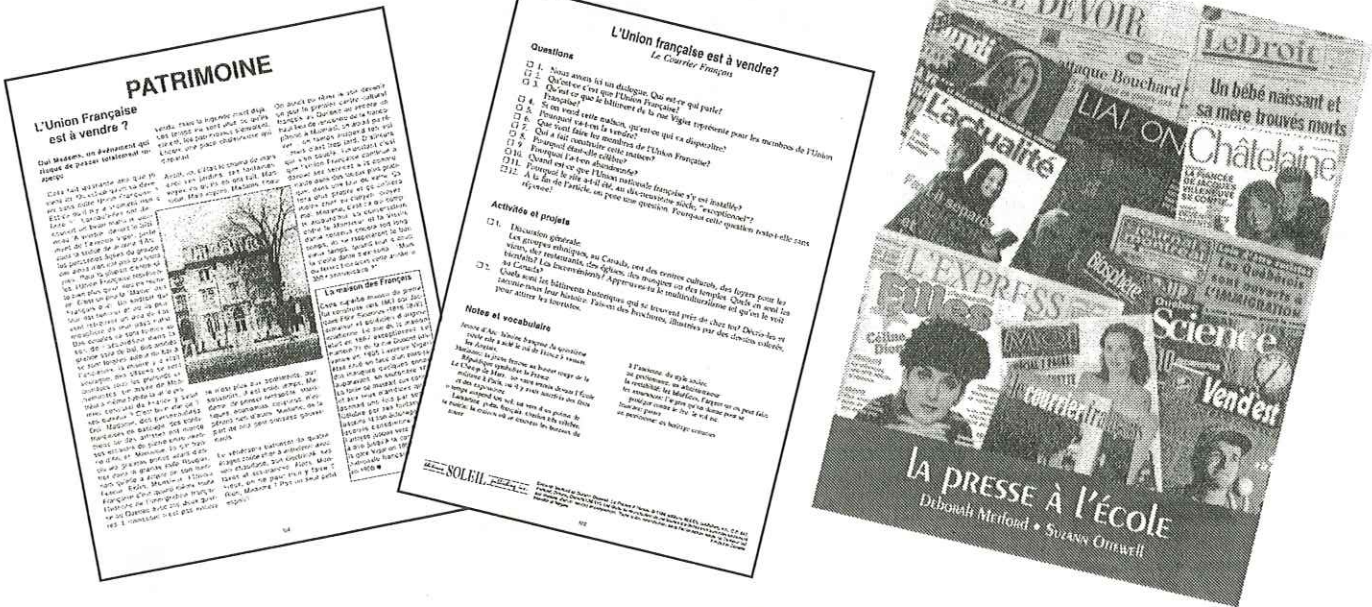
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LA PRESSE À L'ÉCOLE



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Activités créatives et motivationnelles 1

Jouons avec les chiffres!

Anthony Mollica

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Anthony Mollica est professeur titulaire à la faculté d'éducation de l'Université Brock où il travaille à la formation et au perfectionnement des enseignants en didactique des langues secondes.

Les nombres de 1 à 20
Insérer dans les cases les nombres suivants.

1 un 20 vingt 19 dix-neuf
2 deux 18 dix-huit
3 trois
4 quatre
5 cinq 6 six
7 sept 10 dix
8 huit 9 neuf 11 onze

Quelle est la date aujourd'hui?
Aujourd'hui, c'est le lundi 9 décembre. C'est aujourd'hui lundi 9 décembre. Aujourd'hui c'est lundi. C'est aujourd'hui le 9 décembre.
Lis à haute voix puis écris les dates suivantes. Quelle est la date aujourd'hui?
1. _____
2. _____

Nombres cachés
Trouve les nombres de 1 à 20 cachés dans la grille. Les nombres peuvent se lire horizontalement de gauche à droite, de droite à gauche, verticalement de haut en bas, de bas en haut ou diagonalement en haut à droite et en bas à gauche. Puis écris les lettres qui le restent dans le cadre en bas de la page et les lettres les questions que le nombre 9 peut avoir comme 6.

1 un 2 deux 3 trois 4 quatre 5 cinq 6 six 7 sept 8 huit 9 neuf 10 dix 11 onze 12 douze 13 treize 14 quatorze 15 quinze 16 seize 17 dix-sept 18 dix-huit 19 dix-neuf 20 vingt

T D Q E S T R O I S
- I O N D O N Z E
U X V I N G T T I
O - A H X C M H B Z
E N T S - D O U Z E
U E O R S X R I R Z
S U R X E L I T S N
I F Z I P I A D E I
X U E D T U Z U P U
A T E T Q E F E T Q

La date de ton anniversaire
Je vais deviner la date de ton anniversaire.
Impossible!
Pense à la date du jour de ton anniversaire.
7
Multiplie-ja par 2.
 $14 \times 5 = 70$
 $7 \times 2 = 14$
Ajoute 20 à ce produit.
 $70 + 20 = 90$
Multiplie ce nombre obtenu par 5.
Multiplie cette somme par 10.
90 x 10 = 900
Juin est le sixième mois.
 $900 \div 6 = 906$
Ajoute-y le numéro du mois de ta naissance.
À quel total arrives-tu?
906
Ton anniversaire est le 7 juin.
Oui. C'est ça. Mais comment as-tu pu deviner?

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