Teacher autonomy in multiple-user domains: supporting language teaching in collaborative virtual environments

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ABSTRACT The concepts of teacher and learner autonomy have played an important role in the context of language teaching and the Internet over the past few years. The full potential of Internet resources, even authentic information resources, has largely remained unused for language learning and teaching. Organisational and affective factors have discouraged many teachers from using the Internet for language teaching. The Internet-enhanced object-oriented multiple-user domain (MOO) can serve as a tool to select and enhance Internet resources, while at the same time expanding the possibilities of the traditional classroom. Its text-based, synchronous and asynchronous communications resources are integrated within a common interface. Its support mechanisms are good for language teachers, who are only too often left alone with the new technology. The author argues for an intricate interdependence of pedagogy and technology, and sees teacher autonomy and the MOO as a promising combination for language teaching purposes. The organisational framework of a particularly promising language teaching context is outlined: the combination of tandem learning and MOO in a project involving information and communications technology courses at the German Fachhochschule Rhein-Sieg and Trinity College Dublin. The opportunities of a written medium in real time for the development of literacy and higher cognitive skills are considerable. The MOO's modular nature and widespread implementation make it a technology that is here to stay, and it can serve to create not only a lasting community of learners, but also of educators around the world.

The Concepts of Learner and Teacher Autonomy

The concepts of teacher and particularly learner autonomy have been discussed for a number of years now. Learner autonomy has frequently been misunderstood as simply self-instructed learning. However, the amount of teacher involvement in the autonomous classroom is not to be underrated.

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This means that teachers can only become successful in their efforts to support autonomy if they reflect on their own position in the learning process as well as that of their learners.

As Little (1995) rightly suggests, learner autonomy is nothing new: 'In formal educational contexts, genuinely successful learners have always been autonomous' (p. 175), but it is important to pursue 'learner autonomy as an explicit goal, to help more learners to succeed' (p. 175). In Little's words:

> autonomy is a *capacity* – for detachment, critical reflection, decision
> making, and independent action. It presupposes, but also entails, that
> the learner will develop a particular kind of psychological relation to the
> process and content of his or her learning. The capacity for autonomy
> will be displayed both in the way the learner learns and in the way he or
> she transfers what has been learned to wider contexts. (Little, 1991,
> p. 4)

The major aim is to develop an increased awareness of one's position as learner and the subject of language learning, and on the other hand to assume responsibility for the learning process and the language learning agenda. This capacity has to develop out of our interaction with others:

> The developmental learning that unimpaired small children undergo
> takes place in interaction with parents, brothers and sisters,
> grandparents, family friends, neighbours, and so on. Education, whether
> institutionalized or not, is likewise an interactive, social process. (...) our
> capacity for self-instruction probably develops out of our experience of
> learning in interaction with others: in order to teach ourselves, we must
> create an internal substitute for the interaction of home or classroom.
> (Little, 1991, p. 5)

For teachers this means that not only is it important to instruct learners in a manner which relates to their explicit knowledge, but also that instructors need to 'understand the principles on which their practice is based' (Little, 1994, p. 118). With the emphasis on the social dimension of autonomy, the teacher's goal must be, in Vygotskian terms, to:

> create and understand the mechanisms of the zone of proximal
> development in which learner and instructor carry out different
> functions, both of which contribute to learning which is more beneficial
> than could be achieved either by the spontaneous efforts of the learner
> alone or by the mere transmission from instructor to learner of the
> principles of a second language. (Tort-Moloney, 1997, p. 9)

Leni Dam has suggested that 'the most important aspect of developing learner autonomy is probably a growing awareness of social as well as learning processes, for teachers as well as for learners' (Dam, 1995, p. 80). In her language classroom, one of the key elements is socially determined responsibility, between teachers and students as well as between peers. Within a framework of basic principles, the activities should be jointly

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developed and elaborated by the teacher and the students. Students are encouraged to make choices and assume responsibility for them. The principal aim is awareness of their role and the role of others in the learning process, and awareness of the target language: 'In other words, [Dam] attempts to make the classroom situation transparent to her learners by making them aware of the link between what they do, how they do it, why they do it, and what they have learnt' (Tort-Moloney, 1997, pp. 16–17). There are three key elements to Dam's approach. First, she uses a diary 'to document and evaluate the ongoing teaching/learning process' (Dam, 1995, p. 10). Secondly, she encourages groupwork, but in the sense of supporting the individual learner. Thirdly, an important factor is evaluation to check whether objectives have been met and as 'a basis of experience and awareness that can be used in further learning' (Dam, 1995, p. 49). It makes sense to apply these principles to teacher education.

Little (1995) suggests that '[we] must provide trainee teachers with the skills to develop autonomy in the learners who will be given into their charge, but we must also give them a first-hand experience of learner autonomy in their training' (pp. 179–180). This can be achieved by guided practice and the inclusion of peer collaboration at the level of teacher training programmes. Guided practice has been shown to be highly beneficial, mainly for two reasons: 'teaching is a dynamic process requiring more than a set pattern of responses' and collaboration between teachers led to an 'analytic dialogue in which their theoretical and experiential knowledge was sifted and synthesized' (Schlumberger & Clymer, 1989, p. 157). Here we can see parallels with Vygotsky's notions of external scaffolding and internalisation. Another element of the teaching process is interactive self-regulation, a process of developmental adaptation by the teacher which 'cannot be seen as a response to successful learning but as part of teaching as such' (Tort-Moloney, 1997, p. 37).

The goal of developing teacher autonomy can thus be formulated as to allow 'teachers to develop autonomous relationships of dialectical dependence on and independence from variables such as curriculum, research, and classroom discourse, among other variables' (Tort-Moloney, 1997, p. 50). Teachers are 'more likely to succeed in promoting learner autonomy if their own education has encouraged them to be autonomous' (Little, 1995, p. 180). Teacher training should not be confined to teaching techniques. It is vital that the autonomous teacher becomes aware of 'why, when, where and how pedagogical skills can be acquired and used in the self-conscious awareness of teaching practice itself' and that he/she is integrated into a model where 'teacher education is provided through mutual assistance of students, teachers, institutions, consultants, researchers, curriculum developers, all dynamically linked together at the interpsychological and at the intrapsychological level' (Tort-Moloney, 1997, p. 51; see also Tharp & Gallimore, 1988).

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Teacher Education and Computer-assisted Language Learning

For several years I have given introductory and intermediate workshops and teacher training courses for teachers in third-level or higher education and adult education centres, both in Ireland and abroad. In spite of media reports suggesting widespread computer literacy, the major difficulties that arise remain the same. Many language teachers are still largely unfamiliar with present-day computer technology, in particular the Internet. In many cases they are faced with far from 'intuitive' computer interfaces, a growing diversification of development tools such as *Java, JavaScript*, etc., and the steep learning curve of complex authoring systems. In addition, many teachers have to face organisational obstacles, such as lack of time, funding, or training, to properly familiarise themselves with tools or develop new resources (see Levy, 1997).

There are also a large number of teachers who voice concerns about the familiar image of the computer replacing the teacher, and thus about computer-assisted language learning in general (or naive notions of the term). It is still important to emphasise the role of the computer as only assisting (in self-access mode or otherwise) traditional classroom discourse, as a tool, tutor, or medium. It is also a widespread perception that the computer seeks to emulate human qualities, as an equal partner in the learning process. This aim, while still present in some approaches in artificial intelligence, has however been moderated in recent years, especially in the context of language learning (for recent developments in natural language processing, see, for instance, Hauenschild & Heizmann, 1997; Kurth, 1997; Rötzer, 1997; Zink, 1999; Kuhlmann, 1999).

These concerns have to be countered by a balanced mix of pedagogy and technology. It is necessary to focus on available and reliable computer technology while maintaining an open, extensible, and modular approach to development. Good examples are collaborative and communicative resources, rather than isolating and non-interactive software, although the media hype around the relatively recent Internet resources has mostly concerned itself with its information resources as the 'Information Superhighway'.

Collections of authentic language resources on the Web are now available for a variety of languages.[1] However, the major advantages even of these resources have often been overlooked. Resources can be as topical as live radio or television programmes that are now available on the Web with streamed audio and video technology. The authentic material available on these sites provides much more context for learners than authentic material that is half a year old. In particular, newspapers and magazines provide similar reports to L1 (first language) news information that students may have heard only a day before. Students are thus enabled to see the relevance of their world knowledge for language learning, and the

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scaffolding provided by an L1 resource on local TV allows them to tackle much more difficult information resources than before, which of course can influence motivation significantly.

Language resource collections also allow for data-driven learning. Many newspapers, search engines, and web-based directories offer access to countless sources of information that can be accessed via the Internet. Thus, students can search the collection of the German on-line newspaper *Die Welt* (http://www.welt.de) for any keyword. They could, for example, explore prepositional phrases, word order and idioms (for a discussion of data-driven learning, see, for instance, Rautenhaus, 1996).

Relatively unobtrusive communications technologies like text-based email or multiple-user domain (MOO) have been around for a number of years now, and there is now some evidence to show that they are effective in language teaching, while being low-cost and easily manageable (Warschauer, 1995; Warschauer, 1996). When these two technologies are combined with an approach such as tandem learning, they become powerful tools to break up the artificiality and inauthenticity of the traditional language classroom. Tandem learning relies on the principles of reciprocity, bilingualism, and learner autonomy to connect two partners with complementary combinations of L1 and L2 (second language) in an ongoing learning partnership (for more detailed information on tandem learning, see Little & Brammerts, 1996).

A recent addition to information and communications resources are user-extensible and sometimes personalisable and/or collaborative databases. They offer private and public spaces where individual learners can organise their own learning, but where they can also collaborate with others on documents and databases. Breffni O'Rourke's lexical organiser is a good example (O'Rourke, 1998), and the aforementioned resource collection aims to permit student participation and customisation in its next edition.

O'Rourke's example also points to an important feature of web resources within the context of learner and teacher autonomy. Resources need to allow teachers and students to extend and individualise resources, thus giving students the chance to participate in the selection and organisation of learning material. The goal needs to be to create extensible web resources within a modular approach that allows for the integration of new technology as it emerges. There are two major questions that arise, however. The first is the question of interactivity: how, in the light of all these diverse resources and development tools, can increasingly complex information and communications resources and development tools be made available to teachers and students without being disorientating, while at the same time being participatory so that teachers and students can collect and manipulate their own selection of tools/resources? The second question regards interaction: how can we ensure that asynchronous and synchronous communications resources are available that can replicate the great diversity of teacher-student, student-student, and group interaction we can find in the

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real-life language classroom? In addition, with an approach such as tandem learning, this problem is multiplied into international contexts. The simple question is really: how can we transfer the integrity of the autonomous language classroom *à la* Leni Dam to an integrated learning environment on the Internet?

The MOO as a Collaborative Environment

The problem of integrating the various web resources described above into a common learning environment can be solved within the framework of virtual reality (Schwienhorst, 1998). Virtual reality uses a spatial metaphor to reduce the learner's:

> need for abstract, extero-centric thinking by presenting processed
> information in an apparent three-dimensional space, and allowing us to
> interact with it as if we were part of that space. In this way our
> evolutionarily derived processes for understanding the real world can be
> used for understanding synthesized information. (Carr, 1995, p. 1)

The MOO is a text-based virtual environment that has recently been extended to support and organise a variety of web-based tools. In addition, the MOO offers text-based, synchronous and asynchronous modes of communication. The asynchronous mode of communication functions like a kind of in-house email system, including mailing lists. Text-based live communication may sound antiquated, but it can be particularly effective in language teaching. Learners and teachers connect to a MOO via a specially created character that is individually customisable. They are represented by that character in a virtual environment in which they can participate and collaborate.

This strength of the MOO becomes apparent when we compare it with other synchronous distance education tools. While the combination of missing non-verbal and verbal cues in a text-based environment may be a drawback compared to audio or video conferencing, the major advantage of the MOO lies in its breakdown of distance between participants. In order to allow for collaboration as well as interaction, learners and teachers must be enabled to share tools and resources in real time. This is what Short et al, even before the age of the Internet and virtual reality, labelled the 'coffee and biscuits problem' (Short et al, 1976, p. 140). Neither can be offered to the other party in a teleconference, because 'no matter how elegant the telecommunications system is, the two parties are still in different places and this precludes certain types of activities' (p. 143). Participants in a telecommunications activity sense that 'there is a very obvious barrier between the two parties communicating, no matter how "transparent" that barrier may be' (p. 140). The creation of a character within a virtual environment can provide an alternative to audio and video conferencing and also supports the experimental element within learning.

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Live communication within the same, shared environment is not the only advantage of the MOO over audio and video conferencing. With peers or a tandem partner, students can record transcripts of sessions into a text file which is then instantly available for error analysis, a resource for future learning, and a basis for new activities. The (re)use of transcripts is a decisive advantage over audio and video conferencing modes, which in addition are often unreliable and relatively expensive. I will return to the transcripts in the next section.

All participants in a MOO can create their own learning spaces and decide to share them with peers. The easy-to-use interface allows for simple building mechanisms, such as building/writing a room description, right up to more complex programming tasks, such as interactive Scrabble games that can be played in real time, or conversational robots that can be used as vocabulary tutors or to perform tasks such as message relaying. The importance of creating personally meaningful artefacts has repeatedly been emphasised in learning approaches such as Kelly's personal construct psychology (Kelly, 1963) or Papert's constructionism (Papert, 1993). It was confirmed in the success of a project in the language modules at the Centre for Language and Communication Studies (CLCS), Trinity College Dublin, where students created their own web site (for a general overview and evaluation of our language modules programme, see Little & Ushioda, 1998). At MundoHispano MOO (telnet://admiral.umsl.edu:8888), students and teachers have over time created a number of locations from the Spanish-speaking world as text-based virtual environments. Students' own experiences and perceptions of the target culture are not necessarily limited to the spatial metaphor of the classroom. As all MOO objects are created first and foremost in text (although multimedia material may be linked), any student creation is by definition an exercise in language and programming, and may be particularly well suited to raising intercultural awareness, especially within the tandem context.

The advantages of the MOO are diverse. It is participatory, user-extensible, learner determined and allows for a loop that is fed by synchronous and asynchronous communication as well as authentic information resources. The MOO provides a laboratory in the sense that students and teachers are encouraged to experiment with their respective roles in a new learning environment.

MOO Support for Teacher Autonomy

The last few years have seen the development of a variety of learning and teaching tools to counter one of the most obvious problems of synchronous, text-based communication. As there is no way for students and teachers to signal their intention to speak, conversations may very quickly become forked, and with the addition of more participants and topics more forks are added. This can make conversation difficult or even impossible. Although

the MOO has been reported to be generally non-hierarchical in nature (Crump, 1998; see also Haynes, 1998), it supports a number of teaching tools that can usefully organise and enhance multi-directional communication within larger groups.

Ken Schweller (1998) mentions the classroom-object, which has a number of built-in tools such as blackboards, clocks, tables and chairs, all of which can help to maintain conversational coherence. By using a command in the classroom-object like 'sit blue table', a student would only 'hear' (read: see on screen in text) what is 'said' (read: typed) by others who have also sat down at the blue table. A command like 'speakup' would then go to the whole class. Teachers can stifle all conversation, lock classrooms so as not to be disturbed, etc. The Educore database of MOO objects, developed at Diversity University MOO (http://moo.du.org:8000), includes the Visiting Student Player Object (VSPO). This object allows teachers to set up, for instance, a group of 30 students as characters (with their email addresses) in a matter of seconds. For this group, the teacher becomes a kind of manager, allowing students to extend the virtual environment or even program new objects. The VSPO also enables the teacher to communicate to all and organise members of that group with a one-word command. It is arguable whether these commands repeat the hierarchies of the traditional classroom or whether they are simply a practical necessity. In any case, the decision to use them remains with the teacher. Tort-Moloney (1997, pp. 30–31) has summarised the various simultaneous or sequenced interaction types that take place in a 'scientific' model of the classroom: we can find intrapersonal voices, peer voices (one-to-one or one-to-group), and a pedagogical voice (teacher to learner[s]). Leni Dam saw the problem that arises from the superimposing voices in the spontaneous classroom and called it 'octopus syndrome' (Dam, 1995, p. 26). She countered the problem by nominating helpers 'to reinstate the original one-to-one "scaffolding model" through peer interaction' (Tort-Moloney, 1997, p. 31).

In the MOO, these different processes of peer interaction or peer tutoring are encouraged through the use of a variety of communication commands that determine recipients. Groups can be formed and changed regularly. While taking part in a group discussion, learners can consult the teacher on an individual basis, even if they are in different 'rooms'. Indeed, the occurrence and maintenance of multiple conversational threads (for instance, by working with a class while paging people in other 'rooms' of the MOO) is a common feature of MOO communication. The existence of commands like 'whisper', 'say', 'page' and 'think' allows for the formation of learning partnerships on a continual basis and supports a Vygotskian model of peer support as well as teacher-learner support in the classroom (see Vygotsky, 1978, p. 86).

Maybe the most important tools in the context of learner and teacher autonomy are recording objects that allow students and teachers to 'record' (read: save as text file) any conversation they have. These transcripts can

then be stored in the MOO, read, made available to others in the MOO (and edited in collaboration), sent to a student's email address and printed out. In addition, they could of course form the basis for data-driven learning by individual students and teachers. Schweller reports on a more teacher-focused tool, the *Şintercom* tool, designed by Jan Rune Holmevik at LinguaMOO, that can 'monitor and record activity in up to five rooms connected by a central control room' (Schweller, 1998). This points towards the major strength of an environment such as the MOO. Language use in the communicative classroom, even with native speakers, is useful enough, but students rarely get the chance to use a transcript of their L2 efforts for analysis. Similarly, teachers rarely have the chance to evaluate classroom activity by using transcripts, especially in a classroom characterised by group activity. Individual transcripts and tools such as *Şintercom* can help the teacher in supporting the pivotal goal of learner and teacher autonomy, which is the evaluation of learning and teaching:

> ... on the one hand to ensure that work undertaken is discussed and revised, and on the other to establish a basis of experience and awareness that can be used in planning further learning. It is a recurrent activity between the teacher and individual learners, groups of learners, of the whole class. It can also be undertaken by the learners themselves. (Dam, 1995, p. 49)

Like evaluation itself, the transcripts should be fed back into new activities in a continuous loop.

The support for teachers interested in bringing classes to a MOO is manifold. There are several video tutorials and worksheets available. Many managers of MOOs offer free and extensive technical support which is available 24 hours a day. In addition, some MOOs offer live teacher workshops and introductory sessions on a regular basis. The sessions organised and published through the neteach-l mailing list at SchMOOze University MOO (telnet://schmooze.hunter.cuny.edu:8888) or the computers and writing workshops at LinguaMOO (telnet://lingua.utdallas.edu:7000) are only two examples.

The ICT Course at Trinity College Dublin

The undergraduate degree in Information and Communication Technology (ICT) at Trinity College contains a language course as a required component. Students have a 2-hour classroom session plus a 1-hour individual tutorial per week. Native speaker assistants (mostly students on the Socrates exchange program) assist the teachers during the second half of the classroom session by moderating groupwork and providing target language input for their project work.

Each class has to complete four projects during the course of the year. For 1st-year students, these include a TV programme, a campaign poster, a

debate and a newsletter presentation. For 2nd-year students, the projects are a technology report, a software review, an evaluation of web resources, and data-driven language analysis. Many of the projects encourage using the MOO and/or email for communication with the tandem partners.

The tutorials will focus on the students' individual progress in class and the coordination of their European Language Portfolio that CLCS piloted in 1998–99. The portfolio includes a language passport, which includes the learner's own evaluation of his/her proficiency in the languages he/she knows, a language biography, and a dossier of work illustrating the learner's foreign language skills.

In 1997–98 we carried out a successful German-English email tandem project between the University of Bochum, Germany, and Trinity College Dublin (see Little et al, 1999). In 1998–99, we ran a pilot project using MOOs and the framework of tandem learning with the Fachhochschule Rhein-Sieg near Bonn (the same coordinators were involved). This time we focused on pairing ICT students from two courses (1st and 2nd year). I created a MOO solely for this project, based on the educore MOO database developed at Diversity University, which allowed us to customise the database for our purposes. Jackie McPartland, the organiser in Bonn, and I were able to synchronise many components of the course (such as project-based work and the structure of 2 classroom hours plus one tutorial session per week). However, we were unable to synchronise a scheduled MOO session per week, taking place at the same time in Germany and Ireland. This proved a major stumbling block for all students. Usually, the German university system allows for and encourages a relatively unrestricted choice of courses for students, so that students are fairly flexible in their daily class timetable. The schedule of Irish university students, however, is almost completely structured in advance and there are very few free periods during the week. We found out relatively late in the planning process that the German ICT course would also be tightly scheduled. This left us with only one session when both German and Irish students had a free period, Fridays from 9–10 am in Ireland and 10–11 am in Germany. Not surprisingly, the project found very little support from the students. In addition, the few students who connected reported that the interface looked too unprofessional (we should not forget that many ICT students are used to the graphical standard of multi-user games such as *Quake*).

For 1999–2000, we made a number of changes. First, we started organising the project much earlier, in April 1999. This, together with help from both ICT departments in Germany and Ireland, allowed us to synchronise the weekly 1-hour tutorial sessions. A new teacher in Germany, Peter Kapec, was introduced to the course structure and the MOO technology in regular on-line sessions during the summer, and during regular MOO sessions (about 2–3 times a week) we discussed current classroom work and project stages. By using the MOO system for ongoing

teacher cooperation, we became more aware of the problems and opportunities that lie within the system.

We developed a cycle of four mini-projects, which students can work on at their own pace, and situated them within virtual study areas in the MOO (see Figure 1). These mini-projects are related to the four computer-related projects in the language course, in which students groups create software reviews, web site reviews, web-based exercise cycles, and debate general topics that affect computers and society.

100mm

Figure 1. A sample exercise in CLCS Campus with external web links.

Altogether, there are 22 study areas in the MOO (see Figure 2). These are virtual locations with access to the mini-project descriptions and a picture gallery containing photos of all the students, there are 22 German students and 29 Irish students involved.

Students selected partners according to interests, and they work in pairs or in groups of three. The study areas serve to channel communication, a vital component in synchronous on-line environments.

We also changed the database used for the project. In June the enCore database (available at http://lingua.utdallas.edu/encore/), which was developed at LinguaMOO, was officially published. It includes a much improved form-based interface for building and programming. With the help

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of Sindre Sorensen and Jan Rune Holmevik from LinguaMOO, we also established an automatic logging system. This automatically records all sessions from each participant's perspective, and sends these transcripts by MOO or email to the respective participant (with a copy to the author).

100mm

Figure 2. The basic entry window of CLCS Campus with menu bar, output and input window on the left, and web content on the right.

For 8–9 weeks, from October to early December 1999, Irish students met with their German counterparts during their regular contact sessions with the teachers. Once the first few weeks of the project were over and the students became accustomed to what was required of them, they would literally start 'talking' to each other within seconds. They immediately commented on the intuitive interface and showed great enthusiasm about working with their partners. Overall, our first experiences with the new database are extremely positive: it is reliable and responsive, and students find it extremely easy to use. Teacher intervention is limited to announcing when the halfway point of the sessions has been reached and students switch languages (half the session takes place in English, half in German). Each session finishes with an entry in the MOO notebook, where students write down what they did, what they liked/disliked about the session, and

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how they want to proceed in the following week. Several students have already created their own virtual environments in the MOO, and many students were observed to connect to the MOO outside class hours. This may suggest that they accept the system as a personally meaningful communication tool, not just another tool for classroom work.

By including a rich language and programming environment like the MOO, we hope to increase the motivation of the students to actively participate in the learning process. As mentioned before, any project that is created in the MOO uses by definition both language and ICT skills. As such, we see MOO technology as an ideal complement to current ICT courses.

This project has so far confirmed observations by Donaldson & Kötter (1999) and Aarseth & Jopp (1998) that the position of the teacher is completely transformed. During the sessions, students are selecting the topics they want to discuss, and the teachers intervene only to remind them to switch languages or to announce the end of the session. We will discuss the MOO sessions with the students about halfway during the project, with the aim of making the partnership more profitable and raising more awareness of the learning process.

Collaborative Writing and Literacy

Some may see the typed exchanges in the MOO as outdated and second best, especially in the light of recent advances in audio and video conferencing tools. This position, however, ignores the major functions of writing in developing literacy. Written language serves as an external memory, and the transcripts from MOO sessions record complete exchanges between language learners and native speakers. As such, they become much more immediately accessible for reflective or awareness-raising activities than video tapes or audio recordings. Of even greater significance for literacy is 'the increased level of cognitive functioning which is encouraged by the more detached and critical attitude to experience that use of the written language promotes' (Wells, 1981, p. 242). Whereas in oral communication, meaning is defined by an interplay of speaker, recipient, and context, in writing, to a large extent, readers try to infer meaning from the text alone. Olson (1977) therefore argues that the reader's efforts:

> ... to make the organisation of the written text act as the autonomous
> and explicit representation of intended meaning leads to the
> development of a greater awareness of the abstract relationship between
> language and experience and a greater willingness to exploit the
> symbolic possibilities inherent in language. The acquisition of literacy,
> he [Olson] argues, thus provides a tool for, and the spur to, higher
> levels of analytic thinking and formal reasoning – skills which are
> amongst the chief forces in the development of civilisation, both in

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> whole cultures and in its individual members. (Wells, 1981, pp. 244–245)

While many discussions of literacy have focused on reading, it is in the actual creation of text, the writing process, that 'the individual is made most aware of the symbolising function of language, and of the power that it has to capture experience so that it may be considered, questioned and modified in the interests of increased understanding and future applications' (Wells, 1981, p. 254). Through the processes of writing, learners are thus required to develop those literacy skills that we most associate with higher cognitive skills. This involves a greater awareness of their learning processes, and in the case of language learners, a greater metalinguistic awareness (Olson, 1991). Collaborative writing in real time, such as in a MOO, can add to this a social and pragmatic dimension (Murray, 1992), contrary to early predictions that the shift away from orality in new media necessarily brings with it social alienation and a lack of interpersonal involvement in the dissemination of information and participation in entertainment and teaching activities (see also McLuhan, 1967; Ong, 1982; Scholes & Willis, 1991).

Learner and teacher autonomy are inextricably linked. When we apply these concepts to Internet technology for language teaching, there are some technologies and ways of using them that are more appropriate than others. If we use only authentic non-participatory information resources in the target language, we neglect the wide variety of communication resources that are available to us. Some, such as the MOO, are reliable, free of charge and have many supportive teachers who are willing to exchange ideas and help with projects. In this way, we can not only develop a community of learners, but also a community of educators on the Internet, and both are far from being virtual.

Acknowledgements

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Note

[1] For example, the author's resource collections are available at: http://www.tcd.ie/CLCS/languageresources.html

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