

**Learning through online communication:
Findings and implications from second language research**

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The potentials of elearning are likely to be explored for many years to come in view of some of its obvious logistical benefits for learners and apparent financial incentives for institutions. One would hope that such exploration of teaching practice would have a parallel research program to investigate the nature and effects of dialogue and communities of enquiry in elearning in higher education. The common sense approach to this issue is to compare outcomes of elearning with those of classroom learning, but this approach has proven to be too simplistic to satisfy those attempting to understand the characteristics and potentials of elearning. As Garrison and Anderson (2003) put it, “Why would we expect to find significant differences if we do exactly the same thing [in the two modes of learning]...?” (p. 6). They conceptualize the changes prompted by elearning as more radical than what can be captured through assessment of outcomes and comparisons with outcomes from classroom learning. At the core of the issue, in their view, is that education is about ideas not facts, and that elearning provides more than access to information; it affords opportunities for communication and interaction. But how does one assess how well learners are formulating ideas through communicative interaction in elearning activities?

Garrison and Anderson argue that the quality of student assessment rests in the use of a variety of measuring devices, and that some of these need to assess the quantity and quality of learners’ participation and contribution in online discussion. This perspective is consistent with the views of those who study second language (L2) learning through technology. The L2 research additionally emphasizes the specific linguistic character of learners’ interactions, which in some studies have been evaluated in view of ideals for communicative language use. I will review the questions that L2 researchers have developed to investigate online learning. The studies are mostly exploratory and the findings are not clear-cut but they do suggest implications for research on learning through online communication.

L2 Research Questions & Findings

Do students learn an L2 better through online communication than they do in traditional classrooms? In L2 research, like in other areas, a simple answer to this

question has proven to be elusive. Researchers in applied linguistics who are concerned with technology have argued for years that such comparisons fail to yield results that provide insights and recommendations about the use of technology for L2 teaching. Instead, researchers have reframed the question and generated new ones about technology and language learning in general and online communication more specifically. The questions that have focused research on L2 learning through online communication can be divided into three types—descriptive, evaluative, and critical—as summarized in Table 1. Table 1 defines these three perspectives with examples of research questions and analytic approaches to data analysis that fall into each type. Examples of studies are included in the right column.

Table 1 Summary of L2 research on learning through online communication.

Analytic Perspective	Research questions	Analytic approach to data analysis	Study
Description	What is the nature of interaction in elearning?	Discourse analysis of functions; Applied conversation analysis	Chun (1994); Negretti (1999)
	How do learners engage in language play in MOO?	Discourse/content analysis	Warner (2004)
Evaluation	Can negotiation of meaning or other language related episodes occur in online communication?	Discourse analysis of negotiation sequences	Blake (2000); de la Fuente (2003); Garcia & Arbelaz (2003); Lee (2001); Kitade (1999); Lamy & Goodfellow (1999); Pelletierri (2000)
	How are topics nominated and sustained?	Discourse/content analysis of final exchanges	Stockwell (2003) Schwienhorst (2004).
	How good is written CMC as rehearsal for oral communication?	Discourse analysis and word counts	Weininger & Shield (2003)
	Is there evidence for emergent grammatical competence in online communication?	Logitudinal microanalysis of discourse (referred to as microgenetic)	Belz (2004); Salaberry (2000)
	Can pragmatic competence be developed through online communication?	Microanalysis of discourse (referred to as microgenetic)	Belz & Kinginger (2003); Kinginger (2000)
	Is intercultural competence be enhanced through online communication?	Post-task interviews with participants; Discourse/content analysis of appraisals	O'Dowd (2000); Belz (2003)
Critical analysis	How to the learners' meaning and use of online communication tools construct their learning experience?	Content analysis and other observations	Thorne (2003)

Description

Descriptive research attempts to characterize the nature of the interactions that learners engage in through online learning. In studies of instructional technology, descriptive research has played an important role (Knupfer & McLellen, 1996) because of the need to attempt to understand the new forms of interactions afforded by the medium. With respect to online communication in L2 learning, the data analysis is accomplished through discourse analysis or conversation analysis to reveal the nature of interaction, or more recently, the way that play is accomplished.

The nature of interaction

The methodologies used for description of interaction fall within the broad set of techniques called discourse analysis which refers to a family of analytic approaches that take functional perspectives toward the linguistic choices and moves that the participants make to construct a text. The best known example of discourse analysis from classroom research is Sinclair & Coulthard's (1975) study of classroom talk, which identified the functional sequences of initiation, response, and follow-up (IRF). From a discourse analytic perspective, one can study the language of online collaborative learning to discover the extent to which the discourse structures found in classrooms are evident. Today researchers studying L2 classrooms would argue that the ideal is for learners to engage in other types of discourse functions, and therefore the discourse analytic research on elearning has tended to seek evidence for the use of a variety of discourse functions.

Analysis of functions. The first significant descriptive study of language learning through online communication was conducted by Chun (1994), who identified in learners' language a number of interactional speech acts, for example, asking questions and requesting clarifications, when she investigated the functions used by first-year German learners in computer-mediated communication in the classroom. This and other studies have concluded that online communication is valuable for language practice on the basis of the amount of communication that learners participated in enthusiastically. The implicit comparison is with learners' oral language in the classroom, although except for Warschauer (1995/1996), comparisons were made intuitively. The overwhelming majority of the descriptions of interactive written classroom discourse conclude with the positive finding that the written interactive medium promotes relatively large amounts of participation and that learners practice a variety of communicative language use (Kelm, 1992; Beauvois, 1992; Warschauer, 1995/1996; González-Bueno, 1998; Kern, 1995; Ortega, 1997). This is an important claim in view of the essential role of meaning-focused linguistic production for L2 learning.

Conversation analysis. Conversation analysis is a specific microethnographic approach sometimes placed within the broad umbrella of discourse analysis. Conversation analysis attempts to capture how language users' utterances accomplish communicative intent and social action through conversation. In practice, it is sometimes difficult to distinguish between the range of practices that are included under discourse analysis and the more specific method of conversation analysis. However, in

one study of ESL learners in a text chat, Negretti (1999) identifies her method of analysis of data from written online chat communication as conversation analysis with the following rationale:

Given the present state of [second language acquisition] research in Internet-based environments and computer-mediated communication, a heuristic-inductive approach such as CA is the most useful and fruitful because such a hypothesis-generating method is a good way to begin the study of new interaction/acquisition situations. (Negretti, 1999, p. 76)

Rather than beginning with functional categories such as asking questions and expressing agreement, Negretti's description discovered the conversational routines that the learners used for openings, closing, topic shifts, and cohesion, for example. In other words, the conversation analysis used in this study served as a means of describing language practices. Detailed examination of the play-by-play deployment of social interaction in a virtual environment is described in a conversation analytic style is also provided by Roed (2003), who emphasizes the importance of psychological factors associated with willingness to communicate (MacIntyre, Baker, Clément, & Conrod, 2001). Both of these studies suggest how communication and social acts are accomplished in the new forum for L2 communication offered by synchronous text-based electronic communication.

Play

A more specific focus was directed to data gathered over the course of a one semester project to better understand the use of MOO as a supplement for a communicative language class (Warner, 2004). The questions were exploratory, but they focused on playful use of language in the MOO: What types of play do students use? When and how does play appear? Warner examined four sessions for an intermediate communicative German course and two sessions from an intermediate conversation course. She also interviewed the instructors, and asked the the students to comment on their language use as they examined the transcripts of the MOO sessions.

The analysis highlighted instances of play appearing in the transcripts by seeking examples of three categories of play from prior theory and reserarch in L2 acquisition: 1) play with the linguistic form such as rhyming, making parrallel structures, and repeating, 2) play with content or concepts such as inventing new things or combinations through language, and 3) play with the frame such as what can be done when the speaker takes on a differnet role or adopts a positioning that has already been taken up in previous utterances. Having found such instances in the data, Warner concluded that this imaginative use of language in the chat suggested the need to expand the scope of what is considered interesting and important in such transcripts beyond referential communication used to accomplish a clear goal. Warner argued that

... greater attention must be paid to playful elements in language use that are not limited to the linguistic form. Students in the German classes were

not simply playing with the language, but playing *within* the language. In such instances, it is not primarily meaning that is being negotiated, but also the relations between speakers, their interlocutors, the medium, and the context. What's more, they are negotiating their relation to a foreign language, which to them feels in some ways inauthentic and, as one student noted, like "just a game." (Warner, 2004)

These descriptive studies all describe some aspect of the online communication with the implicit intent of evaluating the quality of the learning tasks, but the following studies are more explicit about specifying the value of the target aspects of the performance.

Evaluation

Evaluation research seeks evidence for language learning from online activities. Rather than beginning with open questions about how dialogic interaction is constructed, it begins with assumptions about how learning might take place and what evidence would indicate that positive learning episodes are occurring. Evaluation is a challenge for those wishing to study online L2 learning for at least these three reasons (Chapelle, 2003):

- Online learning is typically used as one of many forms of language practice for learners in a larger program of instruction and out of class activities, so the idea that learners would learn the language exclusively from the online activities the teacher constructs is at odds with the reality of the situation.
- Learners, not teachers, select the linguistic points to be the focus of attention in communication tasks, and therefore pre-planned assessment of acquisition of particular linguistic points is not feasible.
- Evaluation that genuinely informs software developers, teachers, and learners about how to better learn through technology requires delicate analysis of the process of learning.

In view of these challenges for evaluation of L2 elearning, researchers have sought evidence for learning by focusing on key aspects identified in L2 acquisition theory and research.

Negotiation of meaning

Several studies of learners' use of online communication for L2 tasks have evaluated the quality of interactions by relying on interactionist SLA theory (e.g., Pica, 1994; Gass, 1997) which hypothesizes benefits from interaction in which communication breakdowns occur and learners have to negotiate meaning (Long & Robinson, 1998). Example 1 comes from such a study in which the researcher recorded the conversation of two learners communicating over voice chat on the Internet (Sauro, 2001). The key

episode begins in the third turn where the ESL learner signals a lack of comprehension of the interlocutor's message. The "pardon" prompts a modification in the form of a simplification, which appears to be understood. The process of misunderstanding, stopping and obtaining a message that can be understood is hypothesized to be beneficial for L2 learning, and therefore such sequences are the objects of interest to the researcher.

Example 1: Negotiation of meaning

- Sumiko: Alright. So about our friend Harry.
Andy: Yeah, I'm a little concerned about him. I don't know, I'm a little concerned about him. I think he should take some leadership courses so he can gain some confidence. It looks like he's got a choice. He's interested in either Stanford or MIT.
Sumiko: Pardon?
Andy: It looks like Harry is interested in Stanford and MIT.
Sumiko: Yeah.
Andy: I don't know exactly how much you know about Harry, but I do know some things about Harry. And ah, I think he's got a great personality, but ah he's got himself some challenges to deal with. He's having a difficult time trying to pick a university to, to study at. And, ah, I do know some things about him. Maybe if we work together on this problem, we go ahead and solve the issues, maybe we can give a recommendation to Harry. (Sauro, 2001)

A study by Blake (2000) drew on the same theoretical perspective in the analysis of text chat data. Fifty intermediate learners of Spanish were assigned several different types of communication tasks that were designed within the guidelines of research investigating face-to-face tasks for L2 learning (Pica, Kanagy, and Falodun, 1993). Blake assigned jigsaw tasks (requiring learners to piece together a solution with information they did not share) and decision-making tasks (requiring learners to make a decision based on shared information). The jigsaw task features, concerning who has what information and what the communication goal of the task is, for example, are supposed to be conducive to the negotiation of meaning, and results were consistent with expectations: Negotiation of meaning was observed.. Consistent findings were obtained from a study in which tasks were designed the same way but each pair of learners consisted of one heritage speaker of Spanish and one learner of Spanish (Blake & Zyzik, 2003).

Other research provides cause for tempering enthusiasm about the value of online communication as a forum for fostering negotiation of meaning. Lee examined the communication strategies evident in language produced during online conversations among forty learners of Spanish, who were either majoring or minoring in Spanish at a university in the U.S. Students were organized into groups of three or four containing a mix of language proficiencies. They were given extra credit for participating in open ended discussions that were initiated by a topic provided by the researcher such as

Halloween or Thanksgiving. “The impact of responding to negative feedback or incomprehensible messages proved to be meaningful for learners because it allowed them to try out different vocabulary and language structures in order to modify input and output. The modified interactions, therefore, facilitated mutual understanding. In terms of linguistic accuracy, [however,] learners tended to ignore each other’s mistakes and moved on with the discussions. This shows that students focused on the meaning of the communication rather than on the form itself” (Lee, 2001)

Whereas the studies discussed above quantified the instances of negotiation of meaning evident in the data from chat tasks, two recent studies have compared the amount and effects of negotiation of meaning in chat with that appearing in a comparable task carried out through face-to-face interaction. García and Arbelaiz (2003) compared the negotiation of meaning that occurred through face-to-face communication vs. written online communication in L2 tasks. They found that more communication breakdowns occurred in face-to-face communication in part due to the difficulty in perceiving the oral language. The written mode of communication facilitates comprehension precluding the need for the use of repair strategies. De la Fuente (2003) found “that both face-to-face and CM, text-based interaction, where learners need to negotiate the meaning of target words, seem to be equally effective in promoting written receptive and productive acquisition and retention of L2 vocabulary.

Other studies drawing on a similar theoretical orientation are concerned with a variety of exchanges that indicate that learners are paying attention to the language in a way that directs their attention to gaps in their interlanguage knowledge. Such language-related episodes (Swain, 1998) are hypothesized to be useful for language development. Kitade (2000), for example, analyzed transcripts from the chat sessions of Japanese learners, finding instances where the learners had noticed and corrected their errors, either because they had recognized the errors themselves or because other chatters had pointed out the errors to them. In addition to this type of productive repair, she also found negotiation of meaning, concluding that the use of Internet chat with “task-based L2 interaction facilitates comprehensible and meaning-making interaction, awareness raising, as well as collaborative learning (p. 162). She attributes these positive attributes of the communication to the fact that learners do not have to compete under time pressure for turns in the conversation. Instead, they can compose and post their messages at their own speed. Lamy & Goodfellow’s (1999) construct of “reflective conversation”—online discussion among learners about language and language learning—seems to get at the same idea of putting the language under the learners’ direct attention. They contrast social conversation which requires little negotiation of meaning or stretching of competence.

Nominating and Sustaining Topics

Several studies by Stockwell and colleagues have attempted to identify factors that may affect the sustainability of email communications between native and nonnative speakers. The idea is that in order to be valuable as language practice for nonnative

speakers, online communication needs to occur for an extended period of time and that learners need to be actively involved by initiating topics.

Stockwell (2003) focused on characteristics of the final message in an exchange between native and nonnative speakers. The email exchanges took place between 48 students at an Australian university and 34 students at a Japanese university. The Australian students were advanced learners of Japanese and the students in Japan were studying crosscultural communication. The teachers in the two courses set the topics (e.g., dinning out, dating and socializing) but told the students that they could move beyond those set topics. Students were asked to write four to five emails in Japanese per week over a five-week period. All the emails were stored and the topic threads were analyzed to identify messages that marked the end of the thread. In 70% of the cases, the topic thread ended in a manner that the researchers characterized as natural, meaning that “no reply or request for further information was invited in the final message of a topic thread” (Stockwell, 2003, p. 40). The majority of the remaining 30% of the topics, ended with a message that contained multiple topics in one e-mail (n=163). Other reasons were the following: sudden cessation due to assigned topics (n=93), lack of explicitness (n=84), syntactic error (n=34), asking about a questioned already answered (n=16), pragmatic error (n=8), topic closed by one speaker (n=4), unknown (n=90).

Schwienhorst (2004) examined the extent to which topic initiation was shared between native speakers and nonnative speakers in synchronous communication in order to obtain evidence about how topic initiation and maintenance is similar to or different from these discourse patterns in classroom conversation. The comparisons were made based on findings from previous research on oral face-to-face tasks and the chatscripts recorded during collaborative tasks performed by native speakers of German and learners of German. Findings indicated an equal sharing of topic initiation moves.

Quality of Language as Rehearsal.

Weininger & Shield (2003) evaluated the extent to which the discourse constructed through a written mode can be considered valuable to L2 learners as rehearsal for oral communication. Their assumption was that similarities in language use in MOOs and that used in spoken registers as reflected in the use of pronouns, greeting forms, and conversational particles (e.g., “humm”) would indicate that MOO was good as rehearsal for oral communication. Based on quantitative analysis of data from L2 learners’ MOO chatscripts, native speakers’ chatscripts, a large corpus of written language, and a large corpus of spoken language, the authors concluded that the similarities between MOO and oral language were sufficient to pursue the use of MOO as rehearsal. For example, the ratio of 1st and 2nd person pronouns to 3rd person pronouns is higher in oral language (1.97) than it is in written language (.46) because in conversation it is more typical to talk in terms of *you* and *I*, whereas in written language one is more likely to read about *he* and *they*, for example. In the MOO chatscripts of both native and nonnative speakers, the ratio is also high, in fact, even higher than that of the oral

language (4.28 for NNS and 4.57 for NS). The criteria for “similarity” is obviously open to further discussion.

Emergent Grammatical Competence

Belz’s (2004) study described a learner’s use of a grammatical construction, the da-compound, in German over the course of a semester of German study. Da-compounds, which are used to create cohesion within and across sentences, are considered to reflect an advanced level of proficiency in German, and therefore the development of ability of this linguistic device is worthy of examination across time. Belz examined a 100,000-word corpus of telecollaborative correspondence through a microgenetic analysis, which “traces the history of development of particular phenomena (e.g., the appropriate use of a particular grammatical structure) through close examination of its ecology of use in a given task” (Belz, 2004). The students spent at least two hours in telcollaboration over an eight week period. The findings demonstrate the qualitative process of microgenesis of a construction over time through the telcollaboration. The perspective taken is that this emergence of grammatical competence in use is something that one necessarily has to see over the course of communication with competent interlocutors, which practically speaking could only occur through the type of extended dialogue engaged in by the learners in this study.

Table 2. Summary of the stages of emergence of da-compounds for learners on German working in telecollaborative tasks.

Stage	Use of da-compound	Example	English Translation
1	In formulaic expressions	Was denkst du darüber?	What do you think about that?
2	For anaphorical reference of nominal or prepositional phrases	<Previous text is about growing up in Germany> Wie war deine Kindheit darin?	How was your childhood there?
3	Cataphoric uses	Sie macht sich nicht daraus wenn du das letzte Stück nimmst.	She will not mind about that—if you take the last piece.

The da-compound presents a different learning challenge from the morphosyntactic construction that was analyzed by Salaberry (2000). Based on his comparison of development of the morphosyntactic construction of present tense verb inflections in oral face-to-face vs. written chat interactions, Salaberry concluded that the written conversation is more effective because the distinctions among verb forms are more salient in written exchanges than they are in oral communication. This finding is consistent with Pellettieri’s (2000) findings that learners negotiated *form* in addition to negotiating meaning in text chat tasks similar to those used in Blake’s (2000) study. Presumably these Spanish learners were able to focus on the details and the correctness of the morphosyntax that they had studied when they were not operating under the pressure

of face to face communication and the elusiveness of oral language. In other words, the written interactive communication unique to online learning appeared to offer an advantage for learning particular aspects of language.

Development of pragmatic competence

Pragmatic competence refers to the knowledge that allows speakers to make linguistic choices that are appropriate in view of the context in which they are using the language. Context includes the person or people to whom the language is addressed. Pragmatic competence presents a different type of challenge to language learners than does development of grammatical knowledge because the “rules” for deciding on appropriate language are different than those associated with grammatical competence. Typical classroom discourse such as that characterized by the IRF routine is not a conducive to development of pragmatic competence because of the lack of variety in the social contexts present in the classroom (Kasper, 2001).

Whereas grammatical competence can be learned and practiced to some extent through communicative classroom activities, pragmatic competence is better developed with some access to opportunities to interact with a variety of interlocutors, from whom learners are able to observe appropriate linguistic choices of pragmatic options and receive assistance. Belz and Kinginger (2003) and Kinginger (2000) reported on the analysis of data from a study of the German-English telecollaborative teams who communicated with each other over a two week period during the overlapping segment of their language classes. The students in Germany were preparing to be English teachers, and the students in the U.S. were 14 undergraduates in fourth-semester German classes. The students were required to engage in telecollaborative consisting of first, exchanging introductions and personal information through email, second discussing through synchronous and asynchronous communication readings and films that access to in parallel forms, and third, constructing Web sites showing comparisons of their interpretations.

The data that were collected demonstrate the development of pragmatic competence in the choice of the formal vs. the informal variety of the word “you” in French and German. As shown in Example 2, the English speaker uses the formal form of you, “vous” to say “But sometimes I would like to write in English for you.” The French speaker, who is also a student of the same status as the English speaker responds, “I’m 21 years old, so therefore you should say “tu” [familiar “you”] to me.”

Example 2

English speaker: “Mais, quelquefois, je voudrai ecrire en anglais pour vous...”

French speaker: “J’ai 21 ans, aussi, donc TU dois me dire “TU.”

(Kinginger, 2000, p. 36)

The researchers point out that this pragmatic use has certainly been taught in the classroom, but without the real need to use the appropriate forms in order to keep from offending the interlocutor, this pragmatic choice is not mastered in the classroom. In contrast, “The long-distance relationships formed by students offer contexts for language socialization, with support for conscious awareness of, and assisted performance in the appropriate uses of the second-person pronoun (tu vs. vous)” (Kinginger, 2000, p. 23). The data from the weeks of collaborative work of the Americans with the Germans and with the French demonstrate many instances of help such as the one shown in Example 3 and they also demonstrate that most learners improved dramatically in this area.

Intercultural competence

Intercultural competence, which is one goal of most L2 teaching, seems to be something for which online distance collaborations would be ideal. Examples of two studies investigating the value of such communication used different methodologies for evaluating the extent to which learners benefited from such collaborations.

Post-task interviews. O’Dowd (2000) used post-task interviews to assess students’ views about their development of intercultural knowledge. The projects and online discussion between a Spanish class in northern Michigan in the US and the University of León in Spain focused explicitly on the stereotypical ideas and attitudes that the students held toward each other. The report of interview data highlights areas where students recognized that their knowledge and attitudes had changed as a result of the communication. For example, one participant reported, “I learned that it is not good to generalize, because even though many Americans don’t even know where Spain is, there are definitely some who know that we exist...” (pp. 56-57). This type of result is representative of other studies that have used online communication in order to increase intercultural competence.

Discourse/content analysis of appraisals. Belz examined the extent to which she could find evidence of learners’ development of intercultural competence in the dialogue of learners participating in telecollaborative cross-cultural exchanges. The analysis focuses on the linguistic realization of appraisal in the learners’ language. From a systemic functional perspective, appraisals are evident in the attitudes expressed through the interpersonal functions of language that are evident in expressions such as “I suppose that...” vs. “I know that...” These are related to intercultural competence (IC), Belz argues because

IC is centrally concerned with suspending disbelief about the other and belief about the self. In other words, IC entails modifying or re-evaluating one's evaluations of other societies, cultures, and individuals (through confrontation with them) as well as re-analyzing one's evaluations of the self and one's own culture and society. The subsystem of ATTITUDE, therefore, provides a concrete and transparent linguistic procedure for

revealing how speakers do this in the empirical details of their talk at the microinteractional level. (Belz, 2003)

Despite that fact that one might wish to construe and investigate culture in a more complex way (Atkinson, 2000), the potential of online learning for helping students to expand beyond their own material and cultural reality is clearly something to pursue for second language learning.

Critical perspectives

Post-modern critical perspectives have helped to expand the scope of research questions and findings concerning elearning in the classroom and beyond (Warschauer, 1998). This research is grounded on the assumption that

Internet communication tools cannot be fully apprehended from a positivist vantage point as generically "there" in the world. Cultural artifacts such as global communication technologies are produced by and productive of socio-historically located subjects. Such artifacts take their functional form and significance from the human activities they mediate and the meanings that communities create through them. (Thorne, 2003)

Through the use of case study analysis of the content of learners communications, Thorne was able to identify ways in which the learners' prior knowledge of content as well as their preferences and habits of technologically-mediated communication affected the nature of communication between them and their potential interlocutors, who were native speakers of French living in France.

Another example of the research drawing upon critical perspectives was Lam's (2000) study of an ESL learner in the US who was able to connect with a transnational cohort through the use of his English and technology skills. The critical perspective captures the transformative process afforded by this learners' appropriation of the technology to construct a new, confident English-speaking identity for himself, which is as important as the linguistic knowledge displayed by learners in tasks constructed by others.

Summary

The results from the research reported should be considered in view of the small-scale studies upon which they are based, but on the basis of these studies the following positive conclusions can be drawn:

- Learners can gain some L2 practice in online communication that may be valuable for performance in other contexts.

- Negotiation of meaning, and negotiation of form, have been observed in online communication, but may not compare favorably to face-to-face conversation, quantitatively.
- Learners have been observed developing syntactic, pragmatic, and intercultural competence through in online communication.
- The function of online communication is not limited to a tool that teachers can use to construct collaborative tasks for learners; it is potentially a transformative tool that each learner, depending on his or her own knowledge and agency, can use to construct an identity as a user of the L2 beyond the classroom.

Implications for Learning through Online Communication

A review of the research on L2 learning through online communication demonstrates the complexity of the issues. L2 learning is itself perhaps the most challenging subject in higher education because of the multiple dimensions that are incorporated into the construct of communicative language ability, which is arguably the goal for many language learners. The introduction of elearning into L2 studies offers a provocative opportunity to reexamine the goals of L2 learning and the ways in which learning is evaluated. Studies of elearning begin to meet this challenge, but in doing so they also point to some clear needs for building a more solid research foundation in this area. I have identified four major areas that warrant attention to strengthen the research in this area, and I believe that these implications are relevant to learning through online communication in general.

The Language of Learning

Researchers need to have a more sophisticated understanding of how to study the language of learning. The large majority of studies on online communication are based on a simplistic view of language that allows the researcher to count or describe turns that learners take. The studies that combine content with a discourse analysis come closer to examining more relevant aspects of potential learning. The real issue, however, is how learners deploy their linguistic knowledge to make choices that encode knowledge in a way that helps them to construct and display new meanings. Therefore, the analysis needs to focus on the development of the sophistication of linguistic deployment over time. The research of Belz (2003; 2004) and Belz & Kinginger (2003) provides examples of an approach that might fruitfully be applied to this issue, and therefore is it worth looking at more closely. In the three studies cited, the researchers examined development of three central aspects of language ability—syntactic competence, pragmatic competence, and intercultural competence.

In these and other discourse analytic studies, the analysis rests on identifying how the linguistic choices the learner makes to encode ideas and relationships demonstrate

knowledge and learning. In the study examining intercultural competence, Belz focused on the language of appraisals as they were variously encoded by learners to indicate their dialogic positioning relative to the ideas presented in the text, in particular showing the openness to ideas other than those put forward in the text. Examples of such expressions given by White (2003, p. 260) are *perhaps*, *It has been argued that*, *naturally*, *admittedly*, and *I think*. Belz identified these indicators of appraisal as relevant to intercultural competence, and one might argue that such openness and modulation of certainty is indicative of the type of sophisticated understanding of ideas that Garrison & Anderson (2003) refer to when they suggest that education is about ideas.

However, in language education as well as in other areas, we are often concerned with a more concrete plane of accomplishment, which one might describe as an increase in the ability to use language to express professional or scientific knowledge. Some would argue that learners are in no position to express openness to alternative ideas if they are unable to use the language of the discipline to engage in discussion about those ideas. In this regard, researchers need a means of examining the degree of sophistication that learners display in their emerging discipline-specific language use. Researchers working on examining learners' development across a mode continuum draw on systemic-functional linguistic theory (Halliday, 1994; Martin, 1992) to describe the movement across the continuum from here-and-now oral language to the more precise and distant language of academic writing. An example of such research is Gibbons' (2003) study of learners conversation with their teacher about a science experiment. The student describes his observation of the experiment in his every-day spoken language, and the teacher's mediation consists of rephrasing the learners' language into the more scientific, written mode.

Example 3: Interaction helping the learner through the mode continuum

Student: "it sticks together"

Teacher: "they attracted to each other"

Student: "you can feel...that they're not pushing...if we use the other side we can't feel pushing"

Teacher: "when they were facing one way you felt the magnets attract and stick together. when you turn one of the magnets around you felt it repelling or pushing away"

(Gibbons, 2002, p. 258)

The dialogic learning evident in this exchange is described by Gibbons linguistically through the systemic functional construct of mode continuum, and through the sociocultural theory construct of mediation. Together these constructs seem to offer a means of examining interactions of potential value for learning through conversation. Clearly, some such perspective that extends beyond correctness of linguistic form and quantitative comparisons across registers is needed to examine language learning or learning through language. The pragmatic and cultural goals that most language learners have today, as well as the goals learners have for advancing knowledge in other subject areas require a means of examining language and interactions in a way that reveals how

assistance is given and taken to increase the quality of learners' meaning making through language (Lantolf, 2000; Ohta, 2000). Accordingly, Gutiérrez (2003) argues that sociocultural theory is valuable for the study of online collaborative tasks, and Wells (1999) points out that a systemic functional linguistics is the ideal match for sociocultural theory for the study of learning through language.

Assessment of Learning

Perhaps it should go without saying that the evaluation of online learning through conversation requires some means of assessing learning, but as I have suggested above, methods for assessing elearning present a thorny issue. The issue in second language learning may be exacerbated by the complexity of what is to be learned, but the basic problem probably crosscuts the subjects of higher education, as well as the general communication goals of higher education. The problem rests in the difficulty of identifying and measuring the specific areas in which learners may have benefited from online communication because such learning may intersect and combine with learning from other modes, learners often control what is learned, and the most valuable indicators of learning may appear during the process of learning. Even when pre- and post-testing is conducted (e.g., Fotos, 2004), the online communication is embedded in complex ways with the instruction, making the links between learning through online communication and test scores difficult to interpret.

L2 research on online learning has tackled these problems in two ways: 1) set research objectives as descriptive or critical rather than evaluative or 2) identify some aspect of the observable learning process that can be argued to be valuable for learning. In the first instance, the assessment issue is bypassed as the research objective does not require the researcher to demonstrate learning has taken place. Instead, results are intended to provide different type of insights to technology use for L2 learning. The second approach is worth examination from the perspective of language assessment. Depending on the aspect of the learning process targeted by the researcher, the process data has been argued to indicate language development. For example, researchers seeking evidence for negotiation of meaning in online discussion can argue on the basis of theory and prior research in L2 acquisition that such sequences demonstrate the *potential* for language acquisition, but they would not argue that such sequences indicate language development. In contrast, those researchers who focus on the emergence of particular grammatical or pragmatic aspects of language for an individual argue that the appearance of particular forms and uses in the data can be considered as evidence of language development. However, whether or not such an argument is accepted, of course, depends on the person to whom the argument is made! Thus whatever methods are used for evaluation and assessment need to be discussed in view of the broader academic community in which they might be called upon to play a role.

Grounding in Educational Research Methods

Discourse analytic methods might be better accepted and developed if they were contextualized with broader approaches toward educational research. Garrison and Anderson (2003) discuss content analysis of elearning transcripts as quantitative studies: Their review concludes that “the main shortcoming of the quantitative content analysis studies in our sample was the failure of researchers to adhere to the principles that make quantitative research valid (p. 148). Similarly, when viewed by an audience that assumes the correctness and defensibility of quantitative, comparative evaluation methods, the research I have summarized in this paper appears altogether inadequate.

The methodologies employed are consistent with some of the research conducted on L2 acquisition (Ellis, 1999), which some would argue is intended to inform theoretical perspectives about how L2s are acquired, as illustrated by the arrow in Figure 1. The curved dotted line in Figure 1 indicates that such methods have been borrowed for research on online communication, which one would hope would have some connection to curriculum and teaching practices.

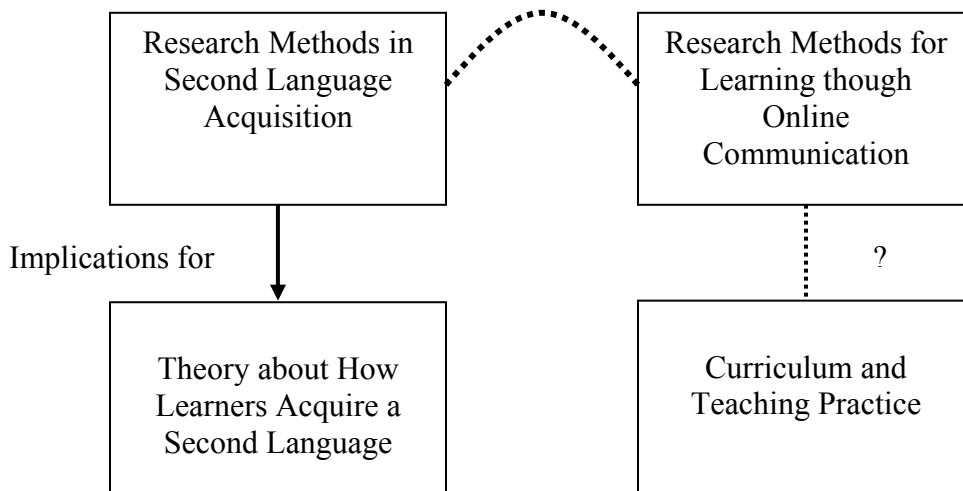


Figure 1. The tentative status of research methods for studying online L2 learning

However, if such L2 acquisition-influenced methods are to be useful for more practice-oriented knowledge, additional reflection and development of these methodologies is clearly needed. Evaluation methods in education do draw upon complex qualitative methods; it seems that the L2 methods need to be incorporated into such larger frameworks that make sense and have credibility to relevant audiences in the educational context.

Advanced-Level Study

If ten and twenty years from now we are to have a research basis for making decisions and recommendations about elearning through online communication, much more advanced-level study needs to be devoted to the central issues in this area. The need is evident if one considers the number of Ph.D. dissertations devoted to issues such as interaction analysis in the teacher-fronted classroom or internal consistency reliability formulas for dichotomously scored items relative to the number that have attempted to isolate and study the way in which learning is construed through learners' language in online communication. The field of applied linguistics takes issues of discourse analysis within learning tasks and outside the classroom as an area of inquiry offering constructs such as negotiation of meaning as well as critical reflection on their use (e.g., Nakahama, Tyler, & van Lier, 2001), but this activity needs to expand to include how these research methods play out in online communication. In other words, the activity of applied linguistics research needs to expand to the new and important issues created by the use of technology in communication and higher education. The complexity of these issues suggests that advanced level study needs to be designed in a way that allows students wishing to work on these issues to study a combination of technology, linguistic analysis, assessment, and educational research.

Conclusion

Despite the tentative and exploratory nature of the research on L2 learning through online communication, the issues addressed in these studies may offer some useful suggestions for research on learning through online communication in other areas. The data in such contexts are so clearly in need of linguistic analysis that it is difficult to look at them without seeking help from linguists. And linguist, Michael Halliday (1993) puts it, "learning is a semiotic process: learning is learning to mean.... The prototypical resource for making meaning is language" (p. 113). With the language of learning recorded faster than anyone can process it in higher education today, it seems that researchers are in an ideal position to examine how, when and why students learn to mean through online communication.

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