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SWISSLING: AN E-LEARNING LINGUISTICS NETWORK IN THE MAKING: MOTIVATIONS, RESULTS, AND OUTLOOK

SWISSLING is an e-learning project funded by the Swiss University Conference within the Swiss Virtual Campus framework. The project's goal is the development of a modular online courseware for an introduction to Linguistics.

In this paper we present first the background and motivations of the project, then we take in consideration some pedagogical and authoring issues and the practical solutions we adopted to tackle them.

Finally we show some results from the field tests and the pedagogical evaluation of the SWISSLING modules during the last two academic years.

Key Words: linguistics, e-learning, courseware, SWISSLING, Swiss Virtual Campus

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1. Introduction

SWISSLING is a Swiss Virtual Campus (SVC) e-learning project with the major objective of developing an introductory course in linguistics which involves linguistics departments in five Swiss universities and other academic partners focussing on the technological and pedagogical aspects of the project. In this paper we will present the SWISSLING project focussing on aspects that are relevant for research on e-learning.

By mandate, SVC projects are not *research* projects, their principal practical aim is to contribute to the *innovation* of university teaching in Switzerland by enriching the offer of e-learning in Swiss universities with high-quality courseware and by implementing it in the university curriculum)[1]. Three aspects of an e-learning offer are deemed particularly important by the SVC in order to determine its quality:

- improving the quality of student learning processes and strengthening interactive teaching;
- the strengthening of collaboration among the universities;
- the development of high-quality teaching materials and methods[2].

It is rather clear, however, that in order to satisfy these very broad and open-ended objectives[3], a considerable amount of research work becomes necessary: both in the form of developing or validating models of *quality* for on-line teaching materials and methods, and in the form of experimenting organizational solutions for the implementation in the curriculum and university collaborations in a way that allows a systematic assessment of the results.

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[1] Cf. the text of the first call for proposal of the SVC: "the program supports projects that develop high-quality courses and learning modules on the Internet involving preferably subjects that attract large numbers of students. These modules must be part of the curriculum offered by the universities involved." (SVC 1999).

[2] Cfr. the presentation of the Swiss Virtual Campus, on the SVC website (http://www.virtualcampus.ch).

[3] In fact, a number of fundamental questions about e-learning underlie these objectives. These questions are well summarized in the introduction of the first SVC call for proposal: "One of the key questions facing today's information society is how we can enable students and university staff to transform information into knowledge and skills in any efficient way. Answers to other important questions are also needed. What are the likely general effects of virtual courses on teaching and learning methods? How can interaction and collaboration be encouraged in virtual learning? How can people be motivated to learn on their own – is an optimum level of didactics, pedagogic and ergonomics sufficient? What is the cost-effectiveness ratio? What can and should the population expect from a Swiss Virtual Campus in the medium and long term? Are all subjects suitable for virtual learning?" (SVC 1999).

In this paper we are concerned with the contribution of SWISSLING to this research effort, as it emerges from mid-project perspective. In particular, we will briefly present the following aspects:

- a network based view of inter-university collaboration in an e-learning enterprise - based both on general and disciplinary considerations – which underlies the SWISSLING project organisation;
- innovative solutions both for the organisation and presentation of courseware content, and for the design of the pedagogical interaction, being developed and experimented in SWISSLING;
- the field tests carried out, their provisional results and the process of evaluation of the viability and validity of the courseware and pedagogical design of SWISSLING courseware.

We will focus mainly on the first, broader, issue of network organisation, since other publications have been specifically devoted to the other two aspects.

2. The SWISSLING network

2.1 Background and motivations

In order to appreciate the rationale behind the network organization of the SWISSLING project it is necessary to consider the project's motivations and how it intends to contribute to the development of the field of linguistics in the Swiss academic context.

Linguistics is a discipline that plays a basic role in many curricula in Swiss universities. First of all, in the humanities all learners of literature and languages take one or more introductory courses in linguistics. Secondly, linguistics can be studied as a main subject in most Swiss universities. Thirdly, elements of linguistics are part of other curricula such as psychology and communication sciences and can play a more or less prominent role in these curricula according to the scientific and pedagogic orientation of the faculty[4].

However, the rather pervasive presence of the discipline in university curricula is matched by a striking fragmentation and wide differentiation of the teaching of linguistics. For example, in the faculties of arts, for

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[4] One could also add that advanced students in computer science who specialise in artificial intelligence, natural language processing and language and speech technologies *do sometimes* take linguistics courses (and definitely *always should*).

each language taught there is often a different introductory course in linguistics organised by the corresponding language department or unit. Moreover, the *contents* of an introductory course in linguistics can vary widely in the different universities.

This situation legitimately reflects the necessity to cope with the different languages, as well as with the pedagogical goals of the various curricula: one can study linguistics as a theoretical enterprise or as a tool for scientifically describing previously unstudied languages (as in linguistics departments), as a background science providing better understanding of language learning and support for language teaching (as it is primarily the case in language and literature departments), as a science that elucidates certain aspects of the composite phenomenon of human communication (as in a faculty of communication sciences), or as a part of a unified discipline of cognitive science (which also includes various subfields of psychology).

The departments that participate in the development of the content of the SWISSLING courseware reflect in part this variety of concerns, as they include the Institute of Linguistics and Semiotics of the Faculty of Communication Sciences in Lugano, The Departments of Linguistics of the Universities of Geneva and Lausanne and the Departments of Romance Languages of the universities of Basle and Zurich.

The conception of the SWISSLING network stems from the insight that, while there is a variety of pedagogical goals for introductory linguistics education in different academic contexts, one can and should at the same time recognize a definite common core of notions that should appear in every introductory linguistics course, concerning the nature of human language, the methodology of linguistic analysis, the use of language in communication, and theoretical foundations of linguistics as a science. In such a situation the teaching of Linguistics would greatly benefit from bringing together the rich but rather dispersed resources of the field.

So, the SWISSLING consortium set out to build a *flexible* didactic tool, whose structure can be adapted to various kinds of learners, at various levels of specificity, and can integrate and improve rather than replace the - mostly language specific - courses taught in the various departments. The SWISSLING project involves the production of 12 course modules, covering all the main subfields of the discipline (see Figure 1 below) rather than producing one standardized introductory linguistics courseware.

The modules can be exploited autonomously and combined to form different types of introductory linguistic courses, which emphasize different aspect of the discipline. These modules are designed to be multilingual both in the presentation and in the subject matter covered, in order to ensure adaptability to the different language curricula and the different linguistic regions of Switzerland. The collection of course modules is complemented by a pool of shared resources (which, include, in particular, a common glossary of linguistics) and by a common portal, whose aim is to foster a community of linguists from the different linguistic regions of Switzerland, including researchers, teachers and learners.

2.2 A network of specialists sharing teaching resources

There is, however, another – perhaps more general – order of considerations, that motivates the choice for a networked structure for sharing teaching resources rather than the creation of one standardized product.

A university professor is generally the target of opposed pressures that derive from his/her double role of teacher and researcher: as a teacher she/he has to be a generalist, being able to span the entire field just with enough detail to provide a solid and up-to-date introduction to the discipline, while as a researcher she/he is supposed to focus on a rather small subfield and to provide original contributions advancing the forefront of research. This well known dilemma has consequences on the quality of teaching and on the rate of transfer from research to teaching, which usually is uneven in the various subfields. The networked structure of SWISSLING was conceived also to cope with these opposite pressures and to assure the maximum of transfer from research to teaching. Each of the 12 courseware modules is being produced by a team of specialists in the relevant subfield, so that networking and shared teaching resources are a mean of taking advantage in teaching of the specialist knowledge of researchers.

However surprising it might seem from the outside, linguistics from the insiders' viewpoint is a highly segmented field, where the communication at the forefront of research takes place mainly in the restricted communities of the specialists of the various subfields (phonology, morphology, syntax, semantics, pragmatics, historical linguistics, sociolinguistics, etc.).

At the same time, linguistics is characterized by a certain variety of schools or theoretical approaches, which differ both in the scientific questions they address and in the theoretical models they propose, which are often largely complementary but not always compatible.

Given this disciplinary background, the SWISSLING consortium esteemed that any 'monolithic' approach aimed at creating one standard *vulgate* introductory courseware was doomed to failure both at the scientific level (not offering a sound view of what is really going on in the field) and at the institutional level (because it won't cater for the needs of the real users community and would have few chances of being adopted). The option taken has thus been to make explicit the different theoretical options taken in the modules and recover unity through the inclusion of *scientific dialogue*, rather than by offering an artificially standardized version of the discipline.

What is interesting is that SWISSLING has singled out specific tools for implementing this element of *scientific dialogue* within the courseware, which include a rich system of annotated horizontal links between the modules and the construction of a *shared glossary*, which will be discussed below.

2.3 Organization of the SWISSLING network

The SWISSLING consortium is organized into a network of linguistics, IT, e-learning and pedagogical specialists[5] who are located mainly in the five university partners of the project. Each partner team is author of one or more of the twelve modules of the courseware (Figure 1).

While the SWISSLING modules can be used in principle to completely substitute an existing traditional course in the curricula of the partner universities, the substitution of face to face courses with distance education is not a current priority of the SWISSLING project.

[5] Apart from the five linguistics departments mentioned above, the SWISSLING consortium also comprises one partner with a broad experience in the field of new media and their use in e-learning (Institut Tecnologies de formation et apprentissage, Université de Genève) and one team in charge of the pedagogical evaluation of the course (with members from Faculté de Pédagogie et de Sciences de l'Education, University of Geneva and from the Istituto Comunicazione e Formazione of the Faculty of Communication Sciences, Lugano). Finally, the Department of Informatics and Electronics of the Scuola Universitaria Professionale della Svizzera italiana takes care of the IT support for the project, including hosting and housing services.
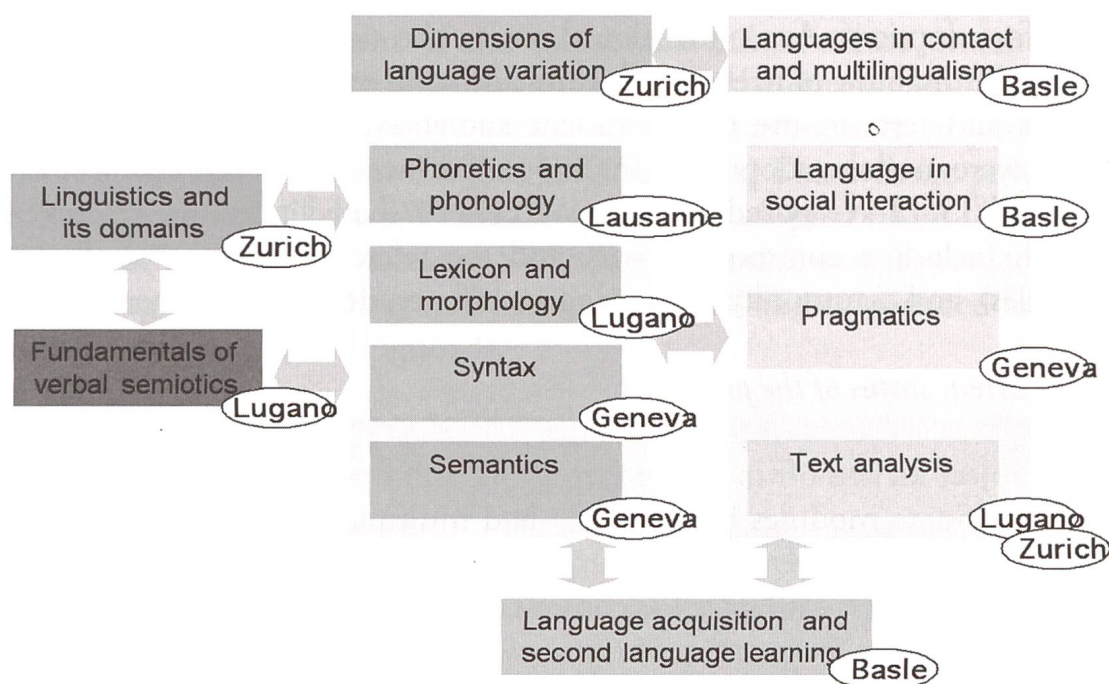
Figure 1 – The 12 modules of SWISSLING and their authors

Rather, as we mentioned above, the chief aim is to integrate the existing offer, enhancing its quality and variety, drawing from a pool of shared resources, and taking advantage of the collaboration of experts in different subfields. For this reason, the SWISSLING courseware and the organisation of the SWISSLING network are conceived mainly in view of a "hybrid" pedagogical strategy, mixing distance and face-to-face elements, where the on-line elements are not meant to *surrogate* face-to-face interaction, but to *integrate* it and enhance its quality.

Typically, a partner university adopts one or more (usually more) modules from the shared pool and integrates them as part of an existing course in the curriculum. The course modules are designed in a way that allows the adopting partner to set a certain number of variables in order to adapt the module to the specific learning needs of the course. These variables concern the course calendar, the use of communication tools, the number and type of exercises, the language or languages in which the texts will appear, but do not touch the core contents of the course.

Each module of SWISSLING is released by its author as a *reference version* which is available in all the three languages (German, French and Italian) of the Consortium. The university who wants to adopt that module will make a 'localized' *working version* of it and will customize it to suit their needs, setting the customizable parameters according to common guide-

lines for adoption[6]. As we mentioned above, the customisation process involves the disabling of irrelevant features and tools and the adaptation of activities and tests to the target student audience. The localized suites of courseware modules adopted by the various partners, share, however, a common SWISSLING portal that gives access to shared reference resources (which include a common glossary and the reference versions of all the modules) and community supporting tools for students and teachers.

2.4 Current status of the project

The project kicked off in December 2000, and now it's entering in its final year. Some modules have already had multiple releases and repeated field tests (such as *Verbal Semiotics* and *Lexicon & Morphology*) and are undergoing a revision phase for content and technical refinement. Other modules, namely *Pragmatics, Multilingualism, Language Variation* (Figure 2) and *Phonetics* have been already completed in their first release and have been (or are being) tested in university courses. The remaining modules are in the development phase and will be completed during 2003.
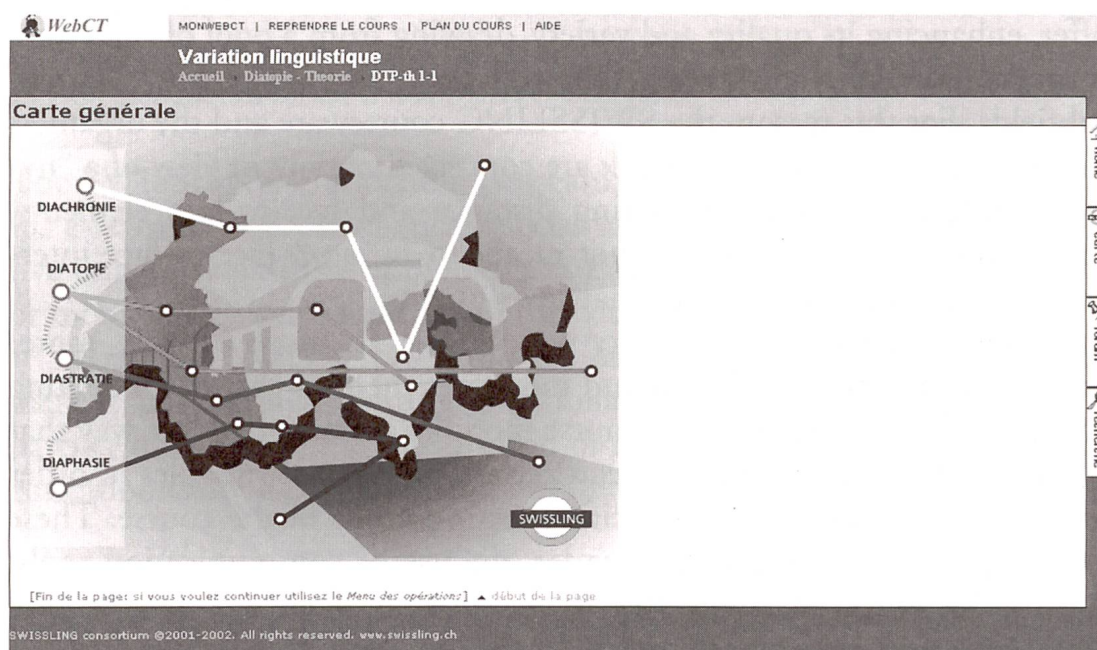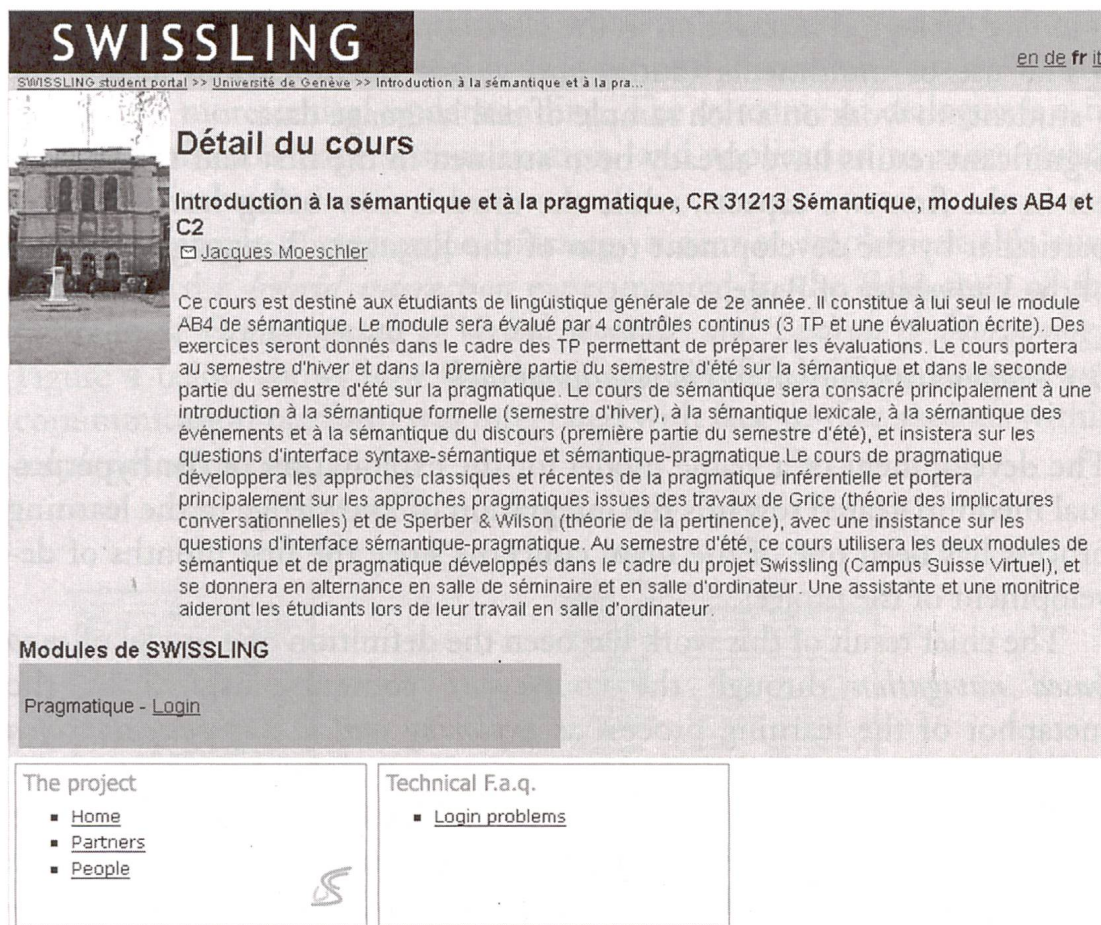

Figure 2 – Screen from the module "Dimensions of Language Variation"

[6] In the development of the courseware we adopt a content management platform for learning, namely WebCT. Each SWISSLING module is realized as a WebCT *course* object. For more information about the WebCT learning platform, see the product's website: www.webct.com.

Besides the development of the courseware infrastructure, much effort has been invested in setting up an organizational environment to support the activity related to the SWISSLING exploitation, and, in particular, in producing a portal for SWISSLING students. This website provides a central access to all the SWISSLING modules adopted by an institution in its curriculum. The access to SWISSLING courseware is provided by a homepage, which is integrated within the portal and customized for each university and course (Figure 3).

Figure 3 – Detail of the SWISSLING Portal for students

Finally, in order to guarantee the design consistency of the different modules, courseware templates for content authors have been developed and localized in the different languages of the consortium. On the one hand, the templates allow to enhance the layout and graphical consistency among modules, on the other, they are easy-to-use design solutions for content authors.

3. Issues of content structuring and pedagogical design

Apart from offering state of the art contents on the various subfields of linguistics, the Swissling consortium strives to enhance the quality of the educational offer working in particular on three different factors:

- The exploitation of the potentiality of hypertext, and more generally of hypermedia, to support a more systematic structuring of knowledge in the learning process.
- The seamless integration of on-line activities and discussion with face to face dialogical interaction in the classroom.
- The use of multimedia (audio and video) documents to enable the students to work on a rich sample of real language data.

Significant results have already been attained in the first half of the project in the first two aspects, while the third is now being worked on, in particular by the development team of the Romance Languages Seminar of the University of Basle.

3.1 Maps as conceptual and navigational tools

The development of a viable model for the exploitation of the hypertextual medium geared towards the integration of knowledge in the learning process has been one of the main concerns since the first months of development of the project.

The chief result of this work has been the definition of a model of *map based navigation* through the courseware contents inspired by the metaphor of the learning process as *exploring and taking possession of a new land.*

This approach to content structuring and navigation goes beyond the simplistic idea of hypertext as a totally unconstrained navigation space (which proved didactically ineffective) and supports the interest and curiosity of the learner through a series of metaphorical map-like orientation tools that, at the same time, help students to contextualize what they have learnt and provide a support for structuring knowledge.

This approach to map based navigation has been originally developed and tested in Lugano on the module *Fundamentals of Verbal Semiotics*, and variants of it are currently being experimented in the modules of *Pragmatics* (Geneva), *Language Variation* (Zurich) and *Lexicon & Morfology* (Lugano).

The design principles that inform this type of interface design, and

the details of the production process are described in detail in Armani *et al.* (2002) and in Rocci & Armani (2002).

3.2 Designing pedagogical interactions in a hybrid setting

From the outset SWISSLING adopted an approach centred on the complementarity of the personal activity of each student with dialogical interaction and collaboration both online and off-line. In this view, dialogue is seen as a mean of clarifying and negotiating critical concepts in the classroom and online and personal work on elementary analytical tasks are seen as a first base on which dialogue and discussion start to build a richer and more critical understanding. The outcome of dialogue is a final stage of knowledge systematization, and application to more elaborate analytical tasks.

One example of pedagogical strategy meant to implement this conception is the *hybrid interaction* experimented in the field tests of the modules of *Fundamentals of Verbal Semiotics* and *Lexicon & Morphology*. Figure 4 below shows how the use of the SWISSLING courseware and communication platform was integrated with face-to-face sessions within a *hybrid* interaction:
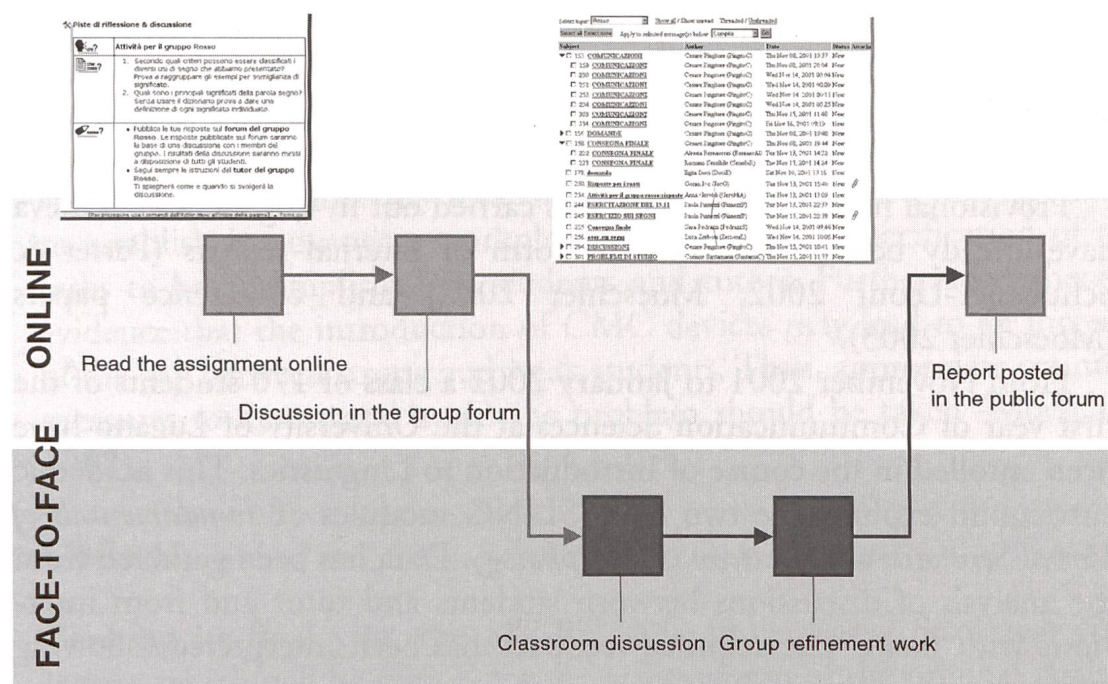

Figure 4 – Example of hybrid interaction

The students are organized in groups. Each group read their assignment, consisting of a very open discussion question, on the online SWISSLING courseware. Then, they post their answers on the online forum of the group, where a first discussion ensues, with the participation of the group members and of a tutor who supports the inquiry task. Afterwards, a discussion is held in the classroom with the participation of the teacher, the group and the other students, and a shared answer is agreed upon. After a meeting of the group with their tutor for the refinement of the answer, the final document is posted on the public forum of the courseware (accessible to all the students).

4. Field tests and pedagogical evaluation

After describing the network organisation of SWISSLING and having briefly evoked its design efforts both in the area of courseware development and in the area of pedagogical activity design, it is worth mentioning the systematic internal evaluation procedure that has been set up in parallel with the field tests of the SWISSLING modules during the last two academic years. During the academic year 2001-2002, a first phase of pedagogical evaluation tasks has been accomplished by monitoring the students' use of the SWISSLING modules already released.

Over 250 students, distributed among three partner Universities (Lugano, Geneva and Basle) participated in the first phase of field test. During this academic year (2002-2003) we are performing a second testing phase involving more students and partner universities (Zurich and Lausanne).

Provisional results of the field tests carried out in Lugano and Geneva have already been released in the form of internal reports (Perret & Schubauer-Leoni 2002, Moeschler 2002) and conference papers (Moeschler 2003).

From November 2001 to January 2002 a class of 170 students of the first year of Communication Sciences at the University of Lugano have been enrolled in the course of Introduction to Linguistics. This academic curriculum exploits the two SWISSLING modules of *Fundamentals of Verbal Semiotics* and *Lexicon & Morphology*. Data has been gathered from the analysis of discussions between students and tutor and from interviews with them. The acquired feedback has been interpreted following two main questions of investigation:

1. A question of viability. In which pedagogical, organisational, and tech-

nological conditions the innovative teaching and studying activities with SWISSLING are « viable »?

2. A question of validity. What the students are doing and learning with SWISSLING is that which we are expecting?

From the analysis of the results (Perret & Schubauer Leoni 2002) one can draw the conclusion that the majority of the students consider the course material useful. It's for them an important aid to study the matter in a more systematic and complete way that they can do it traditionally with their own notes.

Moreover we must say that the course material is not seen as a substitute of the classical lessons. Despite the fact that functional complementarities between face to face lessons and the independent work are still to be refined and balanced, the first experiences show us that such a reorganisation of a traditional course is possible.

Finally, the analysis reports that the didactical value of Computer Mediated Communication (CMC) is variously appreciated by the students: some of them are enthusiastic; but an important part of the students are ambivalent and sometimes negative.

During the summer semester 2002, the module of *Pragmatics* has been tested with a class of 28 students enrolled to the second year of Linguistics at the University of Geneva. The online module has been integrated in the curriculum as part of the *Introduction to Semantics and Pragmatics* course. The students were divided in groups, which worked either completely online or partially in face-to-face meetings under different conditions of time management From the results (cf. Moeschler 2002) one can infer that, in the context of such a course, a web based approach should be complementary to a traditional one. Moreover, it's imperative to establish in advance a workplan, with a detailed specification of the tasks to be accomplished by students and tutors. Furthermore, there is evidence that the introduction of CMC devices may lead to an increase of the gap between strong and weak students. Thus, appropriate countermeasures to detect and avoid the problem should be taken (Moeschler 2002).

Outlook

Entering its final year, the SWISSLING project now faces two challenges, which will be critical for the achievement of the original goals of the network.

The first, and perhaps the most important, challenge concerns the very heart of the vision of SWISSLING. In order to give rise to a permanent online community of Swiss linguists collaborating and sharing up to date teaching resources, it is necessary to provide an adequate platform to support the community and to provide tools that favour a tight and continuous collaboration between the partners.

One innovative tool that is being developed in order to support the online collaborative work of the partners is the Glossary Tool. The SWISSLING Glossary Tool is conceived, designed and developed as a platform for online scientific collaboration and discussion. It will allow the partners to collaboratively construct a rich multilingual linguistics glossary and to export parts of this resource as glossary files to be used in the courseware modules. The creation of a rich content-oriented learning resource is, in fact, taken as a chance for improving the scientific dialogue among the partners.

Another important tool for community building will be the SWISSLING Portal. The present implementation of the SWISSLING Portal contains core features for the students who need to access the SWISSLING courseware. In the next months we plan to expand the services of the Portal to extend the audience to the community of linguistics instructors and researchers within and outside the consortium. In parallel, the services for the students will be further developed to include the access to additional content and study tools such as the multilingual linguistics glossary.

The second challenge SWISSLING is facing in its final year concerns the localization of the courseware modules in the three main languages of Switzerland (German, French and Italian), as well as in English. The localization will be critical for the adoption of the SWISSLING courseware by international users as well as for the enlargement of the SWISSLING users' community in Switzerland.

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