SOCRATES' Mailbox Project
A Swiss contribution

Olivier de Marcellus, Dagmar Hexel and Marc Bernoulli
with the collaboration of Claudeline Magni and Pierre Dunand Filliol

CRPP, Centre de Recherches Psychopédagogiques, Geneva
CIP, Centre informatique pédagogique

http://tecfa.unige.ch/socrates-mailbox

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Observations on the practice of telematics in Geneva

Introduction

What pedagogical options are being explored by the "pioneers" of ICT in classrooms? How does actual practice compare with announced intentions? Can children learn in really different ways using ICT? In ways that are occasions for significant "implicit" social learning (of autonomy, collaboration and mutual aid)? In what conditions can ICT make for more efficient learning, particularly of languages? Is learning the technology itself a problem?
In order to comply with the constraints of length for this annex, we refer the reader to the text of this report which spells out the general perspectives and objectives of our research, developed in common with the other European partners. For the same reason we have chosen to present only three of the five Swiss case studies.
The reader can also refer to an upcoming publication of the Centre de Recherches Psychopédagogiques for a more complete presentation (in French) of the Swiss study. This includes a description of the historical and institutional context which has conditioned the development of ICT in French-speaking Switzerland, an extensive version of all the case studies, and a discussion of other findings from our observations, in particular the interesting analogy to be drawn between students' e-mail exchanges and the rules governing gift exchange in traditional societies (for a short description in English see the Socrates-Mailbox Web page). This analogy brings home the fact that apparently banal exchanges of correspondence tap into fundamental socialisation processes.

Description of sites

Six Genevan classes participated in the Socrates-Mailbox project : two at the secondary II, three at the secondary I and one at the primary school level. All experiences involved language learning: maternal language at the primary school, foreign languages at the secondary level. Exchanges of correspondence were the central activity, accompanied in some cases by creation of web pages, or other writing tasks.

Teachers' objectives

The primary objective, common to all teachers interested in telematics, was to favour language learning by practice in a situation of real communication. Other objectives evoked by most were: intercultural exchange, learning the technology, social learning and the mobilisation of students with problems.

Observation team and methodology

Observation on all sites was conducted by the Centre de Recherches Psychopédagogiques (CRPP), a research unit attached to the Direction Générale of the Cycle d'Orientation (CO), secondary I level. Four persons (Olivier de Marcellus, Dagmar Hexel and Marc Bernoulli, with the collaboration of Claudline Magni, a teacher attached to the CRPP in charge of ICT at the CO) carried out the study. A steering committee, including Fiorella Gabriel, director of the CRPP, Raymond Morel, director of the

Centre Informatique Pédagogique (CIP), representatives of the Service Informatique de l'Enseignement Primaire (SIEP) and of TECFA (Technologies de Formation et Apprentissage, Université de Genève), plus the researchers themselves, met regularly to discuss developments. Web pages presenting the project and the observation sites were created by Pierre Dunand Filliol of TECFA.

In a first phase, the researchers obtained written descriptions of the different projects from the teachers, which were then completed by interviews centred on objectives. A second interview, of one to three hours in length, was conducted with the six teachers at the end of the observation period.

Six to eighteen hours of activity were observed in each class. Researchers were present two at a time, so as to observe at once groups or individuals at work (problems linked to the technology, progress in the production of texts, correction processes, source consultation, interactions) and the class as a whole (management, general interventions and explanations of the teacher, sources and means provided, general technical problems, general class dynamics).

Finally, interviews of between 25 and 50 minutes (half a class at a time or in small groups) were conducted with the students after the period of observation and copies were obtained of a good part of the students' written production in five of the classes.

12th grade, secondary II
artistic section;
subject matter: English language learning

Setting

Teachers' experience

Today, among teachers who teach languages in the Collège Claparède, only two are using telematics:
- an English language teacher, an expert in technology - she calls herself the "godmother of CAL" (Computer-supported learning) and
- a German language teacher, who is having his first experiment with ICT in the classroom, largely on a self-taught basis.

The relatively low measure of interest for ICT on the part of other teachers can be explained by fear factors: fear of technology (esp. computers); fear of having to cope with less controllable class dynamics : typical ICT-centred teaching is characterised by a more relaxed, less controlled atmosphere than traditional teacher-centred classes: "some colleagues mind when there are laughs and noise in the class" (a), fear of loosing time as regards the programme and also fear to "be engulfed" by ICT. The English language teachers says that ICT give a "bad conscience" to these teachers who still use a typing machine in the teachers' room. All this explains why the interest shown by most teachers remains a platonic affair, but things are beginning to evolve. And attitudes may even change faster as the example set by the "SchoolNet" is better understood.

The English language teacher we observed (1) took up IT in 1988. She began by following a four-year personal development course of ICT for prospective computer teachers at the Department of Public Education. After two years, she decided to interrupt her training (that was then beginning to take a pretty heavy technical and mathematical twist) because she felt that she had acquired enough to be able to use her knowledge in her own classes, mostly CAL applications. After this, she took up telematics in the context the AT&T Learning Circles Project, in 1992. Today, she works as a trainer at the CIP (2) as well as in her school in addition to her normal teaching hours in class.

Pupils' background

Both above-mentioned teachers practice e-mail supported activities with two classes of the so-called artistic section. One is a class of English language learning with 18 years old students (12th grade), the other is a class of German language learning with 16 years old students (10th grade). These pupils have already been exposed to computers during their primary school years and have followed (on a compulsory basis) a computer course during their first year of lower secondary classes. For reasons pertaining to problems of schedule overload, "artistic" classes have no access to computer labs during their upper secondary years. Half of the students we interviewed (2) have a computer at home but only two of them would use it, occasionally, to do their home work. Students say that they are hindered because they type too slowly: "it takes three times more time than writing it by hand" (b). They also mention the fact that they neither have the opportunity nor the incentives to make it a habit to use the computer for school work, outside of their English language classes (c). This situation seems to bear a hidden benefit for these artistically oriented pupils who will pretty readily display a negative attitude towards using the computer for writing : "it's nicer, more spontaneous in hand writing", they would say (d)... This explains why this telematics project has demanded a pretty obstinate attitude form the teacher, one might even say that she had to embrace a coercive teaching style: "they know that with me it's like that..." (e). This, in turn, induces an attitude of magnanimous tolerance on the part of most of the pupils, who would say that they comply because they don't have to endure it more frequently than once a week (f). Some, however, managed to take the activity as positive a challenge. It is to be noted that, at this point, ICT are not felt as a panacea by these students. This kind of activity has certainly not evolved into a culture.

Institutional background and support

The management of the computer lab is mostly taken up by a technician: a science teacher but the English language teacher takes also her share for the telematics and CAL workshops: thanks to her experience and skills, she acts as a resource person for her colleagues. To be able to do so, she has been allowed a lighter teaching schedule, but she has to re-negotiate this settlement every year with the school management. When we interviewed the teachers, the prevailing impression was that the school directors are interested by ICT but that they do not seem to have a strong pedagogical perspective on ICT use, let alone telematics.

The development of the telematics project

Both teachers had heard of the Socrates' Mailbox Project through the CIP (Centre for pedagogical applications of ICT of the Department of Education of the Geneva Canton). As far as she was concerned, the English language teacher had received a pressing invitation from an Israeli secondary school (3). This was an opportunity for her to bring both projects together and to be an actor in the European project.

Both ICT projects in this school share a number common objectives. The first one would be the fact that they diverge from traditional school teaching projects by "pragmatising" them, i.e. by transforming them into genuine communication and cultural activities. De facto, an intercultural dimension is almost necessarily tied into a foreign language learning project. Still, this dimension is not always obvious and not as explicitly grounded on multiculturalism as is the case with the English language teacher we observed. Both projects lay a clear emphasis on learner autonomy, and perhaps thereby promote a stronger motivation for enlightenment, at least in the long run. Using ICT (i. e. word processing and telematics) represents for both teachers a task-oriented activity, and one of them is quite adamant in her scepticism about computer literacy courses not supported by a firm pedagogical project.

Design and arrangement of the project

During the entire academic year, the English language students have been sending e-mail to a class of the Dafna Kibbutz. The experiment had been made very visible in the school : the teacher having set up a big poster in the computer lab. The objective of this project was explicitly intercultural: "...to carry out an exchange - in English - with a group of students (15-16 years old) in Kibbutz Dafna (Har V'Gai school) in the north of Israel, where English is also a second language; this should allow the Genevan students to make personal discoveries about conditions existing in the communities in northern Israel, one of the hot-points of the planet at present. The Israeli students will be able to obtain first-hand information from students living “in one of the places where Peace Projects are discussed" (see http://tecfa.unige.ch/socrates-mailbox/dafna-geneva-engl.html). It has to be noted that, for both partners of the project, English is a foreign language. On the Geneva side, students were in their third year of English as a second foreign language. Their programme included three weekly hours of English with, generally, one devoted to telematics or CAL.

Both the contents (discussions on social and political issues) and the organisation (individual and collective exchanges of mail) of the project had to be agreed upon with the collaboration of the Israeli school. But it seems not to have been an object of negotiation with the students we observed. The less favourable technological setting of the Israeli class - who had no individual e-mail account for each student - forced the Geneva teacher to group together her class's mailings. This had the effect of slowing down the communication process, since the whole group had to wait until the weaker students had done their work. The incoming mail was gathered together and handed down in the form of little booklets. The teacher says that she underestimated the incentive value of sending and receiving mail individually, noting that the process had thereby lost some of its spontaneity (g).

The observations

Regularity of the correspondence

Five lessons, given to two parallel groups, were observed in the English language learning class. We interviewed both groups.

Telematics activities of the class were based on a regular - if sparse - schedule. This had an incidence both on the acquisition of technological skills and the kind of messages that were sent. Pupils would forget from one session to the other how to perform basic tasks such as opening, printing and saving files. Although the teacher had taken care to hand pupils a worksheet with all the necessary manipulation explained in written form, students displayed carelessness by loosing or forgetting these instruction from one lesson to the other. As the teacher says: "... our school is a pigsty" (h). A point of view shared by both teachers and pupils: that this careless attitude is to be expected from “artistically” oriented students. As a result, the teacher was spending quite a lot of time going form one terminal to the other, reminding students of the operations, with great patience and care. Very often (not to say most of the time), she would perform most technical chores herself.

The scarcity of sessions had also an incidence on the kind of communication and exchange taking place. First, pupils wrote fairly little - according to their teacher, e-mail exchanges would occur less frequently in this project than during the World Classroom or the AT&T Learning Circles projects in which she had taken part previously. Additionally, when the students couldn't manage to finish up their messages, messages would cross each other out of time. This would cause some confusion as to which message and which correspondent students had to reply to.

Technical issues

Technology was no problem in this class . This can be explained by the fact that the teacher is remarkably skilled in these matters. An added element was that the communication activity was principally built on writing skills. Students would use the word processor to compose their messages instead of e-mail software. This situation would allow bypassing the technological problems we happened to witness elsewhere

where students had to deal with a notably unreliable software, developed on a proprietary basis on the X400 protocol for the public education network.

Perceiving the objectives of the activity

By and large, the students we interviewed had a correct perception of the basic objectives of their telematics activities: communicate with a "real" partner, learn the language with both its natural and constraining aspects (the correspondents would not understand French so no "cheating" could take place), get acquainted with computers and word processors, the latter perceived as indispensable tools for their professional future. By contrast, the multicultural dimension of the project was not really grasped. Students would readily discuss the uniqueness of the kibbutz phenomenon - about which they knew actually very little, but the subject would come up as a conversation item. But the original objective of these exchanges - to confront and compare social and political situations - mostly escaped them. Even such a violent and tragic event as a military helicopter accident happening right in the Israeli school yard and killing a number of young soldiers did not really awaken their interest.

Motivation for telematics

Integrating e-mail activities in a syllabus is not always easy. In our case, the English language teacher assumed that the explicit learning objectives of the experiment - namely speed reading, proof reading and writing skills - were an integral part of the programme of that year.

Although they call the environment sterile and the contents of the mail superficial, students are nevertheless fascinated by ICT. The unusual perception of distance and time, as well as a natural impulse for exploration create a kind of expectancy, not to say excitation in the students. Not only the technological tool both also the setting encourage an other kind of learning attitude. When they set foot in the computer lab, students feel they may drop certain school obligations: they dare forget to take their stuff with them, they move around, speak up... This favors another attitude of the mind, a different kind of attention. Students perceive ICT activities as work and play combined: it does not count as regular school time, rather as free time. The teacher would point it out: messages' contents are at a precarious frontier between the academic and the private sphere and this situation contributes to a different perception of computer supported activities.

Managing activities and lessons

During a first phase, before we had the opportunity to observe them, students had the opportunity to write their personal CV and send them to Israel. It was on that basis that they had been chosen as a partners by the Israeli students. The Swiss pupils felt some resentment with regard to this unilateral choice: "they've been imposed on us !" (i) .

The organisation of lessons was not always clear to the pupils. Each session would bring a new task, without them having necessarily had time to finish up the former one.

During the first session we observed, students were typing in a text, prepared at home, in which they were describing a significant aspect of their school (schedules, school subjects, exams, buildings, the cafeteria, etc.). These message were meant for the Israeli class as a whole and not all students were able to finish this assignment. During the second session, students had four different messages to read (nicely bound into a booklet by the teacher): a personal message (if they had received one); three additional ones chosen by the teacher - pertaining to geographical and social conditions of the kibbutz, in addition to the report of an accident involving two military helicopters that had just happened within the community. The teacher had prepared three topics to help students find ideas for their mail : it was expected from them that they'd respond to the tragic accident.

The accident had happened during the Swiss' school winter break. Nobody had heard anything about it. The teacher told them the story during the lesson, in English. Students were pretty ill at ease at being expected to react and express empathy with an (or many) unknown correspondent(s). As a result, few messages alluded to the accident. One of the mail messages expresses quite clearly both the embarrassment at the situation and the lack of interest the pupils felt for this dramatic news: "I just read your message and I'm really shocked what happens with the plain crash. I'm feel very sorry. I haven't heard anything about that terrible accident in the news, because I havn't usually time to see the news on the television" (quote from the actual English text mailed).

Students would typically take from 15 to 20 minutes to read their messages. This would leave little time for writing the answers. The teacher had to remind and specifically explain them quite a few times how to perform their assignment (compelling them to read carefully first, to take into account the prepared questions, etc.). Notably, pupils had quite a lot of trouble knowing to whom they had to answer, i.e. whether they should write to an individual partner or to the entire Israeli class.

This uncertainty about to whom the message was referring to was still felt during the third lesson we observed. Students would finish up their messages of the preceding lesson and, since they had in the meantime received a message describing the Israeli school, they would belatedly proceed to answer to the second mail. They would express to us their frustration with the rhythm taken by the exchange: "I never have time to finish my job. A new letter arrives at each lesson when I have barely written half of my former one... I go as fast as I can, I can't go any faster." (j). Some of them wished for longer sessions - two hours or even more - "and a couple of aspirin tablets..." (k). However, they also plead for their own laziness: these lessons are pretty relaxed, they are not really obliged to write anything since their productions are not academically evaluated. As regards the question of time availability, the teacher does not agree. One hour is sufficient for an e-mail activity, she says. If lab sessions are to last for a longer time, students ought to turn to some language practice with a CAL software.

The importance of sustained output

We were surprised to see how insignificant the messages could become. Although students say that they have a motivation and that they feel stimulated to use the machines, it is pretty obvious that the level of what they produce is well under what they usually yield in the "normal" classroom environment. Their motivation to go on with the exchange seems to stem from elsewhere. “The content seems minor, trivial and down to earth, but this is the sort of language that students complain not being exposed to...” The length of messages was also a matter of surprise to us. Students could write messages markedly different in size. An intuitive observation, later confirmed by the hard copies we got of mail interactions: each message - not necessarily the result of a single lesson - is typically made up of five to twenty lines. We also observed a distinct lack of equilibrium between received and sent messages, the latter ones being less important than the first. When we asked students about these discrepancies, they had a host of explanations to offer: lack of time, lack of motivation for computers, lack of typing skills or, symmetrically, the alleged advance in ICT skills of their correspondents. "Israelis are more skilled with computers than we are, they have a motivation, they know how to type", they would assert (o).

Messages' contents

The English language teacher gave us five series of productions from her students, taking care to tell us that these messages were, by far, not up to what could be expected from them: these messages were produced at a time of the year when pupils were under considerable pressure: some of the students were not even sure of being promoted at the end of the year.

As a contrast to younger pupils, who easily get caught into a "loop" of constantly introducing themselves, these teenagers value the content of their messages. The teacher told us that they had highly appreciated the stories they got from their Israeli partners who had written about their holidays at the Dead Sea. Nevertheless, the Swiss had been expecting a correspondence on hardly mentioned subjects such as politics (the Israel-Palestine conflict) and religious matters, although these items are highly sensitive intercultural issues. The explanation was that there was too big an age difference between the two classes: "... they are younger than us. They go on and on talking about their hobbies. You can't change that." (p). Meanwhile, they are pretty short in ideas to help the interaction become more interesting and barely ever try to bring the exchange to a deeper level. We would, in fact, distinguish, among the messages we observed, between initiatory contents, the most frequent ones, and reactive contents, responses to received information (i.e. Israeli students' trips, the kibbutz, the accident). Topics raised in the first category were hardly distinguishable from those the partners would have previously initiated: preferred activities, school life, exams and holidays were ubiquitous topics.

Language learning process

As far as language learning is concerned, one observes a definite discrepancy between what is hoped for and what really happens. Let us underline that pupils were supposed to read quickly (skimming and scanning techniques), to perform a detailed linguistic analysis of their messages (to spot out the incorrect expressions in their partners' messages) and to write by taking into account verbs' tenses, verb and subject concordance and word order. The teacher was laying a strong emphasis on the relationships between reception (i.e. the rejection of incorrect expressions) and production (i.e. "taking care to check [one's text]") activities. Unfortunately, we did not have the opportunity to observe a proof reading session (4) where students had to read and understand what they had received. Since they would have a lot to read, the process would take a lot of time. Students seemed to have grasped and understood the messages, but we could not make sure they had used the reading techniques they were supposed to.

Students build up their message slowly, but with great care. One may even say that some students are at the stage of "constructive doubt", the computer allowing the practice of alternative expressions that writing by hand would not bestow. For instance, on-screen work allows experiments with the order of words - one of the explicit language learning objectives of the project. Students would experiment either on their own initiative or prompted by the teacher. They generally expressed a preoccupation about textual accuracy, but do not really act upon this care. Using the dictionary is sporadic ("we care about ideas (sic), we do not want to spend our time browsing through a dictionary !" (q)) and even if they work with a word processor, the software they used had no English spell-checking module... We sometimes observed students check the spelling of words of received messages when they wish to reuse them, or when they would reuse expressions.

As regards technical skills, we noted that even the most basic manipulations (such as open, save messages and quit the application) of the computer were not yet acquired by the end of our observation. We should note however that the teacher told us that, later on, her pupils had made significant progress on this point.

Perception of the progress achieved

Students are pretty realistic about their progress : "to talk about progress is saying too much, we just apply what we have been taught to do" (l). Some feel they are able to write in a more fluid way. This is probably the case because they are better able to focus on contents or to select what they wish to express within limits they define themselves. Two pupils noticed that they had better marks in English (even if it is not sure that it was due to better writing skills) but, for the others, this writing exercise did not help them to get better results on exams. The teacher thought that, back in traditional interactions in the classroom, students were more motivated to expressing themselves in English spontaneously: but she doubts that the contact with ICT is the sole explanation for this evolution.

Teacher-pupil interactions

Working with computers is supposed to lead to a new dimension in teacher-pupil relationships. Teachers do observe that their role changes, from knowledge bearers for everyone, they become helpers for everyone. This perception is confirmed by learners as well. The teacher nevertheless remains the central figure in the classroom and the principal source of knowledge for what regards both language and technology. During all the time we observed the English language class, we could see that the teacher was intervening many times, be it spontaneously or on pupils' request. Most of the interventions were pertaining to one or another aspect of writing: the teacher suggests alternative wordings, corrects sentences, or an idea. This explains why pupils still consider her as a sort of "encyclopaedia". This pedagogical attitude may seem in contradiction with the objective of achieving learner autonomy, but it may well be the only possible way to insure long term efficiency with most of the students who are partly lazy and partly allergic to computer work.

Pupil-pupil interactions

A prevalent hypothesis claims that the computer will bring new relationships among pupils, i.e. nurture a collaborative learning activity. In the class we observed, students worked alone in front of the screen. We could bear evidence of only very few cases of mutual help. They also perceive the limits of collaboration - ".. it's perhaps great for someone who has difficulties in English, but what about those who are good at it ?" (m) - and they lay high a value on the privacy of their messages.

A sustained correspondence

With the exception of two of them, students would not keep copies of their mails since the beginning of the activity - we may add that this was not a prerequisite. Some did not even have a fixed correspondent. When we asked them why this was the case, they had no satisfactory explanation to offer. To quote one pupil: "We wrote, they wrote. We wrote once more and they answered to someone else. We had to take it again from the start with another partner." (n). It was also felt that the Israeli students were writing to the Swiss class as a whole, without there being a satisfactory reason for this way of doing.

Losing a correspondent may discourage an initially highly motivated student. We observed at least two instances of initially very enthusiastic students who were later pretty disheartened. In one case, after failing to receive an personal answer from her partner, a student was reluctant to get involved with a new correspondent and consequently reduced drastically the length of her messages. For the luckier ones, their attempts gave rise to a correspondence and they were not against trying to sustain a mail exchange after the experiment would be finished. In this respect, two pupils asked explicitly for a continuation in their last e-mail and gave over their postal address. It was very important for these students, as they neither had had the opportunity to meet each other beforehand nor to go on writing each other by hand: a procedure that would have enabled them to build up a more personalised relationship, by exchanging photos (scanned photos had been realised in the Swiss class) and by receiving a hand written letter. In fact, correspondents need time to get acquainted with one another before they can consider taking up a longer term and less superficial relationship.

Students' attitudes

The teachers did not notice any fundamental changes as far as learning styles were concerned. Generally, the same learning approaches were continued with the use of ICT. At this point, the enticement represented by the machine does not change students' attitudes. This does not preclude the fact that one or another student will display different demeanours because manipulating the keyboard, the mouse and the computer's machinery had been pleasing experience. Otherwise, e-mail seems to be particularly pleasing to shy pupils who dare "talk" to the computer.

8th grade, secondary I (Cycle d'orientation - CO) scientific section; subject matter: German language learning

Setting

The German language teacher practices ICT in her class since more than fifteen years. She was amongst the ground-braking teachers who took part in the EduTex (later EduNet) Group and she later was an active partner in the “Kalimera” telematics experiment. On the institutional level, she has been one of the pioneers of ICT in Genevan lower secondary schools. Even now, in her school, she is the only teacher to currently practice ICT on a regular basis. She has some institutional support from the director of the school who appreciates ICT and protects her from possible unwanted negative reactions of colleagues or from other schools. He also brings all the help he can to solve organisational deadlocks.

Furthermore, the German language teacher is practised in "active methods" and collaborative task-oriented pedagogy, in spite of the strong barriers secondary teaching schedules and subject-matter organisation oppose to such an approach. She manifests a highly adaptive attitude by insisting that the use of ICT in teaching is not an indispensable tool for her to reach the pedagogical objectives she has set for her pupils. Her method includes technology as a highly motivating tool for learners, a tools that broadens significantly the palette on which she can rely to teach language effectively.

The project

Drawing on her considerable experience in the domain, the teacher feels that e-mail projects pretty soon fall into a repetitive pattern, the partners of the mail exchange having no new material or ideas to bring to each other, if left to their own devices. This explains why she has set up a series of parallel activities, balancing and supporting each other. First, pupils had to write their CV (or “visiting card”) in order to find a correspondent. These CV were sent both directly to classes in Germany and to Internet sites bringing together people seeking to find an e-mail partner. Secondly, the pupils built up a class Web page on which - apart from the "visiting cards" - they described their classroom, their school and the city of Geneva. Finally, a poll on TV-watching habits brought more material to enliven both e-mail and Web-based exchanges.

Initially, because of a series of technical problems, the unfolding of personal e-mail exchanges had been significantly delayed. During the time we observed the activities around ICT in this class, most of the work was concentrated on the Web page (5) and mail interchange with different classes in Germany about the TV poll.

One of the strong points of the project was that it integrated elegantly ICT in the programme, esp. by means of the poll that was based on a specific chapter of the German manual used in class. The explicit language learning objectives of the experiment were about transforming texts and bringing pupils to the level of performing multiple corrections on textual productions by writing a personal CVs, a

Web page as well as by setting up questionnaires for the TV-watch poll. These tools, chosen to reach consistent pedagogical objectives, were pretty ideal.

Conditions of the experiment

The teacher managed to make computer access easier by asking to have her classroom just across the school's computer lab and by having her students for periods of two consecutive hours. This allowed for a flexible use of space where pupils could freely move form their classroom to the computer lab, as different activities unfolded.

It worth mentioning that almost every pupil has, since a number of years, a PC at home. This exceptional situation has not been duplicated in the other classes we observed. This may be due to the fact that we were in a class of the "scientific" section. But it seems that very few pupils would take advantage of this opportunity at home: they themselves say that home PCs are rather used for games and, on rare occasions, to write down and print out an assignment.

Observations

Learner autonomy

Learning activities were often performed by independent groups who had different tasks to achieve. This pedagogical method is not necessarily an easy one for the pupils to get used to. And the teacher had her own misgivings about trying this kind of approach with a class who had the reputation of being pretty distracted ("dissipée"). Consequently, the teacher would lay pretty heavy an emphasis on organisational issues to manage to have her pupils perform within open frame of this implicit didactic deal.

This situation was reinforced by the fact that the teacher would voluntarily drop her traditional teacher role to become an animator and an organiser of her pupils' work. She would typically spend about twenty minutes out of the ninety she had at her disposal to explain and organise activities. During our first visit, she used the overhead projector to discuss a list of procedures - a memory tickler ("pense-bête") - for an effective use of the spelling checker . This list had been formerly composed by a group of pupils, called "group initiators" ("tête de file") who were in charge of showing other students how to use the spell-checker on their CV or "visiting card". They would explain the software to a first couple of students who would in turn explain it to the next group, etc. Whilst discussing and explaining the help procedures' list to her pupils, the teacher took great care to show the significance of her student's responsibility and role in the accomplishment of the activity.

The teacher has a clear stand on discussing matters of discipline, class organisation and computer technical work. She invites her pupils to get involved and share responsibilities. To take an example as regards her objective to bring her learners to technical autonomy: "... if you want your work to go ahead, you have to become skilled enough to be able to use the computers in the lab without my help." (r). When a pupil asks her why one cannot print and spell check at the same time, she does not answer immediately. She first asks the class to find out an explanation. Although she gives her pupils pretty flexible and relaxed work conditions, the teacher is nevertheless very demanding as regards concentration on the task at hand and about the acceptable level of noise - she would detect too much noise even before we observers would perceive it ! She is quite straightforward about it and frankly admits to her pupils that, with a noisier class, she would loose track of her lesson. And if they do not comply, she will not hesitate and change gears completely by dropping the collective activity altogether and by imposing individual work. "I think I shall give you a bit of individual work to do, otherwise I'll be obliged to discipline you and I hate doing this..." (s). Generally, rather than relying on personal authority to discipline them, she would explain with great clarity what she expects from her pupils.

During the first session we observed, the teacher set up five groups with one strong pupil in German in each one. Their task was to sketch the contents of the classes' Web page, in German : two groups were responsible for the description of the class, another two for the school and a third one for presenting Geneva. At the same time, pupils would go into the computer lab to iron out their formerly word processed "visiting cards" with the help of the spell-checker.

Let us describe a typical lesson: as the teacher leaves to go and supervise the lab, the pupils remaining in the classroom quietly get to work, talk about what they plan to put down on paper and use the dictionaries to find missing words. A pupil walks around to take pictures with a digital camera. A couple of pupils rise to their feet to "wander around" for a moment and then go back to their work. We cannot help being pretty impressed by the peacefulness manifested by the pupils when their teacher is away. It is quite obvious that everyone felt involved and responsible for the outcome of the project. An additional sign of this feeling of commitment was the fact, that during the break between the two hours, half of the class would stay inside.

As soon as the teacher is back, a number of pupils has some questions to ask her: "Ma'am, Ma'am !" But she will not let herself be pushed around and asks a student to wait a little or another to go and fetch some reference material. She visibly takes care to maintain distance and quietness. She keeps the initiative to organise collective activities and keeps herself clear of being put into a reactive attitude by trying to answer all requests at once, she rather will go around each desk to distribute and comment on sheets printed out from German schools' Web sites (it was unfortunately impossible to go and surf on the Web from the school's lab PCs). When stopped by a question she would explain that "... [she didn't] want to be interrupted when [she] explain[ed] these Web pages for [them]..." (t).

Successive transformations

Thereby fulfilling one of the main goals of the project, writing CVs ("visiting cards"), putting up the Web page and the poll on TV watching all were occasions to work on German texts. The teacher feels that writing e-mail messages with no constraints is still too difficult an exercise for pupils who are only beginners. She solves the problem by proposing an enunciation or recommendation in German worded in such a way that the very same words could be reused by the pupils: "do thank [them] for the information about TV and assure [them] that they will be put at good use" (u). In this way, elements of the answer were conveniently available, students had only to understand them and adapt them, thereby breaking down the difficulty of the task into smaller bits, easier to master.

Thanks to this method, the pupils have been deftly accompanied to the final result via didactic scenarios that were secure for the learners, through a roundabout way. The task is broken into a number of steps, not necessarily obvious form the point of view of the final result to attain but used as language learning exercises and good occasions to turn to subjects which had to be treated in the programme such a grammar rules, cast of style, expressions, etc. A few examples:

- To write their "visiting cards", pupils had first to answer a questionnaire in German handed by the teacher asking them questions about personal features. They worked on this material to suppress the questions and transform isolated sentences into a discursive text. The correction of the resulting text was made in two steps. First the spelling checker was used and, afterwards, corrections were brought in on the basis of the teacher's remarks. She would have wished to perform one last revision by group work, but there wasn't enough time to do this.

- A similar pattern was applied to produce a questionnaire leading to a second text on TV watching habits. First, the pupils were invited to read a questionnaire supplied by the teacher. Then, they would discuss it in class and answer it. It is the modified version of this text that appeared on the Web site. Finally, it was transformed into a discursive text - a letter - sent to their correspondents by e-mail. This work represented a golden opportunity to illustrate different ways of using the indirect speech in German . Later on, students would read the answers received and analyse them - more than 150 of them. Every time the reply was incomplete, they would write back and send additional questions to get complementary information. Finally, the pupils would enter this material into a spreadsheet as data for statistical processing.

- Writing the class Web page first necessitated debating on a number of German schools' Web pages - an excellent opportunity to practice speed reading. After that, the pupils wrote a series of little descriptive texts in French and in German on their school, Geneva, etc. These texts were finally sent to their web master who included them into their official Web page.

All activities were well integrated into the programme of the year: analysing some of the answers returned by to the TV poll was the pretext of an evaluated examination. And, most of all, the teacher would take advantage of reading, writing or stylistic variations to practice language rehearsals with the class: exercises on pronoun concordance, on indirect speech, on irregular verbs, etc.

Introducing the Internet

When they got the CIP, pupils got a hands-on contact with an e-mail proprietary software called “Mailbox” (using x400 protocol) and a Web browser (Netscape). For most of them, the Web was by then a familiar notion, integrated in their view of the future. Thanks to their habits of autonomy and collaborative work, sustained by an evident positive motivation, pupils could assimilate most of both software commands within one morning. After having followed an explanation about these telematics tools on the overhead, pupils rushed to the machines into a medley of interactions and partnership that was both effective and a joy to behold. The task was to send to their web master the very last version of their "visiting card", by means of the “Mailbox” software. Half of the pupils were so excited that they forgot to achieve this task, but they were quick to learn the basics of the manipulation of e-mail by sending messages to their parents, professors or fellow pupils in the computer lab. This latter activity will soon become a favourite in the following weeks. Some pupils even preferred it to surfing on the Web. Although teacher had brought along a few German schools' e-mail addresses, she gave up trying to impose them since her students were too much engaged in investigating the intercultural riches of the Web such as the “Spice Girls”, the “Beatles” or even Pamela Anderson...

Students' attitude

Generally speaking, students were very assiduous during the activities related to ICT. A remarkable result if one takes into account the fact that this subject matter is considered as the least popular in the Geneva schools ! As soon as there were a number of parallel activities happening in the lab and when no assignment was on schedule, certain pupils would send one another messages from one computer to the other. We may also add that a good half of the students sustain their work with very little prompting from the teacher . This tells a long story about their motivation !

During the interviews, all pupils, with one exception, told us that they loved the activity and they would like to go on with it. A good number felt they had learned quite a bit of German language in the process.

They felt that they had less difficulty to express themselves. This kind of remark leads us to think that situated learning and productivity has a different kind of subjective or cognitive status than tasks performed in more traditional settings. Other pupils hold that these activities are an effective form of rehearsal and an occasion to foster the recognition of what they are capable of doing. Others still think that they have had a good time and that they haven't learnt much German.

As regards the perception of various activities by students, personal e-mail activities (they were at last being set up as we were interviewing them), are by far the most valued task. One of the rare critical remarks we got concerned the organisation of the correspondence implying too many different partners: "We did not know with whom we communicated. There were too many people at the same time" (v). They would have wished to correspond with one single class and a single partner from the very onset of the activity: "...now each of us finally has a mail correspondent [with a German language student in England]." (w) Here, like in other classes, pupils attribute a surprising value to these exchanges, a point often underestimated by adults. Writing the "visiting cards" and the Web page were judged as positive activities. As a conclusion, only the poll on TV watching failed to catch their fancy, they did not perceive it as really appropriate.

5th and 6th grade primary school; subject matter: French (native language)

Setting

This class is an exceptional one in many respects. First, it is involved in an ambitious process of renovation. A programme that aims at suppressing marks to evaluate pupils, at reorganising teaching around task-oriented activities and at promoting pedagogical projects that leave out the usual limits of the classroom. Additionally, the class we observed is under the responsibility of two teachers, working on a half time basis. One of them has been using telematics at school since 1991 in the context of the videotext based Edutex network (later renamed EduNet as the networked was ported to the Internet). And, finally, the management of class activities is such that pupils' autonomy allows the teacher to be really available in due time and where he is really needed.

Project

Thanks to this situation, the teacher was able to bring into telematics activities he organised a particularly fruitful level of learner autonomy and collaboration. Moreover, he built on the convergence of favourable conditions. He would practice telematics activities on a daily basis, over a period of two years, had computers settled in his own classroom and taught in the general context of a co-operative/collaborative learning scheme in his school. Likewise, he relied on a network of reliable corespondents and significant e-mail related activities (i.e. a class journal, exchange of mathematical riddles). This conjunction of mutually reinforcing pedagogical assets would sustain the correspondence through telematics in an effective way.

Fifth-grade pupils had been doing e-mail since the beginning of the academic year, on the basis of one to two sessions a week. Sixth-graders had been exposed to e-mail for one year an a half. At the beginning of the year, pupils had written a CV ("visiting card") and texts for the class' Web page. They also had been offered the opportunity to choose their correspondents on the network through keywords associated with the "visiting cards" of other students on the network. This approach assured the building up of common interests among these primary school pupils who were able to uphold a meaningful correspondence during the whole school year. These elements made for a exceptional situation we did not encounter in secondary level classes, even over a much shorter period.

Our primary school pupils would also sometimes surf on the Web for pleasure or for activities related to a particular individual project. The teacher is nevertheless slightly sceptical about this kind of activity. Pupils tend to be bewildered in this complex mass of information and the teacher has not the necessary time to help them during this activity. It has also to be added that their Internet access (on the school's commuted lines) is especially slow.

Observations

Pupils practice their e-mail activities alone or in couples. Most of the time, they are three in front of two computers, one of the pupils acting as a go-between. The entirety of the correspondence is readily available for the pupils, through printouts stuck into a scrapbook. They go back regularly to this reference to remind themselves of the point where they had left their correspondence, to find subjects to insert into messages to be sent at other partners, or simply for the pleasure or leafing through their past work achievements.

When we arrived in this class, we were pleasantly surprised by an atmosphere of both relaxed and serious work. We had the feeling of observing a work team rather than a classroom. Pretty often, pupils would act in groups on a common task. Discussions are pretty animated. During our first visit, the class was working in groups on mathematical quizzes they had received from another class through the network. Concurrently, pupils would go one after another to the two computers located to the right of the blackboard - a third one was in the back of the class for other ICT activities - to work on their e-mail. The teacher incorporates the practice of ICT into a broader analysis and criticism of traditional frontal and collective teaching. To quote him: "One has to accept once and for all that kids will not do a bit of everything. Those who today do a math quiz, will do some e-mail next time. To resist to this kind of work organisation, means that one resists to using the computer in the classroom. ICT in the classroom is part of a broader perspective; through e-mail they are also encouraged to work on maths because a riddle has been put forward by Perly or Corgalen (other classes on the network)." (w).

Telematics and learner autonomy

The teacher is quite categorical about it: "Learners' autonomy is both a condition and a goal. If you do not achieve it quickly, you'd better forget about using computers in the classroom." (x). This autonomy was basically acquired when we began our observations: pupils had practised e-mail at least since the beginning of the year. Whenever they were confronted with a composition or technical problem, they would first try to solve it by themselves or with a fellow student. They would turn to the teacher only if the problem could not be solved or if an argument would arise.

Pupils had also an independent attitude with we two observers who were seated just behind them. For instance, in one case, two pupils had lost their texts and asked us to remind them of it. But they did not ask us to help them with the spelling or with grammar problems.

This work style seems to be anchored in well integrated instructions: "... if there's a problem, we first ask more advanced pals. If the computer gets stuck, we ask the teacher or we quit the software - and try to save our work, if we can !" (y).

Fourteen of the eighteen pupils in class had access to a computer at home, and the two remaining ones hoped to get one soon. They use them principally for games, for (sometimes) writing personal texts or for assignments for the class journal. Still, the practice of e-mail and the exposure to a word processor are sufficient for some pupils to acquire pretty good a level of expertise. They well understand the difference between DOS and Windows, computer and PC and are able to roughly explain the workings of e-mail if not of those of the Web.

Collaboration, mutual aid and interiorisation of rules

Perhaps the most striking phenomenon was witnessing pupils with important grammar or spelling problems in the process of sharing knowledge and interiorising norms and working habits thanks to these tasks. For example, we observed pupils who were correcting the sentence of a fifth grader in which the question mark was missing. Once he had finished his text, the latter pupil observed the work done by another kid and found an occasion to correct the very same mistake elsewhere.

It may well be that “virtual” peer pressure through the recipients of the message and student collaboration are much more efficient motives than teacher authority !

In general, writing activities go ahead at a moderate but very careful pace, even with what regards the most school-allergic pupils. It is striking to observe that when two students write together, they never come out of their subject - even if they have good laughs whilst they work. The teacher says that he observes such a level of concentration only with specific activities like e-mail, Web page writing, math quizzes emanating from the network or the class journal. We might remark that the common feature behind all these activities is that pupils are involved in productive activities, where they take initiative for/in the construction of a complex object. Deliberations about contents are playful and students discuss formal features: spelling, punctuation, accents, etc. They also rewrite complete sentences to correct their style.

Two sixth-graders offer a good example of a sustained collaboration between students with different levels of skills and knowledge. B - one year late in the school programme - a computer “expert” and an e-mail fan and his friend S. - a good student - are writing together. First, S. is typing and ask B. for "ideas". From time to time, he needs a technical nudge - how to type an apostrophe or for the use of the spelling checker. B., who is perceptibly less proficient in spelling, still suggest solutions when his friend is hesitating. Almost every sentence is discussed and often modified: i.e. should one write "subscribe to the school tournament" (z) of "for the tournament" ? Whilst typing in an emoticon (6) at the end of their message (on which they had worked for almost an hour), they accidentally wipe their whole message away. They nevertheless bravely set themselves to retype their mail... G., a fifth grader who was finished with his own mail, observes them but gets soon bored and begins to play the clown. Refusing to get distracted by these antics, the fist two demand of G. that he'd "f... off" ("se casse"). G. finally complies leaving B. and S. at their well accepted scourge. B. takes the keyboard because he is a faster typist although a sloppier one. Exchanges from now on will turn around spelling questions: do you really spell "didn't" ("n'a") like that ? They do not reach an agreement and they ask us observers to give the correct answer. They go on doing a series of corrections: - "Organisers with an "s”: - Not "you yourself are..." but "you'r..." !; - "Go ehead" is spelt with "ea", not "ae": - "You'r" ? Non, "your" ! ; "No, you need a question mark here", etc. (aa).

Reciprocity between pupils is visibly well accepted and functions smoothly. At some point, it's S. who shows B. how to bring the cursor lower in the page. And he comments on this, jokingly: "...it's the first time that I know something more than you with computer !" (ab).

Collaboration, work methodology and social relationships

One observes different work styles in front of the computer screen. Some will type ahead without looking at the screen, the eyes fixed on the keyboard, others will type letter after letter, word after word or sentence after sentence. Once the message is finished very few pupils will spontaneously reread their text, and if some do, they perform a pretty random check - it is interesting to watch how they follow their texts on the screen with the mouse-cursor, to judge how precise their reading is. As a contrast, others will click systematically on the scroll bar, and check systematically each new line that appears at the bottom of the window.

We could also observe that textual corrections were a matter of negotiation between students. This is probably due to the fact that work is often done in couple relationship, a situation that brings up a mediation pattern. Two pupils would debate their technique for correcting their texts as we were interviewing them. Among their comments, they said that they appreciated the help of the spelling checker which they'd use mostly at home. They were dreaming of an even more effective tool that would also check grammar, such as verb concordance.

Student often have a clear conscience of what is at stake , positively and negatively, when they collaborate: "... when we are two it's more fun, when we're alone we are more concentrated. - We have more ideas when we're together. - You have to make sure to take someone who is a good speller with you." (ac). They also value to be able to change roles from time to time (i.e. exchanging the position of the typist with the position of the "thinker/designer"). They also are aware of potential negative consequence such as useless disputes and unequal efforts between partners.

The ability to discuss these problems and the maturity of a number of students is certainly the result of the pedagogy applied by the teacher since two years and into which e-mail activities are effectively and seamlessly combined. Students have therefore acquired a practical experience of collaborative/co-operative work, the royal way to social learning.

Collaboration and productivity

Letters written by students in a couple relationship are notably more substantial, thereby reflecting the potentials of the situation in which they have been written. In this respect, one pupil, a fifth-grader, rather weak academically, proved himself to be one of the most prolific writers of the class. Sometimes she would write long letters with a strong sixth-grader. At other times, she would take with her a friend even weaker than herself. In both cases, we were under the impression that the protagonists were satisfied with the interactions taking place. Either they would learn by teaching to a weaker partner, either they would be partners - even if one remains passive - in an enterprise they would never have dared to tackle alone. This does not mean that all work team would produce such positive results. Sometimes the weaker partner would hardly participate in the writing. In this case, the teacher would not hesitate to intervene and ask the withdrawn pupil to take up, alone, the correction of the text.

Solitary corrections

For those pupils who prefer to write on their own, we observed that writing with the computer offers interesting opportunities for self-corrections. One young girl writes pseudo-phonetically "I may bee will" instead of "maybe" - untranslatable pun and anagram in French on "peut tête" (willing head) and "peut-être" (perhaps) - and then cries out: "Why did I write this !" and corrects her mistake. One may assume that, if she had written by hand, she would have noticed her mistake earlier since the latter activity is much more mechanical. The added difficulty of typing and the kind of control it entails seem to give way to an accrued concentration causing a dissociation between the act of writing and the act of checking the results on screen. Conversely, the ease with which a text on screen can be corrected offers pupils the opportunity to rework many times their texts thereby correcting both contents and style of their writings. A good example is given by a pupils who begins her letter in a very egocentric way. She is involved in a tennis contest and she wishes to know if her mail partner is in the same situation, but she omits important pieces of information: "... hi Steve, it's Sonia, at which contest are you gow..." (ad) As she correct her typing errors, she finally erases the whole sentence and rewrite a more understandable text, contents-wise: "Hi Steve, it's Sonia. I'm going to play at a tennis contest on March 15 and 16. What about you...?" (ae)

The teacher feels that the "child is more motivated to correct himself [when working with the computer]. I have kids who don't manage to write a single line in their notebook and will have no problems to write with the computer. They are slower, but they take great care to produce a correct output. And I do insist on it: [by telling them that] otherwise [their] mail partner is going to wonder with whom [they are] dealing... and the exchange is _anger of very quickly falling apart..." (af). He also notes that he could not get a correct text from his pupils when working with the fax - a tool he had been using extensively until the year before -. With e-mail, students obviously take more care to produce a correct text. "They acquire the habit [of correction] by producing [the text] by themselves." (ag)

Pupils have well interiorised the necessity of writing correctly in a communication relationship: "... because we understand that someone is going to read us. One is less motivated to read if what one gets is full of mistakes." (ah)

Corrections with the teacher

The last stage before sending the e-mail, is to submit the text to the teacher who does the final corrections or suggests to revise it with specific criteria in mind: "Check all the past participles in your text !" (ai) Since he relatively rarely intervenes in the course of each activity, he has all the time necessary to give detailed explanations. The language corrections are compounded with their grammatical rules and the whole procedure takes place as a Socratic dialogue, carefully managed: "One hopes... The “o”, how does it sound when it is followed by a single consonant ? (Again, an untranslatable dialogue since it deals with diacritical accents, absent from English: see note aj).

"Multi-layered" corrections

Our observation of F. nicely illustrates how the teacher takes advantage of the opportunity of writing with the computer and the concomitant motivation the pupils feel for producing correct output by setting up a fruitful teacher-pupil-machine relationship. Here is the story of a student who has important academic and affective problems. Still, he is another "professional" of computers in the class. He proclaims that he will be writing a long letter because he is afraid that his correspondent will drop the dialogue. He types pretty fast but without looking at the screen and accumulates many mistakes.

First version of the message : "Hi this iz F how are u Im alrite I got yur mesage u bit if u write thi at mi place I dont write from mi place bicoz I prefer to write form my clas, etc... If you like I can send you my preferred tool on the Web." (ak)

The teacher is called for the correction. He reads the whole message without taking his breath to demonstrate the lack of punctuation. "Read your text again and put the punctuation. I like what you wrote, but it would be easier to understand with punctuation. Read it again as if you were saying it." (al)

F. produces a second version of his text. The teacher comes and controls it: "Did you add some full stops ? And why ? F. - When I change subjects." (am) The teachers reads aloud again. "One still needs to have a good breath, no ?" F - "But I put commas everywhere !" Teacher: "Read once more... And take care of the verbs only, OK ? I'll correct everything else. If you manage to find [your verbs], it will be a good exercise. And make sure the tenses are right." F. - (talking to the observer) "Oh he's mean, he wants me to rehearse my conjugation !" He still settles himself down to work without further complaints and talks to himself as he goes along "With the perfect tense do you put a “s” ? Oh ! I'm not going to exhaust myself !" (an) And he goes and gets his conjugation copy-book. The French verbs of the third group prompt him to ask a fellow pupils for support. The teacher is called in for a final control and congratulates him. He tells the pupils to give a last check to his plurals.

The teacher is back again and F. asks if it is possible to send his message as an attachment so that he can use the spelling checker on his text. The teacher encourages him to do so. F. makes another series of corrections.

Far from being a just an artificial tool, potentially crippling, using the spelling checker is an opportunity of a fruitful activity since it offer F. a choice among a number of possibilities, his spelling being pretty erratic. In fact, the student is perfectly capable of recognising the correct answer even if has he great difficulties to invoke his stored knowledge in the act of writing.

The teacher comes around one last time to show some more corrections to do. Put already in a pretty good position thanks to his exceptionally long letter, F. asks if he can add a drawing to it. F. thereby pushes his advantage even further, because none of his comrades had combined a drawing and a mail. Within a little more than an hour of sustained activity, F. introduced two important technical innovations in his e-mail and achieved significant work on his writing.

The possibility to work on a text through successive steps (including the use of the spelling checker) seems to us to be one of the most promising and interesting aspects of telematics activities.

Mastering telematics

Technology did not present much of a challenge to pupils, although fifth-graders had no previous experience with computers. They were are all capable, either tentatively or with help of a friend, to open Netscape, to look for an address in the e-mail software and to type a text. Typing was often pretty slow but regular. On occasion, students help each other to find punctuation marks on the keyboard, to select text with the mouse or to compose an emoticon, etc. There are three of four (otherwise weaker) pupils in the class who are considered as "experts" and who are requested for help as soon as the need arises. (The teacher explained that he had strongly encouraged these interactions since the beginning of the year.) Some had learnt how to download mail but, most of the time, the teacher would do it for them.

Telematics and writing skills

For the pupils, e-mail is the first regular opportunity to use, on an independent basis, computers. And for most, it is the first time they tackle a correspondence (which will sometimes evolve into sending postcards or even letters) and they have the opportunity of a personal practice of writing. A striking example is set by A. who is having big spelling problems. He has become an e-mail fan and the activity has lead him to have a regular correspondence - hand-written - with people in his native village in Italy. "The more I write, the more I like it..." (ao), he confides. Some students tell us that they write stories or have a private diary at home. Most prefer to write with the computer, because corrections are easier to do, but some still prefer to write by hand, because it is faster.

The teacher is convinced that these customary e-mail activities have lent pupils a definite "ease and spontaneity" in their writing. "Almost all have gained easiness through this activity. This can be seen in the [class] journal. It takes hardly three days to write those articles, and we are done with it. Before that, for certain pupils, writing down something was a big story. Writing every day, demystified the process. As regards their level in spelling, I feel [that they are better] but I don't really have the adequate tools to measure this kind of progress." (ap)

Neither work nor game

The teacher was careful to give special status to e-mail, right form the onset of these activities. He had introduced this activity at the beginning of the year as being "not a choice, but an opportunity" (aq) It is a project shared by the whole class, so it somehow "goes without saying". Then, it isn't limited to fixed periods. It however implies a number of rules, like the necessity to produce correct texts. The students appreciate this special status. This project is felt to have the status of both work and play. " - It's a game because we have fun and it's work because we have to spell right." (ar) They unanimously feel that it is both an effective and entertaining way of learning.

If pupils enjoy the activity, the teacher is well aware that he is the initiator and nurturer of the project: "... if I wouldn't awaken their motivation regularly by, for instance, counting the number of messages exchanged so far or crying out every morning " who's ready for some e-mail ? ", I'm pretty convinced that the whole project would quickly collapse." (as)

Productions

Over a period of six month, each pupil would produce between six and fifty messages (the mean number for most would be around fifteen messages), each one being between four to eight lines long. On average, the writing itself takes between fifteen to 40 minutes. For the teacher this activity is a satisfactory one. " [...] it's like the font setting activity in Freinet schools (7). In fact it is the very same activity..." (at).

The number of correspondents per pupils varies between two and thirteen. Some students will maintain their correspondence during a period encompassing the whole year. The gender of the correspondent does not seem to be a discriminating trait, but we could observe that some boys would insist on writing to boys only.

The good pupils are generally the most prolific writers, but it is to be noted that three of the weaker students were among the most enthusiastic and productive writers.

Whether they are skilled or not pupils all write letters with the same kind of topics. They seem relatively poor in terms of content. Obviously, the principal aim of the mail activity is to keep it going, even if correspondents do not have much to say to each other. A good number of messages are about requests for answers, with threats to stop if the correspondent does not comply, about excuses for delayed answers or about rather ritual questions which seem to be sent just to keep the communication alive. Pupils have some difficulties to go beyond the first questions they have formulated, merely based on the keywords of the "visiting cards" they had picked at the start of the correspondence and that had helped them choose their partners.

Formal textual features are also pretty cliché, at first examination. But after closer scrutiny, we could nevertheless distinguish some stylistic effort. Whole sentences are very often completely rewritten to use more sophisticated or mannered expressions, away form usual child-talk blabla. Both spelling and grammar are dealt with conscientiously and finally become relatively correct - with a few nudges from the teacher.

This project illustrates many aspects of the pedagogical potentials of telematics. Sustained situated and relatively autonomous production of small correct texts, is an excellent way to go towards activating and consolidating writing and languages skills in students. The additional circumstance that the teacher can leisurely observe and support all pupils, be they weak or strong in language skills, in the course of an devoted and upheld writing and mailing activity, is a good proof of this.

The teacher insists: learner autonomy is a prerequisite to be able to practice telematics in the context of a class who carries out many parallel activities. We should add that this method is not a problem because the activities build themselves on the expertise and the collaborative impetus of all pupils.

In a like manner, collaboration leads students into explicating composition rules, a process that is bound to reinforce learning. Indeed: learning by explaining to peers always has been a excellent way of acquiring knowledge. This active participative interaction is probably the best way to help students interiorise the production of a correct way of writing as a value-added activity, since peers - and not only the teacher - recognise it as such.

Finally, collaborative tasks have still another advantage: student have the opportunity to learn together and to develop interpersonal co-operative communication skills: precisely one of the implicit learning features that motivated our research.

Conclusions

Optimising the conditions for correspondence

The principal advantage e-mail correspondence is the strong motivation it elicits from students. This is derived much more from the correspondence as such than from the technology. It is therefore essential that these exchanges be maintained in good conditions. This may seem obvious, but it is definitely more difficult than most teachers think.

Reliability of correspondents

Despite their best efforts, even experienced teachers often fail to secure reliable correspondents and to agree with a distant colleague on a clearly defined project. Whole classes disappear, vacations and other more or less foreseeable events interfere, answers are too slow coming, etc. Reliability is one of the major reasons for which some teachers prefer working within an established (and if possible local) network, in which teachers know and trust each other. (Obviously, they have disadvantages for people who want to exercise foreign languages.) Local or regional networks have the advantage that teachers can meet physically. The very big international networks and lists seem a bit impersonal and not necessarily a source of reliable partners. Could one imagine combining the advantages of both with a “ federation ” of local networks ?

“Enriching” correspondence

The exchange often dies out because the correspondents can’t find anything to say to each other, which raises the question of what kind of topic, project or other sort of “ enrichment ” should be introduced by the teacher. From that point of view we observed several options :
In the primary school situation, the children maintained correspondences all year without any real stimulation of this sort. This is probably due to several conditions. a) They choose their correspondents from a relatively large group of classes that participate in the regional EduNet network (thus all the children in one class don't have to choose their correspondent among those of one other class). b) They can choose them on the basis of keywords identifying interests, age, sex, nationality, etc. c) In the network, teachers can count on their colleagues to keep the exchanges going. d) The relationship is “ enriched ” in the sense that there are other exchanges between the classes (mathematical games, in this case), even if these aren’t directly linked to the individual correspondences. e) Primary school children are less likely to let drop a correspondence because it becomes repetitious, as they seem particularly interested in exchanges for their own sake.
At the secondary level, loss of the planned correspondents obliged one class to fall back on exchanges with individual students scattered around the U.S.A., without any real co-operation between teachers. In this case correspondence was definitely less rich and some students dropped it entirely. Another class, which also had problems establishing a regular one to one correspondence, was able to fall back on accompanying themes and projects, although students were a bit critical of exchanges that they considered too impersonal.
To sum up, personal correspondence alone may quickly exhaust itself, but one must be wary of "enrichments" that crowd out the personal relationship.

Other conditions

Correspondence must be sufficiently frequent (say once a week), so that students can stay interested and keep track of questions and answers. Everyday access to e-mail is the ideal. It is important to be able to respect the students tastes with regards to partners, particularly concerning interests, age and sex. Finally, successful and perennial correspondence very much depends on the determination of the teacher, who must remind, encourage and have definite expectations concerning productivity. There’s no free lunch.

Organisation and control of the activity

What’s really going on ?

Some teachers tend to think that students in front of a screen are necessarily active. This is not the case ! When the situation in a computer lab is sufficiently chaotic, student participation can become in effect voluntary. A large part of the class continues to produce (which shows the great motivational potential of this activity), but some students can and do get away with doing practically nothing. Teachers must give students precise conditions and criteria (i.e. “ By 11 o’clock I want you all to have finished at least one letter ! ”).

ICT, a Trojan horse for “open learning” ?

The teachers involved obviously like technology and consider important to introduce students to it, but for them e-mail activities are above all an option in favour of “ open ” learning situations (in particular the use of language in a situation of real communication). The more successful teachers took positive operational steps to organise and encourage autonomous activity including the use of sources, mutual aid and collaboration. All of these at once improve the quality of the productions, are “ implicit ” learning objectives in themselves and allow the teacher to take some distance in order to better observe and organise the situation.
But bringing students to be really autonomous requires strong initiatives on the part of the teacher ! Can ICT be a Trojan horse to get “ open learning ” into schools ? Or are such methods in fact a condition for successful activities of this sort ? Teachers who are already in favour, and capable of, using such methods are likely to take up correspondence activities. The others will probably use computers in more traditional ways. If they want to use e-mail effectively they will have to accept the risks that "open" learning situations carry with them.

Is ICT a respectable pastime ?

Experiences of e-mail that were relatively linked to the regular curriculum were more prone to be taken seriously by the students, and thus more successful. This is important also because several teachers expressed the fact that they felt under the critical eye of students, parents, and colleagues. It seems that Internet activities have an ambivalent status. Teachers aren’t sure if they are seen as interesting, new and prestigious, or as a sort of not very serious pastime.

Control and correction of messages

It seems to us that a pedagogical use of this technology must obviously try to encourage the use of correct language, especially as one of the advantages of the correspondence situation is precisely that students are relatively motivated to write correctly. Our primary school teacher's systematic correction of outgoing letters seems excellent in that context, particularly for students writing in their maternal language. As far as privacy is concerned, students didn't seem to have very private things to communicate. If they do, the teacher says that they quickly find ways to do so!

Other teachers don't intervene without being invited, not wishing to act as a " censor " with older students. Some also consider that for foreign languages (particularly with beginners or weaker students) the most important objective is to encourage the use of the language, even if in an imperfect form. But as students are eager to send correct messages anyway, it should be possible to bring them to express this requirement themselves, rather than imposing it.

Objectives and acquisitions

Beyond the rather lofty and ideological idealisation of " communication " as such, five more concrete objectives were put forward, and attained with varying degrees of success.

1) Acquisitions concerning language

The motivation derived from learning language in a situation of "real" communication was the principal reason given by teachers for engaging in this activity. With respect to usual language learning, e-mail is also a useful complement because it clearly defines a space and a moment in which students concentrate on spontaneously producing texts of their own. It proves to be an effective way to review and mobilise previous learning and to give confidence to learners. Students don't have the impression of having other occasions of "putting together all the things we've learned" to actually express something.

Teachers and students generally consider that significant progress in language skills (both in written production and comprehension) is made. We have the same impression, though neither we nor the teachers have really measured this. Interestingly, students say that they are also more confident of being able to speak the language after this experience of written correspondence.

For our younger students, e-mail is their first introduction to correspondence, and often to the **spontaneous and autonomous use of writing** in general. It also seems to be a situation which can induce students **to want to write correctly**. The most impressive observations that we made in this respect combined the ease of correction offered by the computer, the use of spelling check software, the " virtual " peer pressure of the message's recipient and student collaboration at the keyboard to create a learning situation most conductive to the interiorisation of norms of correct language and good work habits. The teacher could also intervene in this situation with instructions that led the students to correct their texts by stages, something which would be much more difficult, if not impossible, with a hand-written text, or in a situation where the students were less motivated.

2) Competence with regard to the technology

The students being eager to learn, this was achieved in all classes relatively rapidly, with or without a particular didactic effort on the part of the teacher.

3) Intercultural exchange

This is the only objective that we consider was not really achieved in the situations observed. Our observations, and some teachers', indicate that students are spontaneously interested in and sensitive to what they have in common with their correspondents: tastes in music, sports, hobbies, etc. Even when they are noticed, cultural differences tend not to be interpreted, if the teacher does not take positive steps to construct that kind of learning (i.e. pointing out and explaining a particular element in a correspondence, finding or proposing to look for additional information on the region in which the correspondent lives, etc.).

4) An opportunity for weaker students

The activities definitely mobilise some (not all) students who have difficulty with the particular subject or who are generally low performers; in particular, they motivate students who aren't interested in writing in relation with usual school activities. The technology as such is a new subject which gives them a chance to start off on an equal footing with others, and even to distinguish themselves. Teachers consider, and our observations tend to confirm, that many difficult, restless students tend to be more concentrated in front of a computer, as though its interactivity provided some of the extra “ attention ” and stimulation that these students need. Furthermore, correspondence automatically individualises learning, as each person determines the content and thus the level of difficulty of the task.
On the other hand, computers do **not** automatically elicit as much activity as teachers sometimes imagine. Moreover, if the teacher loses control over this necessarily complex situation, confusion, dispersion and demobilisation can set in, and these tend to particularly affect weaker students.

5) Social learning

We have already mentioned social behaviours such as autonomy, collaboration and mutual aid among the conditions necessary in order to develop e-mail correspondence with a maximum degree of success. But of course they are also themselves important “ implicit ” learning objectives. We observed certainly very fruitful interactions between students learning to explain to others, to debate on the presentation of a text and generally to learn and work in groups. Teachers should realise that **individual correspondence doesn't preclude encouraging mutual aid** with respect to the technology, spelling, vocabulary, etc., and that it is counter-productive to try to answer all these kinds of questions themselves.

6)How much of these different kinds of learning is going on ?

Obviously the observations were not designed to answer that kind of question. However we did observe that teachers had organised “ intelligent situations ” in which various and valuable learning was certainly happening. The pace was in general pretty leisurely, but that is to be expected when the initiative is at least partly in the hands of the students, and such a situation certainly has positive effects from the point of view of the students' attitude towards, and maybe even retention of, what they learn. We generally observed a remarkable degree of sustained concentration and interest on the part of students in these learning situations.

Notes

(1) Scheduling problems during the observation denied us the opportunity to follow the work done in the other class, that began later than planned.
(2) The pupils of the German language class have not been interviewed, but we were able to talk with the teacher.
(3) In the frame of TESLCA-L (Teachers of English to Speakers of Other Languages-CAL Special Interests).
(4) This does not mean this did not happen outside of the computer lab sessions.
(5) see http://tecfa.unige.ch/socrates-mailbox/tv-watch-engl.html
(6) Emoticons (or smileys) are graphic items use in e-mail usually made out with signs or letters to convey an understated feeling like joy - :-) -; sadness - :-(, etc.... in the course of a message.
(7) Freinet a French pedagogue (1896-1966) who created a method which is at the basis of a number of primary schools whose entire pedagogical approach is built around collaborative, task-oriented group work that aims at building up the free expression of children's' creativity.

Original French version of the quotes

(a) "certains collègues n'aiment pas quand ça rigole"
(b) "cela prend trois fois plus de temps qu'à la main"
(c) "en dehors de ce cours, [d'anglais], on écrit partout à la main"
(d) "c'est plus joli, plus spontané à la main"
(e) "ils savent que chez moi c'est comme ça"
(f) "une fois par semaine, ça va..."
(g) "La formule actuelle a ôté de la spontanéité"
(h) "chez nous, c'est le bordel"
(i) "ils s'étaient un peu imposés à nous"
(j) "Je n'ai jamais eu le temps de finir. Une nouvelle lettre arrive à tous les cours et j'avais écrit une demi-lettre". "Je vais le plus vite possible, je n'arrive pas à faire plus"
(k) "avec un paquet d'aspégic"
(l) "Progrès, c'est un grand mot. On met en application ce qu'on a appris."
(m) "c'est peut-être bien pour quelqu'un qui a de la peine, mais pour les forts en anglais ...?"
(n) "Nous avons écrit, ils ont réécrit. On a écrit à nouveau et alors ils ont écrit à quelqu'un d'autre. Il fallait tout reprendre à zéro avec un nouveau correspondant."
(o) "Les Israéliens sont plus avancés en ordinateur, ils s'y intéressent, ils savent taper"
(p) "Ils sont plus jeunes que nous. Ils parlent de leurs hobbies et ça continue comme ça"
(q) "... ce sont les idées qui priment (sic!), on n'a pas envie de fouiller dans le dico !"
(r) "... pour que ça avance, il faut que vous soyez au point pour fonctionner sans moi dans la salle des ordinateurs"
(s) "Je pense que je vais vous donner un peu de travail individuel, sinon je vais devoir faire de la discipline, et j'ai horreur de ça."
(t) "J'aimerais qu'on ne m'interrompe pas pendant que j'explique les feuilles."
(u) "remercier pour les informations concernant la TV et assurer qu'ils en feront bon usage"
(v) "On ne savait pas à qui on communiquait. Il y avait trop de monde à la fois."
(w) "Il faut accepter, une fois pour toutes, l'idée que tous les gamins ne feront pas tout. Ceux qui font de la télématique aujourd'hui feront une autre énigme une autre fois. La résistance à cette idée implique une résistance à l'ordinateur en classe. Par ailleurs, ça fait un ensemble. A travers la messagerie ils sont motivés pour la recherche mathématique de l'énigme, parce que c'est Perly, ou Corgalen qui a posé la question."

(x) "L'autonomie est autant une condition qu'un objectif. Sans l'atteindre assez vite on ne peut pas avoir un ordinateur en classe".
(y) "Si il y a des problèmes on se débrouille, ou on demande aux copains qui savent bien. Si ça se plante, on demande au prof, ou on ferme - en sauvant si on peut!"
(z) "Es-tu inscrit au tournoi scolaire" ou "pour le tournoi scolaire"
(aa) - "Organisateurs avec un “s”; - Pas “tu t'est”, “t'es”!; - Avance s'écrit avec “an”; - "“T'es”? Non, “ tes”; - Non, il faut un point d'interrogation";
(ab) "C'est la première fois que je connais quelque chose en informatique que tu ne sais pas!"
(ac) "A deux c'est plus rigolo, seul tu te concentres mieux. - On a plus d'idées à deux. - Il faut prendre quelqu'un de bon en orthographe".
(ad) "Salut Steve, C'est Sonia, quelle tournoi va-tu faq...".
(ae) "Salut Steve, C'est Sonia. Moi je vais faire un tournoi de tennis le 15, 16 mars. As-tu...."
(af) "l'enfant est plus intéressé à la correction (avec l'ordinateur). J'ai des enfants qui n'arrivent pas à faire une ligne dans un cahier, mais qui font sur la machine. Est-ce qu'ils n'auraient pas pu écrire plus sans la machine? Ils vont plus lentement, mais ils ont le souci que ce soit correct. J'insiste beaucoup là-dessus: “Sinon l'autre va se demander à qui il a affaire”. Sinon ça peut se dégrader."
(ag) "Ils acquièrent une démarche en produisant vraiment eux-mêmes."
(ah) "parce qu'on sait que quelqu'un va nous lire. Ca donne moins envie de lire si ce n'est pas juste."
(ai) "Contrôle tous tes participes passés!"
(aj) "On éspere: le “e”, il fait quel son quand il est suivi d'un “s”?"
(ak) "Tcho c'est F comment ca va moi ca va bien j'ai rescu ton message tu ma si tu correspon ceput chez moi bien je ne correspond pas de puit chez moi par ce j'aime mieu corresponre depuit la classe. etc. .....Si tu veux je peux t'envoyer mon outil préferé sur le Web."
(al) "Relis le tout en mettant de la ponctuation. C'est intéressant ce que tu dis, mais on comprendrait mieux avec de la ponctuation. Relis-le comme si tu parlais."
(am) "T'as mis des points? En fonction de quoi? F- Quand je parlais d'autre chose." L'enseignant le relit à voix haute. "Faut encore avoir un bon souffle, hein? F- J'ai mis des virgules!" Maître - "Relis encore une fois... ne regardes que les verbes, OK? Moi je corrigerai le reste. Déjà pour les trouver ce sera un bon exercice. Tu contrôles les terminaisons." F- (A l'observateur) "Ah il est méchant! Il veut me faire faire la conjugaison"
(an) "Avec l'imparfait , il y a un “s”? Ah! je ne vais pas me fatiguer!"
(ao) "Plus j'écris, plus j'aime ça!" .
(ap) "Ils ont presque tous énormément gagné. Ca se voit avec le journal. En trois jours on a fait ces articles et c'est fini. Avant, pour certains élèves, c'était toute une histoire. Le fait d'écrire tous les jours a démystifié ça. Sur la qualité orthographique c'est plus du “feeling”, je n'ai pas d'outils pour mesurer."
(aq) "non pas comme un choix, mais comme une chance".
(ar) "C'est du jeu parce que tu te marres, et du travail parce que il y a de l'orthographe."
(as) "Si je ne relançais pas de temps en temps, par exemple en faisant le total des messages reçus depuis le début de l'année, si je ne demandais pas chaque matin “Qui veut aller à la messagerie?”, je suis convaincu que cette activité finirait par tomber..”
(at) "C'est long? C'est comme poser les caractères d'imprimerie chez Freinet. Au fond c'est la même chose."