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## Developing Analytic, Cognitive and Linguistic Skills with an Electronic Negotiation System

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### Abstract

*An increasing number of Web-based systems, including brainstorming, decision-making, and negotiation support systems, are being developed to aid users in solving particular types of problems in various contexts. These systems can be effectively used in language teaching providing learning experience in an authentic setting. The purpose of this paper is to discuss the value of integrating Inspire, a Web-based negotiation support system, to augment conventional teaching of communication and academic skills in second language courses. Inspire provides a platform and tools for negotiators to work together to resolve their differences. The preparation for the negotiation and the conduct of the negotiation in an asynchronous mode are designed to give the users control over the process and the outcome of their negotiations. Exchange of offers, counteroffers and messages creates a framework for a meaningful interaction, where results depend on the users' decisions and their ability to communicate effectively. Going through different phases of the negotiation, the students develop analytic, cognitive and linguistic skills, albeit some better than others. The paper argues that systems oriented on solving problems in a group setting lend themselves to the communicative approach to language teaching embedded in the theory of second language acquisition. It also discusses issues related to its adoption, and suggests strategies for its diffusion.*

### 1. Introduction

The Web's explosive growth can be partly attributed to the fact that educational institutions saw great potential in its applications in education. The Web continues the

tradition of the pen, which some believe is the single most important tool of our civilization which allowed for storage, dissemination and transmission of knowledge from generation to generation [1]. It also extends the pen's capabilities by becoming the world's largest library and source for research, a communication device and a new medium through which complete courses are delivered.

There are several types of on-line resources used in teaching: (1) materials and systems designed to provide course-specific educational services, (2) generally available resources used to enrich and expand courses, and (3) systems designed for solving particular types of problems in various contexts. This last type, often developed for solving or simulating real-life problems, can be effectively used in a variety of courses, including language instruction, where it provides learning experience in an authentic setting.

Information and communication technologies (ICT) are used in education either as an "augmentation aid to conventional teaching" or as a "complete and integrated solution to course delivery" [2]. Inspire, a Web-based negotiation support system (<http://interneg.org/inspire>), was used in English as a Second Language (ESL) courses as a three week thematic unit to enhance the delivery of a conventionally designed language curriculum. It allowed the students to interact with software and with other people over computer networks.

The purpose of this paper is to discuss the adoption and diffusion of Inspire for teaching different types of ESL courses, including English for Academic Purposes, English for Specific Purposes (Engineering and MBA) and English Writing for Academic Purposes. We discuss the reasons why Inspire, a system designed for research and management training, can effectively be adopted to the ESL curriculum. In order to do that we give a brief

overview of the key language learning theories and focus on the underpinnings of the communicative approach to language acquisition. We view the fit between the learning theory and the Inspire system, which is a platform that allows for language acquisition, as a key requisite for the diffusion of technology developed for one particular area into other areas. We also discuss the possible difficulties with the systems' diffusion into language courses.

Section 2 describes ESL instructors and students and their experience with using IT. Section 3 describes the Inspire system. The communicative approach to language teaching and the reasons for using Inspire in language courses are discussed in Section 4. Section 5 discusses teacher and student experiences and the value of the process ascribed to it by its participants. Section 6 looks at the prospects of Inspire adoption and its diffusion in the ESL community. Conclusions are presented in Section 7.

## 2. ESL instructors and students, and IT

ESL teachers are often perceived as having a historic aversion to the use of digital technologies in the classroom. This attitude may be explained by their concern that experimenting with new ideas may produce unintended consequences with a population of students who deal with a variety of adjustment problems. On the other hand, bridging the gap between the students who went through North American educational institutions and those who did not is of primary concern to ESL instructors. Adopting new educational technologies can help bridge this gap.

The first computer-assisted language learning (CALL) programs were imbedded in the behaviorist methodology that dominated language instruction in the sixties (in a number of ESL centers it is still the prevailing methodology). So, paradoxically, the new technology contributed to reaffirming the "old" approach of "drill and kill", and inhibited the development of computer software for communicative language teaching. However, since the late nineties, the use of the Web-based systems in ESL instruction has reflected communicative language teaching, task-orientation, and process approaches to writing [3]. Using the Web for information searches and email messages (newsgroups, chat rooms) are the two applications that have been most successfully diffused in university and college levels ESL courses.

Early adoption of email can be attributed to its ease of use and the pedagogical advantages it offers. Kroonenberg [4] tracked students during the academic year as they corresponded via email for various assignments and concluded that email promoted development of writing, reading comprehension and thinking skills. However, email use for cross-boundary communication is rare in ESL. Such use requires that instructors from different organiza-

tions cooperate and assign tasks that involve complicated coordination of student work. Furthermore, monitoring students in cross-boundary email communication is difficult, with the possibility of instructors' losing control over their students' work and progress [5].

If the logistical problem of matching students in different locations, matching language and non language students could be made easier, and if their interaction could result in a final product that would be handed in for evaluation, then, we believe, many instructors would incorporate cross classroom and cross disciplines interaction among students into language curricula.

Below we describe Inspire, a Web-based negotiation support system, which has been successfully incorporated into course design in English as a Second and English as a Foreign Language courses.

## 3. Inspire negotiations

### 3.1 Inspire system

Inspire, a Web-based negotiation support system developed within the InterNeg project (<http://interneg.org>), has been operational since July 1996. It is based on the phase model of negotiations, and it integrates Internet technologies with decision and negotiation support [6].

The system is designed to develop an environment that supports electronic negotiations over simple or complex problems, including real-life situations. It combines elements of traditional bilateral negotiations (i.e., exchange of messages and offers between parties) with a communication platform, and analytical and visual decision support tools. It assists the negotiation process and provides a platform for conducting anonymous negotiations.

Inspire has been used for research purposes and in this mode it provides negotiators with one standardized case of business negotiations in order to allow for statistically valid analysis. Research objectives include study of the use of decision analytic methods in the practice of negotiations and of the impact of culture on electronic negotiations [7].

The negotiation situation is "culturally neutral", meaning that users from almost any country are familiar with it and therefore an extended contextual explanation is not necessary. As the predominantly international users' English proficiency is not easily predictable, the description of the case is fairly simple and fits within one and a half pages.

The analytical features of the system support users in their decisions in each of the three phases of negotiation: pre-negotiation, negotiation and post-settlement [6]. In the pre-negotiation phase, each user analyzes the situation, the problem and the opponent and specifies his/her preferences and reservation levels. The users read the

case, rate issues, options and packages by filling in simple tables, and verify ratings of selected offers. Specification of preferences enables the system to construct the user’s utility function. The pre-negotiation questionnaire asks, among other things, about the expected outcome and the worst acceptable offer. The straightforwardness and simple informational requirements make the system easy to use for people from different educational, professional and cultural backgrounds.

During the negotiation phase the users exchange offers, counteroffers and messages. Offers consist of the four negotiated issues and values attached to them. The offer rating is automatically displayed beneath the table containing the offer. The users can also send a message to accompany the offer or send a message without an offer. The system records the process and provides a negotiation history as well as a graphical visualization of the negotiation’s dynamics which the users can check at any point of the negotiation.

The three phases and key activities supported with the Inspire system are illustrated in Figure 1.

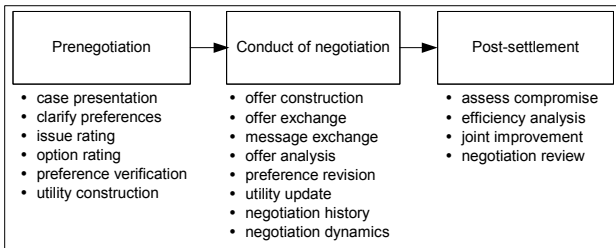


Figure 1. Inspire negotiation phases and activities.

### 3.2. The case

In the most often used negotiation case, users represent two companies: Itex Manufacturing, a producer of bicycle parts, and Cypress Cycles, which builds bicycles. Both sides negotiate over four issues: the price of the bicycle components, delivery schedules, payment arrangements and terms for defective parts return. There are between 3 and 5 predefined options for each issue, so there are altogether 180 complete and different potential offers. Negotiators read the description only of the company they are asked to represent (not their counterpart’s) and they make their own decisions about preferences, strategy and tactics.

Negotiators exchange offers consisting of values for all four issues (price, delivery, payment, return of defective parts). For each issue there is a pre-specified set of options, i.e. issue values. The negotiators can attach verbal messages in which they can use different strategies and pressure tactics to influence their counterparts’ decisions and “wrinkle out” any outstanding issues. To this effect they can choose to send messages without changing

their offers. Naturally, this feature of the system plays the same role as the more traditional media of communication by mail and fax.

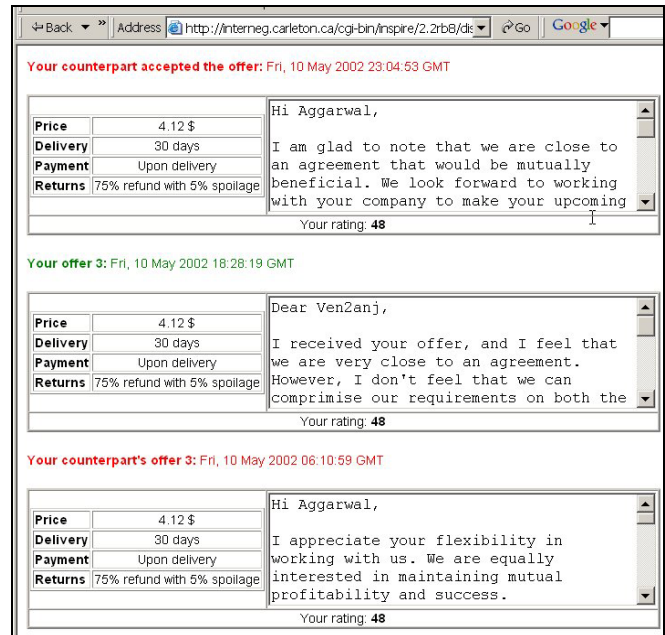


Figure 2. History of offers and messages

An example of offers and messages exchanged by two Inspire users (Aggarwal and Ven2anj) is presented in Figure 2.

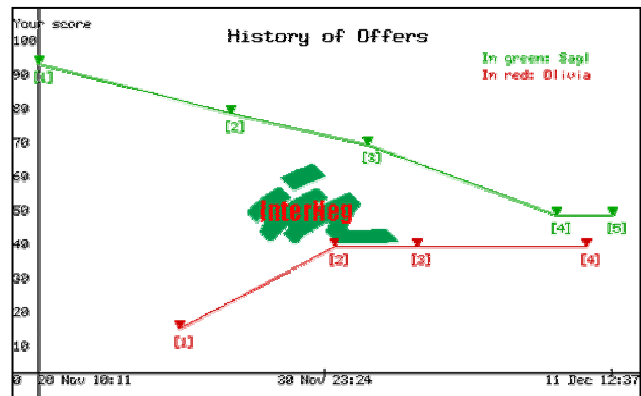


Figure 3. History graph

During the negotiation the participants can check the history of offers and counter offers. Figure 3 provides graphical representation of the history of offer exchanges between Sagl and Olivia. This graph represents offers’ ratings in the rating space of Sagl and therefore it is visible to Sagl and not Olivia. A corresponding graph in Olivia’s rating space is constructed for Olivia.

After the parties reach a compromise the system determines whether the compromise is efficient. If it is not,

the system suggests a post settlement phase. The phase begins with the computation of efficient alternatives. The parties may then continue negotiation until they reach an efficient compromise.

### 3.3. Procedure

Inspire negotiations are typically set up once a month for groups of students from a number of universities and training centers. There are between 100 and 250 students from 3-6 universities who negotiate at the same time. Students log in to the system by providing the negotiation name which is selected by the instructor, and the user name which they select for themselves. Their counterpart knows only their user name. Neither the instructor nor the counterpart can have access to a student's negotiation records without his/her consent.

Inspire users do not receive any incentives or prompts from the InterNeg team. Those who conduct negotiations as part of their course load are motivated by their assignment requirements. Their willingness to conduct negotiations or to achieve compromise cannot be verified by the instructor because: (1) the negotiation results also depend on the opponent, and (2) instructors do not receive any information from the InterNeg team regarding their students' activities. There is one exception to the lack of control on the part of InterNeg. If a negotiator complains that his/her counter-part does not respond, then the counterpart receives an email from the InterNeg team. If the counter-part remains inactive for three days, the negotiation is terminated and the negotiator is given an option to enter a new negotiation with another counter-part. In each series of negotiations there have been less than 5% of inactive partners.

Negotiations are conducted over a period of three weeks with an imposed deadline. Upon request from both negotiators the deadline may be extended. Also, at any point in time, the user may terminate the negotiation and request a new negotiation.

## 4. Language and language learning theories

### 4.1. From Skinner, Chomsky to Krashen

Inspire was chosen for English courses because it lends itself to the communicative approach of language teaching which is embedded in *second language acquisition theory*. This theory was formulated in the eighties as a response to the behaviorist approach to language and language learning, and the subsequent cognitive code [8].

Behaviourists argue that language is mostly behavioural and not mental; it is learnt by the process of habit formation. In terms of first language learning, the child imitates sounds, gets reinforcement and the positive reinforcement (conditioning) leads to repetition. This

approach dominated second language instruction in the sixties when audio-lingualism and language drills offered an alternative to the grammar-translation approach. It still informs classroom practice in a number of ESL programs.

Chomsky challenged the view that language is merely a "verbal behaviour" and pointed out that language learning is a much more complex task than behaviorists would have it. According to his linguistic theories, under the "verbal behaviour" is knowledge of a complex system of rules which accounts for linguistic competence.

Chomsky's linguistic theories have been criticized by the proponents of the theory of second language acquisition (SLA) who maintain that they bear similarity to the grammar translation approach and fall short of fulfilling the potential of the classroom [9]. Building on observations of first and second language learners and on work of many language-learning theoreticians, Krashen formulated a theory of second language acquisition discussed below.

### 4.2. Theory and practice of second language acquisition

The theory of second language acquisition has been widely adopted in ESL. It is based on five hypotheses [9]: (1) acquisition is different than learning; (2) there is a natural order of acquiring language structures; (3) learning plays the role of monitor; (4) input is crucial to language acquisition; and (5) affective factors influence language acquisition.

The acquisition is different than learning hypothesis implies that there are two different ways of developing linguistic competence, i.e. acquisition and learning. Language acquisition is a subconscious process not only for children but also for adults; acquirers "pick-up" language in implicit and informal ways. They may not know the rules but they develop a "feel" for correctness. Learning, on the other hand, is a conscious knowledge of language and language rules. It implies learning the language in an explicit and formal way. While error correction has little effect on language acquisition, it is a useful strategy for learning.

A natural order of acquiring language structures means that there is a natural sequence in which grammar structures are acquired. This order is different in the first and second language.

While acquisition is responsible for initiating utterances and for language fluency, learning plays the role of a monitor (editor). The changes that the language learners make happen either before or after utterances (spoken or written) are made. Furthermore, when it comes to performance, the knowledge of language rules plays only a limited role because in order to apply the knowledge of the rules three conditions have to be met: time (to make

changes to the form), focus on form (which takes away from the focus on meaning) and knowledge of the rule.

The hypothesis which states that input is crucial to language acquisition explains how we acquire (as opposed to learn) the language through comprehensive input. We “go for meaning” using more than linguistic competence. To understand input we use context, background knowledge, and other extra-linguistic clues. And we acquire language when at the level of competence (i) input contains structures from the competence level (i + 1).

The notion that affective factors influence language acquisition was first proposed by Dulay and Burt [9]. The affective filter hypothesis emphasizes the effect of motivation, self-confidence and personal and classroom anxiety on second language acquisition. High motivation, self-confidence and low anxiety are conducive to second language acquisition.

The SLA theory has implications for teaching; exposing students to comprehensible input and communication is crucial because it satisfies syntactic requirements for optimal input. Optimal input should be relevant and interesting to students but it does not need to be grammatically sequenced, when unsequenced comprehensible input has built-in review and recycling. Another pedagogical principle, contextualization, calls for the creation of a realistic context which motivates learners/acquirers to “go for” meaning. Students learn from participation, which gives them some degree of control. Interesting and relevant topics and activities lower the level of anxiety. Finally, development of learning strategies and tools that help students improve their language beyond the classroom environment defines effective language teaching.

To sum up, an effective second language teacher provides input, makes it comprehensible in a low anxiety atmosphere, and teaches language acquisition skills and strategies that students can use outside the classroom.

In order to accomplish the pedagogical requirements of second language acquisition theory, a communicative curriculum for second language instruction was designed. The core of the curriculum comprises thematic units. Readings, discussions, listening and writing on a given topic for an extended period of time provide comprehensible input with built-in review and recycling and an “incubation period” which helps language development. For these reasons we considered Inspire a good “candidate” for a thematic unit. Furthermore, it offered a platform for authentic interaction focused on resolving a conflict of interest situation.

### 4.3. Inspire and second language acquisition

Inspire has been developed for a variety of users but it lends itself to language teaching that is imbedded in the theory of second language acquisition. The site provides

a context rich in language input including reference materials, how-to guides and research papers.

The system guides students through different steps and phases. Before entering the negotiations they read about Inspire, the negotiation case, the demo, and they can also refer to FAQ. The preparation phase also includes rating issues, options and packages. This allows for a gradual move from absorbing information to analyzing it and making decisions. After filling out the pre-negotiation questionnaire, the users prepare the first offer, and send the first message to their partner. From then on the students exchange offers and counteroffers with messages through which they try to influence the negotiation process and the outcomes. The negotiation ends when the partners reach a consensus, or decide to terminate the negotiation because they realize that they will not reach an agreement or when the time runs out.

In the Inspire negotiation the focus is not on language but on meaning. There are no built-in language activities or language exercises or error correction. However, in order to accomplish the task the students have to make an effort to understand what to do and how to do it. To this end they use the context, their background knowledge and other extra-linguistic clues. They also have to communicate with their counterpart, to the best of their linguistic ability, to find a resolution to the conflict of interests’ situation. Their messages may have language errors, but errors are part of the language development process and through the comprehensible input they should be gradually eliminated. Active participation gives each side equal control over the process and the outcomes. Although the context is not fully naturalistic the communication that takes place is authentic. Therefore the conditions for language acquisition are met.

By providing asynchronous communication, Inspire allows “extended time and opportunity to react, respond, and interact with the material and each other” [10]. Asynchronous interaction may be less spontaneous but at the same time there is time to think over not only the content but also the language of the message. The students can spend time on polishing and editing messages, using all the resources available to them, such as, glossary, models of emails and other Inspire pages, as well as their knowledge of grammar rules. Thus conscious learning can complement language acquisition.

### 4.4. Negotiation and communication

Instructed learning occurs in an impoverished environment therefore creation of a context rich in “authentic” communication should be the prerogative of language instruction [11]. Problem-solving classroom activities which encourage interaction and collaboration are the

closest to the naturalistic interaction and stimulate authentic communication.

Negotiation involves two or more parties who are in a conflict of interest situation but are prepared to 'talk' because they feel that they can exercise some influence [12]. The crucial feature of this case of social interaction is communication which shapes the process and the outcomes [13]. Bargaining situations range from negotiating how to spend "quality time" with the kids to management union disputes, to high profile diplomatic negotiations. Since almost everybody engages in this jointly constructed process of decision making there is a commonsense understanding of what negotiation entails [14].

Social interaction, decision making, joint problem solving and a commonsense understanding of the concept of negotiation renders negotiation activities an appropriate platform for developing communication skills. Negotiations also entail analysis and decision making; therefore they seem an ideal tool for integrating analytic, cognitive and linguistic competencies.

## 5. Experiences with Inspire

Recently, three groups of ESL students, two in Canada and one in the U.S., used Inspire. Kersten used it in an advanced EAP and an EAP for engineering students and Haley used it in a City College academic writing course. All students were required to keep journals recording their negotiation communication as well as write a report (the Canadian groups) or an essay (the U.S. group), in which they analyzed the activity as a whole. In addition to this feedback, a questionnaire was also distributed. The questionnaire comprised eight questions. Twenty-two participants completed questionnaires.

### 5.1. Teachers' experience

Integrating Inspire into an ESL courses requires different preparation than preparing a conventional class. The teacher has to request the Inspire team to set up a negotiation for their students a couple of weeks prior to the planned negotiation. The starting date and the deadline have to be agreed on, which means that some flexibility must be built into the course design. Ideally, the teachers participate in negotiations so that they may develop a better understanding of the system and see its potential for language instruction.

The registration for the negotiations can be done in two ways: (1) the teacher selects the negotiation name, collects students' user names and submits the list to Inspire, or (2) the teacher selects the negotiation name, gives it to the students and requests that they select their own user name and register for the negotiation by themselves. The latter approach proved to be confusing to a

significant number of students although it is preferred by the Inspire team as it allows for automatic registration. The problems ranged from: not knowing how to do it, missing deadlines for registration, forgetting the user name that they had chosen for themselves, misspelling the user name (very common), providing Inspire with one email address and checking another. With all its shortcomings, the second approach is a very valuable learning experience for relative newcomers to Web-based systems, even if it is more confusing and frustrating both for the student and the instructor.

Scheduling at least one class to introduce Inspire in a computer lab minimizes confusion and allows the teacher to address any queries that the students may have. When the pre-negotiation phase is completed and the first offer and message sent, the students can continue on their own.

Over the three-week period of the negotiation, the class instruction evolves around the topic of negotiation, problem solving and decision-making. Through readings, the students gain knowledge of the principles involved in negotiations, types of negotiations and negotiators; they share details about transactions through discussions, engage in face-to-face negotiations (for comparison) and also do language specific exercises such as collaborative dictation, sentence combining, punctuation, etc.

To help students remain focused on the negotiation and to help them develop analytical skills, we devised a negotiation journal. Each time they accessed Inspire to check their negotiation status, send offers or messages they were requested to write a journal entry. On several occasions the students were asked to share their journals in small groups, analyze and discuss their respective counterparts' behavior and strategies. This created a platform for a concurrent development of cognitive skills as well as listening and speaking competencies. The negotiation journal served also the purpose of developing writing skills. All the classroom activities organized by the instructor prepared the students for the final assignment, an essay or a report.

The final assignments included the following prompts: Evaluate your negotiation and your negotiation partner using the post-negotiation questionnaire. Evaluate Inspire's negotiation support features. Would you recommend Inspire for English as a Second language courses? Why?

### 5.2. Positive students' experience

The majority of students perceived Inspire as an enhancement to their course curriculum (based on essays, reports and questionnaires). Of the 24 responses to the questionnaire; all concluded that using such a web-based system was useful for the purpose of developing language skills. They listed various things that they liked about the

system, ranging from the newness and realness of it, to the fact that they were really practicing negotiation skills.

One student wrote that he “liked the Inspire program because users have fun and enjoy virtual discussions and bargains on the web with an unknown opponent until reaching a business decision and a compromise. Throughout the negotiation, (he) could learn a lot of business vocabulary, business tactics called negotiation strategies necessary to make the sale and achieve a win-win deal.” Other students emphasized how they were motivated because they enjoyed the activity and were able to practice their English through email and from reading the case. In an essay, one student wrote that students could improve their thinking in English when they negotiate. “We think about effective tactics and language which can be attractive to our counterparts in order to convince them to accept our offers. Most importantly, we may improve our writing too. If we think clearly, we will write effectively”.

When asked if they could see such a system being used in their native countries, of the 22 responses, eight indicated no because of the sole fact that their native country did not have the computers or technology to enable their schools to adopt such a program. A student from China believed that it would be useful if students got better equipped with nicer computers, faster Internet access, and teachers had better understanding of the Internet.

### 5.3. Negative students' experience

When students wrote about what they didn't like about using Inspire, their responses fell into three categories: the set-up of Inspire, their opponent, and technical problems due to human or computer error.

In the first category, two respondents said they would have preferred to work with a partner. They didn't like being on their own in the negotiation process. Others did not like the time restraint established by Inspire. However, even in real life situations, negotiation procedures operate within a time frame. Perhaps though, their frustration was augmented by the fact that there is a time delay when dealing with Inspire-mediated communication and opponents from different countries.

Inspire-mediated communication does not take place in real time; some students waited 2 or 3 days to hear back from their opponent. Their counterparts annoyed them either because they were using delay as a negotiation tactic or they unintentionally did not respond to the offer within a respectful amount of time. Asynchronous communication can be frustrating in this regard, because writers may expect a response instantly. Nonetheless, whether the opponent's attitude was a reason for the delay

or it was simply a time factor; some students listed this as a complaint.

The third category comprised what students perceived as technical problems. Mostly, these errors were a result of human error, and not the Inspire system. For example, a student mistyped his username and couldn't access the negotiations. Or, a mailbox was full so messages from the system bounced back. If you add to these setbacks the time limit of 3 weeks to complete negotiations (however, with a possibility of deadline extension), students could easily be disappointed with the whole experience.

### 5.4. Discussion

The technical problems such as problems with a computer, Web literacy, “inactive” partners and system errors are minor. They are temporary setbacks. With the City College class in San Jose and with the Carleton University classes, several students had to familiarize themselves with using the Web and sending email. As well, the concept of checking their mail regularly was new to them. This however did not deter them from wanting to fully participate in the activity.

About 10% of ESL students did not find Inspire a useful tool for language development. Education systems and teaching methodologies are shaped by cultural norms and values [15]. The concepts of student-centered curriculum, student empowerment, and tolerance for ambiguity, power distance and equality reflect the system of values of Canada and the U.S. but not necessarily of other cultures. There are three issues that may cause some students' ‘pedagogical frustration’ and a negative response to the negotiation experience: empowerment, tolerance for ambiguity and equality. The three are embedded in cultural norms that inform pedagogy.

Student empowerment is a highly valued concept in low power countries such as US and Canada but not in the countries where most of our students come from. Inspire reduces teacher's visibility and gives students control over decisions and communication. It is designed in such a way that the teacher has no means of exercising any degree of control over the process and the outcome. Maybe the most disconcerting aspect of the negotiation is the fact that the negotiators are not even required to reach a consensus. This may lead to the feeling that there is little sense of direction in the class. Furthermore, having been culturally programmed to accept teacher's position of power students may “have a great deal of trouble knowing what to do with power once it is given to them” [3]. Finally, since some students expressed an opinion that it would be better if there were two negotiators on each side of the “negotiation table” the concept of collective decision making characteristic of collectivist societies

(as opposed to highly individualist societies such as US and Canada) may have had some role to play.

The other pedagogical as well as cultural and personal trait is tolerance for ambiguity. Things do not necessarily happen the way a student may have planned and not even at the time s/he was planning for. There is a time framework and the task; these are probably the only certain things in this exercise. Also, there is no teaching of grammar rules or error correction which may lead some students to believe that the teacher is not doing his/her job.

Finally, it has been argued that computer technology ensures more egalitarian participation (gender, nationalities, cultures, etc). We should be aware however, that inequalities exist and that they can reproduce themselves over computer networks [3]. Dominant personalities and language difficulties can lead to breaks in communication and cause disappointment.

There is also the instructor's perspective. Introduction of asynchronous Web-based learning applications changes the teaching model. The teacher does not have the same amount of control as s/he does in the conventional classroom teaching model. This may be viewed as a threat to the existing practice [10]. Furthermore, because of the complexity of the technology and the number of things that can go wrong (servers down, system failures, and all the problems with the students discussed in section 5.3) the instructor must be prepared to tolerate ambiguity and cope with unpredictable situations. Conviction that these kinds of problems are valid learning experiences that prepare the students for the real world helps to deal with temporary setbacks.

## 6. Inspire adoption and diffusion

### 6.1. Inspire adoption

When the Inspire system became operational in 1996, it was used in IS courses at Carleton University. Since then, students from over 60 universities located in over 40 countries have used it. Twelve universities in Austria, Australia, Canada, Ecuador, Germany, India, Taiwan and the U.S.A. have used it on a regular basis.

In 1996 the Inspire developers contacted over 200 IS and management instructors from Canada, Europe and the U.S.A. The result was that 8 instructors used the system in their courses for the next 2-3 years. Only one continues using it today. Most of the current users learned about the system on the Web, and a few at conferences. This led to new groups of students taking courses in law, negotiations, computer science, system engineering, hospitality management, and health management. Other student groups participated in training programs in medical informatics, law, insurance, and engineering.

Also in 1996 the system was used for the first time in courses of English as a Second Language for Academic Purposes, and its use was extended to courses for English writing and English for Engineering Students. In 1998, the system was adopted by Rainer Thormann in Sprachenzentrum, Chemnitz Technical University, Germany, who learned about it from the Web and who uses it on a regular basis in teaching English as a Foreign Language. In 2000, it was introduced in English instruction course for MBA students from China (offered by Carleton University) and most recently, in 2002 in a writing class at San Jose City College.

### 6.2. Diffusion of innovations theory

The diffusion of innovations theory describes the conditions under which innovations are most likely to be implemented [16]. It explains how the adoption of interactive communications differs from the adoption of previous teaching technologies, provides the characteristics of new ideas that are potentially adoptable, describes the roles of adopters at the different stages of the innovation diffusion, and proposes the channels of information exchange that facilitate diffusion.

The diffusion of the Web-based negotiation system Inspire can be considered using the two concepts of the theory of innovation. In the next section we discuss the communication channels and in the next section – adopters and their characteristics.

### 6.3. Information exchange channels

The theory of innovations, which is concerned with the ways in which an innovation, a new idea or technique becomes adopted and used by the members of a social system, distinguishes two channels of information exchange: mass media and interpersonal relations [17]. The Web, with its wide reach, is a very complex mass medium; finding information can be a daunting task. Even if an instructor has a fairly clear idea of what he or she is looking for, the number of links that is displayed on the screen can be overwhelming.

The interpersonal relations channel has a limited reach and has proven not to be very effective. It relies on the ability to convince one's colleagues to try and adapt a particular idea. Four teachers at Carleton have tried it; one has since changed her job and one teaches beginner level courses. In addition to the two channels there seems to be one that can be positioned in between the two -- information exchange through professional meetings. Conferences, symposia and workshops offer a forum for information exchange between people who share common professional interests and gather to learn about new ideas, techniques or technologies. The information exchange



channel is not as wide as the Web or any other mass media but the group of people that gather is well-identified.

The Inspire system and its application to ESL instruction was presented at meetings, including, in 1997, the Institut fuer Englische Sprache, Wirtschaft Universitaet Vienna, Austria. At that time only one instructor was interested in using Internet technology for teaching EFL. In 1998, it was presented to a small audience at the School of Linguistics and Applied Language Studies, Carleton University where it attracted positive comments but did not result in extended implementation. Presentations at the World Conference on Educational Media, Hypermedia and Telecommunications, Montreal, and particularly at CIBER 2002, Duke University, resulted in a much more enthusiastic response from faculty teaching business or English for business purposes courses. But it is too early to assess its impact.

#### 6.4. Adopters

For the diffusion of an educational tool like Inspire to occur, teachers and their students must adopt it into their teaching and learning. As noted already, language teachers are not necessarily risk-takers in the classroom for various reasons such as the nature of their student population and skepticism about using technology without knowing its merits. This caution is also linked to the fact that their professional identity is based on classroom presentation and student reaction to it [10]. Disinterested and disengaged students might adversely affect that identity. Thus, the potential adopters are those teachers who like taking risks and are prepared to deal with ambiguity that has become a part of integrating new and changing technology into classroom use. Inspire lends itself to the communicative approach, and as such it can attract only those language instructors who are convinced of the pedagogical value of the approach. Also, the experiences of conference presentations indicate that teachers of English for business purposes, particularly those working overseas, might be the most likely early adopters. Another potential group of early adopters are teachers new to the profession. Classes on computer applications in teacher education programs could provide a forum for teachers to discuss the merits of adopting technological innovations; classes that act as a lab for student teachers provide an environment for trial and error. These teachers, who have used Inspire successfully, will then promote it through the channels of meetings or word of mouth.

The second group of adopters is students. They represent a group of future leaders in different areas, including education. ESL students in particular may augment diffusion on a more global scale. Many students who have used Inspire while studying in Canada will return to their

native countries. Students from China who completed their MBA may end up teaching at a university in China and could possibly decide to use Inspire to practice negotiating. Other international students who become language teachers can use Inspire as a source for authentic communication, something that is often a scarce resource for EFL students.

We need to note, however, that the responses from students from developing countries indicate that the diffusion of Web-based systems in these countries will be much slower. Many of the educational institutions they come from lack the funding and administrative support to implement the use of Inspire without complications; overcrowded computer labs and slow networks are two problems their schools encounter.

The majority of these language students started using the Internet only after arriving on this continent, yet they find the technology fascinating. "Since I arrived in Canada and own a computer I have become a computer addict. Almost everything here is Internet based." Those students who had had access to computers back at home seldom used the Internet for academic purposes: "we mostly played computer games." Some pointed out that in order for Inspire to be used in their countries, the teachers would have to be familiar and comfortable with the technology. This may suggest that there is a generation gap and the Web-based systems will be diffused when the Internet savvy generation of EFL teachers enters the mainstream academic programs.

#### 7. Conclusions

There is lack of discussion on the reasons underlying limited acceptance of new technologies in the classroom. Inoue [18] notes that authors often concentrate on the potential of the technology and ignore the costs and issues relating to acceptance of it. Yet, there exists a wide gap between potential applications and availability of technologies and the widespread adoption of technologies in educational institutions. This gap should be a major concern to educators and administrators.

Dimensions of the gap include questions about cost, how to measure benefits, how to integrate it into the curricula, whether there is technical support, administrative support, how it is done in other places, how it will impact the students and profession and what would happen if teachers did not adopt it. Furthermore, adoption of technology may be hindered by the lack of a reward structure; there is little institutional recognition of the time and effort invested by faculty into innovative classroom teaching.

Ever since the idea of organizing teaching around thematic units and using authentic materials was introduced to language curricula, ESL teachers have been

drawing on a variety of disciplines when looking for appropriate topics, readings and lectures. So in that sense, introducing the topic of negotiations is not new. What is new, however, is the ability of the Inspire system to give the students the chance to experience a negotiation in an authentic setting and learn through this experience.

We believe that teachers who have adopted a communicative approach to their teaching, would, without much hesitation, introduce a topic of negotiations to their conventional course delivery. Language activities would probably involve hands-on experience with negotiations involving a face-to-face interaction. Therefore the problem of integrating Inspire into language courses may be caused either by the fear of new technology or by the lack of knowledge about its existence. The first issue can be addressed by teacher training programs and by the administration of ESL programs. The second issue is the problem of the use of meetings as the main communication channel. Greater presence at conferences, particularly those dedicated to language training and teacher training, targeting English for Business Purposes stream, publications in journals dedicated to ESL and EFL and English for Business Purposes may be an effective strategy that should give the Inspire system greater exposure among language teachers and contribute to its adoption.

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