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Making meaning online: computer-mediated communication for language learning

Over recent years a great deal of our communication activity has moved online, and various forms of online communication have also been introduced into education. Not only are they being used in distance settings to bring students and teachers together but increasingly also in more traditional teaching and learning contexts to give learners more opportunities for interaction (e.g. with native speakers for language learning purposes) and to prepare them for the world of work. When looking at the online tools available today, it is clear that there has been an increase in multimodal communication (Kress & van Leeuwen 2001) as well as a shift in modes, with written (and often asynchronous) communication taking over some of the functions of spoken language, pictograms (such as emoticons) replacing paralinguistic elements of speech, and avatars simulating body language. This article takes a sociocultural approach – which assumes that learning has to do with how people appropriate and master tools in a given culture or society (Saljö 1999) – to explore the impact of computer mediation on communication in online language teaching and learning settings, where the issue of using new tools (or familiar ones in a new context) is complicated by the fact that learners interact in a second language. Computer hardware as well as software have an impact on how we make meaning, and I use the concept of affordances to examine the particular communication possibilities which online tools support or inhibit. In particular, I examine how conventionalized forms of meaning-making are challenged and what the implications of this are for interaction and collaboration, discourse, and in terms of community building and affect. The conclusion highlights the importance of teacher training, the development of learner literacy, and task design. Finally, I suggest that the pedagogy of multiliteracies could be used to support the integration of technology in language learning and teaching more generally.

1. Introduction

Over recent years a great deal of our communication activity has moved online. Our children interact with their friends via social media such as Facebook; youngsters immerse themselves in online games; and many of us use Skype to stay in touch. What has also changed is that online communication – particularly in written form – is taking over some of the functions of spoken language. This is particularly obvious in social, everyday communication where emails, text messaging or written messages on social network sites have replaced face-to-face (f2f) or telephone conversation. Online tools are no longer just communication 'accessories' but play a crucial role in people's lives.

Online communication tools such as forums, blogs, wikis, audio and video conferencing have also been introduced into education. Some of these tools (e.g. wikis or Second Life) originate from outside educational settings; others have been

created specifically for teaching and learning purposes (e.g. VLEs such as Moodle or videoconferencing platforms such as Elluminate). Initially their potential was mainly recognized for distance education, with institutions investing in these tools to bring students and teachers together (for an overview of the development of information and communication technology (ICT) and accompanying research at one tertiary distance institution, see Hampel and de los Arcos 2013). Increasingly, however, they are being employed in more traditional teaching and learning contexts to give learners more opportunities for interaction (e.g. with native speakers for language learning purposes), to prepare them for the world of work, and to make use of forms of electronic communication that many users today have become familiar with in other contexts.

A recent ECAR report of undergraduate students in the United States and information technology summarizes its key findings under the following headlines:

- Blending modalities and engaging leaners is a winning combination.
- The time has come to move beyond thinking about individual platforms and devices.
- Students believe that technology is critical to academic success and that it plays an important part in their future accomplishments.
- Students want multiple communication options, and they prefer different modes for different purposes and audiences. (Dahlstrom 2012, 5)

However, tools are not 'innocent' or 'neutral' (Thorne 2003, 38) but have an impact on the activity for which they are used, and including digital tools for communication in a class makes for a different form of learning compared to using traditional forms of f2f instruction where teachers and learners are physically co-present in a room using tools such as books and a blackboard. In online spaces, communication – and learning – is mediated at an additional level. Mediation is a crucial concept in sociocultural theory, where interaction is seen as crucial to learning. As Ellis (2003: 209) states, learning actually arises *in* interaction, not *through* interaction. The tools that learners use to interact play a mediating role – and by tools I mean not only language (i.e. L1 or L2 in language learning) and tasks, but also writing and physical tools such as the blackboard and the computer. Säljö (1999, 147) observes that "the

ways in which humans learn […] changed dramatically when writing became used as a resource for communicating in social life. […] [T]echnological development runs through human history".

In order to see why communicating f2f is fundamentally different from communicating online, it helps to take an ecological approach which sees learning as a "nonlinear, relational human activity, co-constructed between humans and their environment, contingent upon their position in space and history, and a site of struggle for the control of social power and cultural memory" (Kramsch 2002, 5). This chapter will focus on one part of the environment in computer-mediated language learning, namely the tools that are used to make meaning and communicate in contrast with the tool use in f2f classrooms, and gauge the implications for language learners and teachers. In this the concept of 'affordances' is useful, a concept that was developed by James Gibson, a psychologist who defined affordances as "what [the environment – in our case a digital environment] offers the animal [including the human animal], what it provides or furnishes, either for good or ill" (Gibson 1979, 127). Affordances have also been described as 'action possibilities' in the environment.

> [A]ffordances can be thought of as possibilities for action. Affordances are detected by a goal-driven agent as they move about in an 'information field' that results from the working of their senses in concert with their body movements. (Young 2001, 171)

Examples that are often used to illustrate the concept of affordances are buttons, knobs, handles and levers that each invite different actions (pushing, turning, pulling, sliding). But the concept of affordances is also a useful concept in other areas such as learning design (e.g. Conole and Dyke 2004 a, 2004b) and education (Kirschner 2002, Salomon 1993).

> *Educational affordances* are those characteristics of an artifact […] that determine if and how a particular learning behavior could possibly be enacted within a given context (e.g., project team, distributed learning community). Educational affordances can be defined […] as the relationships between the

properties of an educational intervention and the characteristics of the learner. (Kirschner 2002, n.p.)

In the context of computer-mediated communication, affordances have been defined as "the constraints and possibilities for making meaning" (Hampel 2006, 11). Computers – both hardware and software – can be seen as devices with particular educational affordances that offer the users possibilities for learning, including communication and interaction specifically in the context of language education.

The aim of this chapter therefore is to examine the role of linguistic and non-linguistic modes of communication for meaning-making in online environments and to look at what difference it makes to use online tools rather than f2f classroom artefacts in educational contexts and what the impact is on language learning and teaching. To do so, it focuses on the following questions:

1. How do modes of meaning making compare across f2f classrooms and online environments? What tools are used and for what language learning purpose?
2. What are the affordances of online learning spaces for language learning and teaching and what are the implications of this regarding interaction and collaboration, classroom discourse, and socioaffective issues and community building?

Although the focus is on the subject of languages, much of what is said in this chapter is also applicable to other educational contexts.

2.   Modes of communication in online environments

Before examining online environments specifically, it is useful to reflect on the available modes of communication, and think about how these contribute to mediating learning and how tools are used in this process. The various modes for making meaning that are relevant in this context are written and oral language, visual representation, audio, gestures, and space (Cope and Kalantzis 2009, 178-9). These make use of a number of sensory modalities which include the following:

- printed words
- speech

- images
- music and sounds
- touch, smell and taste
- movement, gaze, facial expression, clothing
- spacing, layout and architecture

Making meaning is not immediate but tools have to be used in a process of representation and mediation, tools such as the human body, or physical tools such as pens or computers. The body not only mediates written and spoken language but also non-linguistic communication, in terms of voice (volume and intonation), gesture, touch and smell. Physical devices in a traditional learning context include tools such as the pen, blackboard, books and images. Adding a computer to communicate also means adding another layer of mediation through computer hardware, computer software as well as the particular architecture of the environment. As Flewitt et al. (2009) comment, text and context become indistinguishable, with both being used to make meaning.

Both conventional f2f classrooms and virtual learning spaces are complex environments with numerous affordances for communication. However, both learners and teachers tend to be familiar with the material characteristics of a physical classroom environment, where spoken language tends to be the main communication mode (often dominated by the IRF pattern of interaction consisting of teacher initiation, learner response and teacher feedback). This is supported by written language (blackboard, interactive whiteboard, books), paralinguistic cues (e.g. body language, intonation) and extralinguistic props (e.g. images, objects). In contrast, interactive virtual learning spaces – which come in a variety of shapes and forms (from written forums to virtual worlds) – have much less of a history for teaching purposes, and users are thus less familiar with the various functionalities of the tool and its affordances for communication and interaction in the language 'classroom'. When we look at the online tools that are available today, it becomes clear that there has been an increase in multimodal communication (Kress & van Leeuwen 2001) as well as a shift in modes, with written (and often asynchronous) communication taking over some of the functions of spoken language (e.g. interaction).

Increasingly important are modes of meaning other than Linguistic, including Visual Meanings (images, page layouts, screen formats); Audio Meanings (music, sound effects); Gestural Meanings (body language, sensuality); Spatial Meanings (the meanings of environmental spaces, architectural spaces); and Multimodal Meanings. (New London Group 1996, 80)

Table 1 examines the differences in more detail, comparing the various modes for making meaning that are available in f2f classrooms and in virtual classrooms, illustrating how these modes manifest themselves materially, and highlighting the tools that are needed for communication to take place. In f2f interaction, communication in the main takes place through the body (verbal language – e.g. voice, ears; body language – e.g. face, hands), but there is additional mediation through physical artefacts such as books and pens. However, the table clearly shows the additional level of mediation that is introduced in digital environments, through tools such as mouse, keyboard, webcam, applications, icons, and emoticons. Thus the body is being extended to include computer and software, and typing and using a mouse become all-important.

Environment / Modes for making meaning	Tool use and *purpose* in f2f language classrooms	Tool use and *purpose* in virtual learning spaces	Examples for online environments
Written language (writing and reading)	Body, pen, blackboard, book *To record receive information; to provide/receive input and output; for interaction (but limited)*	Body, computer, digital writing tools *To record / receive information in writing; to provide/receive input and output; **often for direct interaction***	Email, forum, blog, wiki, text chat (self-standing or integrated into a more complex environment), virtual world, social networking tools
Oral language (live/recorded speech and listening)	Body, audio recording *To produce/receive input and output; for interaction*	Body, computer, audio tool, microphone, speakers (speaking); audio file, software, speakers (listening) *To produce/receive input and output; for interaction*	Audio conferencing, video conferencing, virtual world
Visual representation of text e.g. colour, capitalization, underlining, paragraphs, headings	Body, pen, book, blackboard *To structure information; for emphasis*	Body, computer, formatting tools *To structure information; for emphasis*	Almost all

Still and moving images	Body, pen, picture, video *To create/provide visual input to complement language use*	Body, computer, application, emoticons, drawing tools, digital images, video, avatar *To create/provide visual input to complement language use; for turn-taking, emphasis (e.g. icons)*	Most environments (icons and images) video conferencing, online environments such as forums or blogs that allow for video posting, virtual worlds (moving images)
Other audio representation e.g. intonation, voice volume, music, sound effects	Body, voice, recording *For emphasis, turn-taking; to complement language use*	Body, computer, application with audio features, microphone, speakers *For emphasis (intonation and voice volume); for turn-taking (sound effects); to signal incoming messages etc. (alerts); to complement language use and visual effects*	Audio conferencing, video conferencing, virtual world
Tactile and olfactory representation e.g. touch, smell	Body, objects ***To support interaction with others***	Body, computer, keyboard, mouse, simulation of touch in certain environments *To operate the computer (touch)*	All (touch to operate the computer), virtual world and other specialist environments (simulated touch)

Gestural representation e.g. hand and arm movements, posture, gaze, facial expression	Body *For turn-taking, emphasis; to support interaction*	Body, computer, audio/video tool, webcam *For turn-taking, emphasis, social interaction (but very limited)*	Audio conferencing, video conferencing, virtual world (via avatar)
Spatial representation e.g. proximity, spacing, layout, interpersonal distance, architecture	Body (in relation to others), seating arrangements, classroom furniture, blackboard *To support learning and interaction*	Body, computer, application, grouping facilities (conferencing), structuring of messages (e.g. threading, order in forums), nesting of pages (wikis), simulated environment (virtual worlds) *To structure communication; for social interaction (but limited and very dependent on environment)*	All (but in very different ways)
Multiple modes	All	Depending on software	N/A

Table 1: Modes for meaning-making in face-to-face classrooms and online learning spaces and the use of tools for language learning. The use of bold in columns 2 and 3 indicates essential differences between f2f and online learning environments.

So although the modes of communication in online settings continue to be the same as those in f2f environments, there are fundamental differences, with communication in online learning spaces being characterized by an additional layer of mediation through the computer generally, the material characteristics and specific functionalities of the

tool, and the specific combinations of modes that the tool provides. The key implications for communication and learning are as follows.

Verbal language (written and oral) in online learning spaces is mediated by an additional level of digital tools (keyboard, mouse, microphone/speakers, software).Writing online in itself usually does not pose serious challenges, provided that users can type and are familiar with the software. Speaking online may be a little more demanding – especially when it takes place in groups. In some environments users have to press a button to start (and stop) speaking; and there may be turn-taking tools. However, the main challenge lies in the different purpose that writing has come to assume in online environments. Writing in a f2f classroom tends to be used for recording or presenting thoughts, new vocabulary and other information, whereas in an online environment it is often used for interaction. Using written language via a computer to interact is a very different way to communicate, mediated by a whole panoply of tools rather than one's body alone. This increases the cognitive demands on the learners who have to rely on their hands rather than their voice and who are required to multitask to a greater extent.

The visual mode can be used alongside the linguistic modes, e.g. to mark written language for emphasis (using colour, bold or different fonts) or to structure it. Icons – i.e. pictograms which mark possible actions or intentions such as expressing one's willingness to speak, or emoticons such as smileys – are common in most digital environments. To be able to employ these successfully, the user has to know what the various icons mean and be aware of what the impact is of using them on other people. Certain virtual environments allow users to create or upload their own still or moving images; others such as virtual worlds are very visual themselves and simulate reality. It is generally accepted that non-verbal systems such as **body language (tactile and gestural)** are a crucial part of communication and that often they are difficult to distinguish from verbal systems (Knapp & Hall 2010, McNeill 2000). Yet much online communication via forums, chat, Skype or Facebook takes place without gestures and facial expression and often without intonation, and greater strain is put on verbal modes to compensate for the lack of non-verbal cues. Even in video conferencing it is difficult to communicate via body language. The camera tends to transmit the user's face rather than their whole body, and their gaze is normally directed at the camera which is located above where somebody's eyes would be. Because of transmission delays, there is also a lack of synchronization between audio

and body language (e.g. lip movement, facial expression). Beyond being used for operating the computer, touch can only be simulated in certain complex virtual environments.

In some virtual environments, **space** is flat and two-dimensional; others make use of three-dimensional architectural metaphors ('rooms' in the audiographic environment Lyceum, a whole world in Second Life with islands, cities and buildings). Nevertheless, online space is fundamentally different when compared to a f2f learning setting, for example, in terms of how language is presented, how space is arranged (as a simple list of messages in a forum or as a complex virtual world), and how users are represented in relation to each other (as static names in a list or embodied moving avatars in a virtual world).

The table thus shows that although most modes of representation can be replicated in digital environments, a fuller panoply of multiple modes of communication is only available in more complex spaces such as videoconferencing or virtual worlds. It is easier in online environments to allow for verbal language than for body language (tactile and gestural representation); for the latter, more sophisticated environments are needed. In contrast, audio and visual representation for meaning making through audio and visual resources is less problematic on a computer, and many environments also provide functionalities for formatting text, including images and using audio effects.

This suggests that although online environments are able to provide opportunities for input, interaction and output, thus supporting second language acquisition, they are less effective in allowing for gestures, facial expressions, or touch – all of which, however, are part of communication – especially in terms of socio-affective aspects.

1. **Affordances of online environments for learning and implications for language learners and teachers**

The previous section compared the available modes for making meaning in f2f classrooms and online environments and examined what kind of tools would be needed (from the body to physical artefacts such as the computer) and how this would contribute to language learning. This section explores some commonly used types of learning spaces, their affordances and the implications for language learners and teachers. With technology changing constantly, the aim here is not to examine the

affordances of specific online environments. Instead, Table 2 provides an overview of various ways in which certain online tools can support or inhibit particular language learning possibilities.

Asynchronous spaces (e.g. email, forums, blogs, wikis)	
+ Written communication and interaction across space and time + Independent of time constraints + Generally monomodal but written communication can be augmented by images, emoticons etc. for socio-affective purposes, community building etc. + Not ephemeral, can be revisited + Useful for rehearsing spoken language + Suitable for telecollaborative contexts, especially across time zones	- Lack of gestural, spatial and possibly temporal proximity - Fewer communication channels available (e.g. lack of spoken or body language) - Can be anonymous
Written synchronous spaces (e.g. written chat)	
+ Written communication and interaction across space + Telecollaborative contexts within time zones + Not ephemeral, can be revisited + Written communication can be augmented by emoticons etc. (for socio-affective purposes)	- Lack of spatial proximity - Subject to time constraints - Fewer communication channels available (e.g. lack of spoken or body language) - Turn-taking not regulated, conversations often not threaded
Multimodal synchronous spaces (e.g. audio-/videoconferencing, virtual worlds)	

+ Written and spoken communication and interaction across space	- Lack of spatial proximity
+ Video conferencing: some body language and other paralinguistic features to enhance communication	- Subject to time constraints
	- Can be ephemeral if not recorded/recordable
+ Virtual worlds: avatars to simulate face-to-face interaction	- Turn-taking not straightforward
+ Some (educational) environments support turn-taking	- Often various permission levels which can limit full learner access (and control)
+ Sometimes access to logs / recordings	- Some environments are public and open to anybody
+ Support multimodal communication	- High levels of literacy required
+ Often support grouping learners and small group work	- Good connectivity needed
+ Can support joint activities (e.g. web-browsing)	
+ Suitable for telecollaborative contexts within time zones	

Table 2. Ways in which online tools can support or inhibit particular language learning possibilities

The fact that mediation in online communication is more complex and that communication is dependent on the characteristic functionalities of the tool and the particular modes that the tool provides means that there are certain implications for learners and teachers. As this article is examining online environments for communication in the context of language learning, the focus will now be on the potential and the challenges in three areas, namely of interaction and collaboration, discourse (i.e. language itself), and socioaffective issues and community building.

Interaction and collaboration

The potential of digital environments for interaction and collaboration has already been mentioned and is particularly important in the context of language learning. It opens up opportunities for dispersed distance learners who can communicate with each other and with their teacher. However, online spaces – especially written-only environments – can pose challenges for grounding. Asynchronous conversations via

email or forums are often difficult to sustain (Stockwell 2003) while synchronous chat can make it difficult to discuss a topic coherently and in depth (Kern 1995). Smith (2003, 48) therefore proposes that a new model of negotiation of meaning is needed that allows for "the regular occurrence of split negotiation routines".

Telecollaboration across languages and often across countries gives learners the opportunity to develop their intercultural competence (Hauck 2010) and get linguistic feedback (Ware and O'Dowd 2008). At the same time, more traditional language learners can benefit by interacting with native speakers or experts outside the institution. Asynchronous environments in particular offer possibilities for working across space and time; in contrast, synchronous spaces can pose challenges when it comes to scheduling sessions across very different time zones. Many spaces allow for group work – using, for example, sub-conferences within video or audioconferencing environments or wikis to which multiple groups can contribute. Virtual worlds make group work particularly easy but also pose a challenge in that other people can intrude into a group setting. Difficulties in telecollaborative projects can also arise when technology brings groups together from very different social and educational backgrounds with incompatible expectations or irreconcilable differences, for example regarding assessment (O'Dowd 2006).

Discourse
The fact that many environments offer different combinations of modes and modalities – e.g. written language with visual elements, spoken language with written chat, or written and spoken language plus moving images – is likely to have an impact on discourse in the online classroom, changing the patterns that learners and teachers are familiar with (Hampel and Stickler 2012). Online environments such as wikis or videoconferencing applications can provide the space for synchronous or asynchronous multimodal communication, allowing for the combination of various modes (written language and images in a wiki, or spoken and written language plus still and moving images in videoconferencing).
However, some of these combinations are new, offering users the option to choose digital images to illustrate a wiki page, or type in the text chat when others are talking. Today's digital environments are not necessarily more multimodal or less so but the multimodality found is of a different type, requiring more symbolic processing

compared to f2f interaction where more communication takes place at a non-symbolic level (e.g. body language). Also the resulting discourse is often a novel one. Wikis, for example, are made up of individual contributions that are held together by headings and links and nested within a joint page; synchronous chat is often characterized by disrupted adjacency pairs (Negretti 1999), and audio or videoconferencing provide for novel forms of multimodal classroom discourse. The fact that text in chat or in a forum can be edited while it is being produced and that it is less ephemeral than a spoken exchange also has an impact on the resulting discourse (Sotillo 2000). In addition, the lack of body language in many online environments also has an impact on turn-taking which has to be negotiated with the help of different modes of communication (either using verbal signals or a turn-taking button if available). Even in video conferencing, the lack of lip synchronization can cause problems with turn-taking.

Online communication environments thus afford opportunities communication and negotiation of meaning – which is deemed crucial for language learning. However, they require new routines for learners to combine modes in new ways (e.g. audio and text chat or written language with images) to make meaning or use nonlinear forms of communication to construct knowledge.

Socioaffective issues and community building

Online space is fundamentally different when compared to a face-to-face learning setting. Being in an unfamiliar environment where communication takes place via a computer and often in writing and without body language can be disorienting for users and have social and affective implications – especially in those contexts where learners do not regularly meet face-to-face.

On the one hand, this additional mediation as well as the lack of body language can lead to greater anonymity and also cause greater anxiety generally and language anxiety in particular (de los Arcos 2010; de los Arcos, Coleman and Hampel 2010). It can take longer for learning communities to form as it can slow down or prevent impression formation amongst participants (Arispe and Blake 2012) or give rise to disruptive behaviour such as flaming (Warner 2004) – especially if interaction takes place across space as well as time and communication partners are not only physically far away but also not online at the same time. In asynchronous environments such as forums communication is often drawn out over days or even weeks, making it more

difficult to build relationships. When synchronous environments are used as online classrooms, there is often less opportunity for socializing before or after a session compared to a f2f class. In addition, many such environments do not offer private channels for users to communicate. Virtual worlds pose different challenges in that they offer a body in the form of an avatar – which however cannot be equated with the person who is manipulating the avatar, neither in terms of appearance nor of body language. On the other hand, online communication may be liberating and confidence-building, with students feeling less pressure and prepared to take greater risks and lowering their affective filter. As Arispe and Blake (2012) found with one of their learners, "[d]espite his poor course performance, he repeatedly acknowledged how much more comfortable he felt speaking in Spanish online as compared to in class because he felt relaxed and free to experiment (i.e. make mistakes)" (Arispe and Blake 2012, 457). This clearly shows how being online can have a positive impact on a learner's identity and self-image and increase motivation (Dörnyei 2005).

If body language is available in online environments, it is mediated by an additional level of digital tools (webcam, video image, software), rather than through the body alone (gestures etc.). In addition, modalities such as smell or touch which are non-symbolically processed are unavailable. All this makes greater cognitive demands. As mentioned before, the location of the camera (which usually is not in line with the interactant's gaze) can also have affective implications because it can suggest that the interlocutors are not focusing on each other (Austin 2012).

2. Conclusion

This chapter has examined the following questions:

1. How do modes of meaning making compare across f2f classrooms and online environments? What tools are used and for what language learning purpose?
2. What are the affordances of online learning spaces for language learning and teaching and what are the implications of this regarding interaction and collaboration, classroom discourse, and socioaffective issues and community building?

Although the modes of communication that are available to learners and teachers are similar in f2f classrooms and online environments, the additional mediation by

technology in online learning spaces means that conventionalized forms of linguistic and non-linguistic communication are being challenged. Body language, for example, is not as readily available as a means of online communication and if users want to communicate successfully, they have to use other modes of communication. Another example is written language taking over some of the functions of oral language.

A more detailed examination of the affordances of online spaces for language learning and teaching has highlighted a range of implications for learners and teachers. On the one hand the availability of online environments has the potential to bridge the distance between learners (or between learners and native speakers) and offer increased opportunities for interaction and collaboration. On the other hand, there are challenges such as mastering new forms of multimodal discourse. Multimodal communication using digital media can be cognitively challenging, especially when it takes place in still relatively unfamiliar environments and involves additional mediation compared to face-to-face interaction. Also, students and teachers have to learn to deal with socio-affective issues, particularly in written-only environments where community building tends to be more challenging than in a f2f classroom.

As Levy and Stockwell (2006) and others have argued, successful online learning "depends on having clear pedagogical objectives in mind, knowledge of the technological options and an awareness of the needs, goals and skills of the learners" (Levy and Stockwell 2006, 107). Equipping teachers with the necessary skills as well as helping learners to develop new literacy skills are crucial to ensure that the new learning spaces are used to their full potential. It is often assumed that teachers can easily learn about the digital media themselves and that they are able to transpose the activities they use in their f2f classes to online contexts without any specific training. Similarly, the assumption is that many students today are familiar with online environments – including conferencing (such as Skype) and social networking tools (e.g. Facebook). However, while it makes sense to build on the literacy that learners have already developed, using an online space for learning is different to using it for leisure purposes, and students develop cultures-of-use around tools which may clash with the use that a teacher envisages in the context of an educational activity (Thorne 2003). Key literacy skills for online language learners comprise typing skills, technical expertise (including using a microphone and webcam, if needed), information literacy (in terms of searching for information and evaluating search

results), communication skills (e.g. using turn-taking tools or emoticons), and language skills (reading, writing, listening and speaking).

Successful online communication in language learning contexts also has to do with task design. Tasks need to be appropriate to the environment, and it is crucial that activities that make use of digital environments take account of their functionalities and affordances (Hampel 2006). Related to this is teacher training; teachers today have to possess certain skills to be able to deal with the technological opportunities on offer. This includes the technical competence but also the ability to use the new media to promote learning in a reflective and critical way (Beaven et al. 2010; Hampel and Stickler 2005).

This chapter has considered the use of technology and its implications for meaning-making in the context of language learning and teaching. To conclude, I would propose that it also needs to be considered in a wider pedagogical context, that of multiliteracies as initially outlined by the New London Group (1996) and added to by Cope and Kalantzis' (2009, 187) (see table 3)..

New London Group (1996)		Cope and Kalantzis (2009)
Situated practice	Immersion in experience and the utilization of available discourses, including those from the students' lifeworlds and simulations of the relationships to be found in workplaces and public spaces.	Experiencing … the Known … the New
Overt instruction	Systematic, analytic, and conscious understanding. In the case of multiliteracies, this requires the introduction of explicit metalanguages, which describe and interpret the design elements of different modes of meaning.	Conceptualizing … by Naming … with Theory
Critical framing	Interpreting the social and cultural context of particular Designs of meaning. This involves the students' standing back from what they are studying and viewing it critically in relation to its content.	Analysing … Functionally … Critically

Trans- formed practice	Transfer in meaning-making practice, which puts the transformed meaning to work in other contexts or cultural sites.	Applying … Appropriately … Creatively

Table 3. A pedagogy of multiliteracies

If we follow this approach, *successful* online teaching would be characterized by (1) getting learners to use digital media (familiar as well as new ones) to interact and collaborate with each other, (2) raising their awareness of the differences that using new technologies can make, (3) interpreting the implications for meaning-making and communication, and (4) encouraging students to transform their practice. However, we need to be prepared that one of the consequences of this may be that 'what we conceive of as learning will be somewhat different when our communicative practices change' (Säljö 1999, 145).

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