CHAPTER 2

REVIEW OF RELATED LITERATURE

2.1 Introduction

The field of computer-mediated second language instruction, as the word suggested, is a cross-disciplinary enquiry by nature. It will thus require a cross-disciplinary review of relevant literature. However, questions that have constantly been asked in conducting this review are what constitute relevant literature of the field and how wide should the scope of the review be in order to enlighten later discussions but yet avoid confusion. These have been proven difficult to answer.

I have thus chosen to err on the comprehensiveness of coverage while running the risk of making the review seems too complicated. The result is that a complex number of underlying concepts that have so far been unrelated to the field of second language instruction have been drawn to explain certain crucial phenomena, for example the concepts of cyberspace, virtual space agency, the nature of text and language in CMC and others. Many others, however, have been relegated to sideline discussions in the footnotes. Such a multithreaded discussion will necessarily make the discussion difficult especially when the fields of electronic space and the more general educational technology, for example, have been far relations to applied linguistics. But this is felt to be necessary when more and more language instruction now is carried out in this networked electronic medium. A unified set of principles for computer-mediated second language instruction will thus be necessary to guide the practice of instructional activities in this area. In order to do this, the reviews that follow will attempt to go beyond the available literatures to provide various syntheses.
of necessary theoretical concepts and analytical frameworks to tie the so far unrelated literatures to the topic of computer-mediated second language (L2) instruction.

I will first review a model of online education where computer-mediated language instruction can be incorporated. This will be followed by a discussion of online learning environment, drawing studies from SLA and learning orientation. The notion of cyberspace is then defined based on the theoretical studies of cyberspace geography and the experiential account of the cyberspace. Comparison between cyberspace and physical geographical space is also made in an effort to draw a parallel between the two, while pointing to the hybrid nature of CMC text and some of the benefits that cyberspace offers. Next, Communicative Language Teaching (CLT) is discussed as a pervasive current trend of language pedagogy together with the key concern that underlies it, i.e. communicative competence, arguing that CALL development should move in line with CLT and aim to develop the full range of communicative competence.

2.2 Online Virtual Learning Environment

In this section a model of online education will be reviewed, followed by a brief review of language learning environments and the concept of learning orientation. This will conclude with a synthesis of theory from the two where an online virtual language learning environment will be conceptualised.

2.2.1 Asynchronous Learning Networks

Asynchronous Learning Networks (ALN) is a model of online education, stemming from the rapid development of Information and Communication Technologies (ICTs). It is a network of people for anytime-anywhere learning, combining self-study with substantial, rapid, asynchronous interactivity with others.
In ALN, learners use networked computers and communications technologies to work with remote learning resources. These are either dynamic resources such as other students, instructors or outside experts, or more static resources such as assignments, course notes or online libraries (Mayadas, 1997).

In an ALN, every other person on the network is seen as both a user and a resource, thus making it a network of people instead of a connection of affectless electronic resources. This crucial element is a vital component of the argument presented in section 1.4.1 on the importance of the human element in all instructional activities, especially language instruction. Such a group of people networked through electronic means creates an interactive learning community that is not limited by time, place or the constraints of a classroom (Mayadas, 1997). With such a network, “distributed classes” populated with learners that can be seen as “distributed cohorts” (Mayadas, 1997, p. 2) situated in a virtual space can be envisaged.

While ALN is mainly conceptualised as a distance education delivery and support system, its benefits for on-campus learners are no less. It brings new kinds of functions and interaction that may allow new instructional and learning outcomes. Computer networks with high service quality and speed are available to students and faculty at most campuses nowadays. When this capacity for asynchronous access and communication is overlaid onto traditional classroom or lecture hall instructional activities, the outcome would be improvements in the quality of learning (Valiathan, 2002). Peer-to-peer collaborative learning among students may be greatly enhanced through asynchronous access to each other or to tutors. Improved communication among all network "nodes" (students and the faculty) may favourably impact students’ motivation and retention, leading to an increase in learning productivity. Oakley (1996) reports that, for a high enrollment, lower division electrical
engineering course, the students in ALN sections achieved better results and demonstrated lower dropout rates than those who submitted paper and pencil homework problems and received help in traditional face-to-face fashion. What is interesting to note is that the superior results for ALN students remained unchanged even when the student/faculty ratio for the ALN sections was increased by 50% (50 or more students). This is contrary to the common assumption that learning outcomes deteriorate as student-to-faculty ratios increase in traditional classrooms. Learning networks seem to scale differently from traditional classrooms and this has important implications for institutions that have to cope with large classes and perhaps for a language class too.

2.2.1.1 Advantages of Asynchronous Communication

Although synchronous face-to-face method is the most efficient form of communication, in most instances such meetings do not take place very often because of difficulties and costs associated with scheduling and distances, even within the same campus. When a group gathers together in a room, there may be very effective communication. Other than these occasions, however, there is little or no communication. In other words, the communication bandwidth peaks during face-to-face sessions and drops to zero in between. The result is that, averaged over periods of several hours or more, the effective bandwidth for asynchronous communication can be much higher than in face-to-face communication (Mayadas, 1997), and it is exactly those times of zero communication that asynchronous communication can help to fill. I have roughly illustrated the supplementary function of online interaction to face-to-face interaction using artificial data in Figure 2.1 below:
Figure 2.1 Supplementary role of online interaction to face-to-face interaction

The quality of asynchronous communication is arguably much higher than a face-to-face one, considering the fact that the limitation of cognitive resources\textsuperscript{11} in real-time communication would be freed when the time factor is eliminated with asynchronicity. Furthermore, computer-mediated asynchronous communication within a collaborating group would reduce mutual inhibition among group members during discussion due to various sociological and psychological factors (Finlay, Hitch, & Meudell, 2000), such as coordinated interaction efforts between participating members, because contributions by members are in fact done alone in the physical world through the computer. Presumably this will also decrease social loafing by the individual member of the virtual group by eliminating the factors that cause it in the first place.\textsuperscript{12}

\textsuperscript{11} These include all the processes of the mind that are involved in the processing and storing of incoming and processed information based on the fact that these processing and storage abilities of the mind are limited.

\textsuperscript{12} Weldon and Bellinger (1997) identified four factors that may contribute towards social loafing. First, there may be a diffusion of responsibility, whereby each individual feels less responsible for the group’s actions than their own. Second, personal accountability is reduced, making it easier to exert less effort without being noticed. Third, participants may withhold ideas, because it is perceived that individual contributions will not make much difference. Fourth, participants may be inhibited from contributing for fear of being negatively evaluated by other members of the group. It can be argued that all four factors can be more or less eliminated in a virtual group when the sense of individuality is heightened, individual status, power and voice equalised, and the element of face greatly reduced.

25
It is thus worthwhile to look into the viability of conducting a language course in such a mediated asynchronous network as, up till now, the focus in most ALN projects is primarily in scientific and technical fields. Furthermore when a network facility is available, language educators should be able to fully exploit the affordances and possibilities made available by the system. In order to achieve this, the extent to which an environment created by asynchronous computer-mediated communication is conducive to the learning of an L2 will need to be investigated through an in-depth study of what the medium can afford before any conclusion can be made.

2.2.2 Learning Environment and Orientation

The learning environment has important motivational and attitudinal outcomes on learners. Basically two types of language learning can be identified based on sociolinguistic conditions of where the language learning takes place, namely, second language acquisition\(^{13}\) and foreign language learning.

In second language acquisition “the language plays an institutional and social role in the community...[I]n contrast, foreign language learning takes place in settings where the language plays no major role in the community and is primarily learnt only in the classroom” (Ellis, 1994, p. 11-12). While language learning in a foreign language setting is mainly instructed, in a second language setting it can be naturalistic and/or instructed.

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\(^{13}\) Researchers such as Krashen (1981) distinguish between “acquisition” and “learning”, where the former refers to the subconscious process of “picking up” a language through exposure and the latter to the conscious process of studying it. Though these terms are problematic in that they are based on how they are internalised, and it is not easy to demonstrate which type of knowledge learners possess is of the “acquired” or “learnt” kind, I nevertheless choose the terms to illustrate the settings of learning environment instead of the internalisation process. It should be pointed out that not just natural acquisition can occur in a second language environment but that learning in an instructed setting is also very much possible.
With these distinctions, two instructed language learning environments can be identified: instructional setting in a second language and instructional setting in a foreign language environment. It is not difficult to see that a learner in second language environment would have more reasons to learn the target language when they have seen the target language being used by the surrounding community, and they themselves, at times, are obliged by the social conditions to use the target language. This can be better seen with the concept of orientation proposed by Lambert almost three decades ago. Lambert (1974, p. 98) defines integrative orientation as an interest in learning an L2 because of "a sincere and personal interest in the people and culture represented by the other language group". This contrasts with an instrumental orientation, which concerns the "practical value and advantages of learning a new language" (p.98). In addition, Gardner (1985, p. 10) defines orientation as "the combination of effort plus desire to achieve the goal of learning the language plus favourable attitudes towards learning the language". Thus a positive orientation refers to the underlying reasons for studying an L2. Without which, integrative motivation and positive language learning outcome cannot exist.

2.2.3 Synthesis of Online Language Learning Environment

Nothing is more effective than giving the learners themselves reasons to learn the target language. Without positive orientations, all methodologies will be useless. It is vital then to put a learner in a second language environment, or an immersion program, in order to cultivate some degree of integrative and instrumental orientations towards the learning of a target language. While creating a physical immersion program is a possible option, it is not always a practical choice nor desirable especially when there are sociocultural and political reasons involved in the design of the curriculum. It is thus important to explore the possibilities of creating a virtual
online immersion environment for the learning of a target language. This has less impact of change on the educational institution as it does not involve the reorganisation of the physical learning environment and has the advantage of providing a more linguistically conducive environment to the learning of the target language. Based on the assumptions that in a second language learning environment, where the learning takes place in a host environment, is more desirable than a foreign language environment, and that a host environment is more likely to induce and cultivate integrative and instrumental orientations to the successful learning of an L2, an online virtual language learning environment can be conceptualised.

In Figure 2.2 I have illustrated a classroom setting in a physical host environment and the use of language in the physical host environment.

![Diagram of Language learning in host environment](image)

**Figure 2.2 Language learning in host environment**

Language learning in a host environment provides the possibility of putting what is learnt in the classroom to authentic use, because what is possible in an instructional classroom is usually simulated language use that lacks authenticity. Accessibility to the host environment will help the learner see the relevance of learning the target language and make identification with the culture of the host environment easier.
However if the classroom is situated in a non-host environment, no authentic application of the target language that has been learnt in the classroom would then be possible. I have illustrated this in Figure 2.3.

![Diagram](image)

**Figure 2.3 Language learning in non-host environment**

With the lack of authentic language use in a host environment by the L2 learners, it will be difficult to cultivate positive integrative and instrumental orientations towards the target language in them.

However, by setting up an intermediary online space that acts as a virtual host environment for the target language in a non-host environment (Figure 2.4), the effect of the non-conducive physical environment can be minimised substantially, depending on the significance of the online environment on the learners’ everyday life. Such a virtual host environment will possibly create a need in learners towards mastering the target language because the virtual environment serves as a space for linguistic action for the learners which will otherwise be unavailable. However, in order for this conceptualisation to be valid, we need to see to what extent a virtual
space can resemble a physical space in terms of language use and instruction, and thus serve as an arena for speech\textsuperscript{14} action.

![Diagram of language learning in online host environment]

\textit{Figure 2.4 Language learning in online host environment}

2.3 Defining Cyberspace

The convergence of computers, telecommunications and the information technology has created the so-called 'cyberspace'. This has been variously defined, but the one that recognises the inseparable link between an electronic world and the geographical world is by Batty (1993). She defines cyberspace as a 'new kind of space, invisible to our direct senses, a space which might become more important than physical space itself [and which is] layered on top of, within and between the fabric of traditional geographical space' (Batty, 1993, pp. 615-616). Graham (2000) points out that the recent growth of discourses on cyberspace and new communications

\textsuperscript{14} Many times the texts generated in CMC are seen as written speech for the writer, instead of, say, conventional letter writing, though the reverse could be true, especially when the writer is new to using CMC as a means of communication. This issue will be clearer when the notion of electronically prostheticised speech and cyberspace is discussed in section 2.3.
technologies have been dominated by spatial and territorial metaphors such as web site, superhighway, virtual community, electronic frontier, Web surfers, and so on. The emergence and use of such metaphors are quite understandable, in that the whole creation of cyberspace through the natural convergence of the three phenomena above is due to the need of human beings to communicate more efficiently within a physical geographical space. Technologies and cyberspace are socially constructed out of a social and interpersonal need to connect. This runs contrary to what Graham has said, that "concepts like ‘information society’ and the ‘information superhighway’ have important roles in shaping the ways in which technologies are socially constructed" (p.10). Concepts do not shape reality. It is reality that shapes the way we conceive things. The fact that such territorial metaphors are in widespread use reflects the very nature of its root in the physical geographical society, and thus Batty’s (1993) view of the inseparability of the physical and virtual world. The territorial metaphors also reflect how real the experience and perception is by the net surfers of the physical properties of the virtual world.

Stone (1995) provides a more detailed experiential account from the ethnographic studies of cyberspace or virtual space experience on social acts through CMC. A vivid account of what many online conference participants see as constituting a social act in synchronous CMC is given below:

When asked how sitting alone at a terminal was a social act, they explained that they saw the terminal as a window into social space. Frequently the social space was described as being "out there" (usually accompanied by an expansive wave of the hand), or sometimes "in there" (accompanied by a gesture towards the computer). When describing the act of communication, many conference participants moved their hands expressively as though typing, emphasising the gestural quality and essential tactility of the virtual mode. They were demonstrating a perceived deep connection between the differently embodied character of virtual communication and the articulation of that communication in terms of an imagined physical locus within which an exchange of information took place between physical entities. (Stone, 1995, pp. 110-111)
It can be seen that the disembodied experience in the cyberspace created by CMC is very much real to the participants and that cyberspace has even acquired an almost tactile quality, even though it is just imaginary. From the account above, even though cyberspace exists only in the mind of the participants and has no actual existence in the physical reality of space, the disembodied experience can nevertheless be normalised by the participants and perceived as part of their social lives. This has important implications for language learning, because what constitutes actual reality is irrelevant to the mind. What is important is how the external world, real or virtual, is represented in the mind through a particular language. In other words, it is how the mind perceives the external entities and represents them in the semiotic system of language that matter.

How should we then see this disembodied experience and relationship in cyberspace? The nature of the body/other relationship as mediated by technological apparatus can have a clearer view when seen from the perspective of agency. Stone (1995) comments:

Whereas, prior to electronic communication, an agent maintained proximity through texts bearing the agent’s seal, and the agency the texts implied could be enforced through human delegates, in the time of electronic speech proximity is maintained through technology, and agency becomes invisible [italics added]. Users of the telephone eventually took for granted that they were speaking to another person “on” the telephone [the telephone becomes invisible to the user]. It was this sense of assurance in the presence of a specific bounded unitary agency, grounded by a voice, that undergirds a gradual reconfiguration of the meaning of proximity. With the advent of electronically prostheticised speech, agency was grounded not by a voice but by an iconic representation of a voice, compressed in bandwidth and volume and distorted by the limitations of the early carbon-granule transducers, so as to be something more than a signature or seal on a text but far less than an embodied physical vocalisation. Agency was proximate when the authorising body could be manifested through technological prosthetics. This technological manifestation in turn implied that the relationship between agency and authorising body had become more discursive. This process of changing the relationship between agency and authorising body into a discursive one eventually produced the subjectivity that could fairly unproblematically inhabit the virtual spaces of the nets. (pp. 96-97)

With regard to the last point above, Figueroa-Sarriera (1999) makes a similar point in saying that “everything that ‘is’ in this [cyber]space has to have an existence
in words, a narratability” (p. 133). The resulting subjectivity, on the other hand, that is produced through the more discursive relationship between the agency and the authorising body also in effect combines the two and thus becomes the virtual manifestation of the original authorising body. I have illustrated this in the diagram (Figure 2.5) below:

![Diagram of discourse relationship]

**Figure 2.5 Virtual Manifestation of Authorising Body in Cyberspace**

All together, this view of invisible agency, proximity through technological manifestation and the production of subjectivity through discursive means has given new meanings to how we perceive electronic texts and how virtual cyberspace can be conceived, and thus experienced in our mind. With this view too, we can see the text in CMC, despite its written nature, as an additional form of electronically prostheticised speech or an iconic representation of a voice, using Stone’s (1995) terms quoted above.

This is a unique nature of text in CMC. It is obvious in all synchronous CMC and it will be seen that it is also manifested in asynchronous CMC such as those found in email lists and online forums. It should be noted that it is this very nature of CMC that contributes to the sense of realness and authenticity experienced by participants of CMC in cyberspace, which entails a construction of a new type of social context for interaction.
2.4 Social Presence and Equalising Effect in Cyberspace

Another area of enquiry on the nature of CMC is the study on social presence in CMC. However, there are two opposing perspectives in the literature as reviewed by Leh (2001). One perspective is that the lack of social cues in CMC is problematic and the other is that CMC messages are personal and foster interactions (thus making it a conducive environment for an instructional setting). Among the first perspective are studies that note the absence of social cues that affect users' perceptions of communication context and constrained users' interpretation of messages (Rice, 1984; Trevino, Lengel, and Daft, 1987), those that indicate that CMC is less appropriate for personalised interactions and thus inappropriate for learning due to the importance of interactions to learning processes (Hiltz, Johnson, & Agle, 1978; Rice & Case, 1983; Rice, 1984; Steinfield, 1986), a study that points to the masking of individual differences in CMC (Appelbaum and Enomoto, 1995) and finally the study by Ruberg, Moore, and Taylor (1996) that shows that CMC limit students participation and interaction.

On the other hand, it has been shown that social presence can be created by the instructors and the online community despite the lack of social cues (Gunawardena, 1995). CMC users also adapt to the medium by creating online communities and correspond in personal and friendly terms (Hiltz & Turoff, 1978; Kerr & Hiltz, 1982). Other positive factors are that experienced computer users rated email as a rich media (Foulger, 1990), CMC is found to encourage discussion among students (Ruberg, Moore, & Taylor, 1996), and that more ideas are generated by students using CMC (Olaniran, Savage, & Sorenson, 1996). Leh's (2001) study on the use of email in pen pal projects also finds that CMC produces immediate benefits for distance learning and that the students and instructor were in favour of the use of
CMC (in this case, email) in instruction. This supports Walther’s (1994) challenges to the previous “filtered-cues” arguments. Walther characterises CMC as hyper-personal in some cases rather than impersonal, where he cites several studies in which experienced CMC users rated text-based media, including email and computer conferencing, as ‘as rich or richer’ than telephone conversations and face-to-face conversations” (p.18). In a comparative study between online and face-to-face discussion among graduate students, Tiene (2000) also finds that the survey data for online discussion (class LISTSERVs\(^\text{15}\)) indicates positive reactions to most aspects of the experience, even those elements that clearly differ from the face-to-face experiences.

Despite the inconsistency of the results obtained by these two camps of researchers, recent reviews of the social presence literature seems to support the latter as reviewed by Rourke, Anderson, Garrison and Archer (2001), especially those studies that focus on the use of CMC in educational settings. With such ameliorating results, they conclude that computer conferencing can support both the cognitive and affective dimensions of higher education.

However it should be pointed out that the virtual learning environment proposed is never intended to replace the physical classroom but rather to supplement and enhance it. Seen in this light, if the online virtual environment can help make a language program more relevant to the goals of an L2 learner in creating a more conducive learning environment, then it would be worthwhile to embark on such an exploration into the online instructional world.

\(^\text{15}\) LISTSERV© is a system that allows the creation, management and control of electronic mailing lists on a corporate network or on the Internet.
This is indeed the case as suggested by the proposed synthesis in section 2.2.3 above and a similar point made by Turkle (1995). Turkle (1995) points out that in the case of text-based MUDs (Multi-User Dungeons)\(^{16}\) when discussing the fundamental elements of simulation, the challenge is greater when the portrayal rests entirely on the narrative arts. She also points out that such simulation usually contrasts with the polluted physical reality (i.e. a reality that is not the expected ideal environment) and that the environment for interaction is created by the participating subjects through constructing an atmosphere for the communicative exchange. Even though the element of reconstructing a new self in asynchronous CMC such as email discussion is not as strong as that found in MUDs, it nevertheless provides an opportunity for the learner to have a new unpolluted beginning in the new environment of the online virtual space, where past experiences of language learning failures can be laid aside and engage in the creation of new experiences. This is rightly pointed out by Figueroa-Sarriera (1999):

> In the virtual setting the subject reproduces what she or he is; but also what he or she would like to be, and what she or he would not want to be in the real physical world, as well. (Figueroa-Sarriera, 1999, p. 141)

Even though new experiences in the online virtual space may not necessarily be rewarding, because they can be as unpredictable as the real world, the possibilities and the hope that the new space can provide is itself a motivating factor. A second chance is never an easily available option in physical space. On the part of the instructor, a conducive learning environment can be actively constructed to meet the needs of the learners, without the learners’ realisation of such covert manipulations.

\(^{16}\) MUD was created at the University of Essex in England, in 1980. The setting for this MUD comprised treasures, warriors, wizards, and dwarfs, and is known as The Land. Subsequent generations of MUDs are organised around different imaginary settings. Objects can be designed in MUSEs (multi-user simulation environments) and MOOs (MUD object oriented). More recently, in some of them, it is possible to incorporate images into the virtual space. These activities may have dimensions of scientific investigation, or they may be educational or simply recreational (Figueroa-Sarriera, 1999, p. 132).
Furthermore, in cyberspace, the subject does not have to risk having his or her physical look, personal background, race, and so on impose experiences of prejudice, disdain, marginalisation upon the communicative exchange. In other words, there can now be at least some relative equality in human communication. Quoting various studies on the social context of CMC (Sproull and Kiesler, 1991; Finholt, Kiesler and Sproull, 1986), the freedom from time (Selke & Meyer, 1991; Tella, 1992), group dynamics (Sproull & Kiesler, 1991, pp. 59-60; McGuire, Kiesler, & Siegel, 1987; Huff & King, 1988) and classroom studies that make use of CMC (Hartman et al., 1991; Keln, 1992; Kern, 1993; Kroonenberg, 1995; Mabrito, 1991; Pratt & Sullivan, 1994), Warschauer, Turbee and Roberts (1996) have argued that CMC does indeed have such democratising and equalising effect. In fact, many of the threatening and negative scenarios found in the learners’ daily face-to-face encounters with their better peers and their tutors can be dealt with more easily with the mediation of the computer interface, because most see the computer screen as a communication window with a protective function. This may be true even in an instructional setting, where the whole purpose is not to hide from the consequences and responsibilities of learning. This reduces the level of language production anxiety among L2 learners that is so often related to poor language learning outcome.

Bellamy & Hanewicz (1999) provide a useful summary of the differences between CMC and face-to-face (FTF) communication that explains the levelling effects of CMC:

1. Non-verbal gestures such as facial, body, and body posture are missing as informational cues for defining the situation.

2. Verbal cues including voice tone, voice quality, voice modulation, and intonation are frequently absent from CMC but present within FTF communication.

3. Information related to the social and personal characteristics of the individual such as gender, physical appearance, and status are substantially suppressed
within CMC. (Bellamy & Hanewicz, 1999, Research Issues Within the Framework of Symbolic Interaction Theories section, ¶ 4)

Indeed the social presence that we experience in the real world is compromised in CMC. However, a new kind of (virtual) social presence is created in the cyberspace of CMC and this somehow compensates for the loss of some attributes available in the physical world.

2.5 Linguistic Profile of Email

From the previous sections we see that the disembodied experience and social presence as enacted through text-based CMC are created through discursive means, that is through the use of written language. Since the entire locus of action is situated in an immaterial semiotic environment in cyberspace, it will be essential for us to look into the linguistic profile of such an environment, namely, that of email, as a prototype of CMC.

According to Baron (2000), the linguistic profile of email could be seen in terms of four dimensions: social dynamics, format, grammar, and style. With this four-dimensional view, she proposes an email linguistic profile, as shown in Table 2.1.
| Social Dynamics | Predominantly like writing:  
Interclocutors are physically separated  
Physical separation fosters personal disclosure and helps level the conversational playing field |
|----------------|----------------------------------------------------------------------------------|
| Format         | (Mixed) writing and speech:  
Like writing, email is durable  
Like speech, email is typically unedited |
| Grammar        | Lexicon:  
Heavy use of first- and second-person pronouns  
Syntax:  
Like writing, email has high type/token ratio, high use of adverbial subordinate clauses, high use of disjunctions  
Like speech, email commonly uses present tense and contractions |
| Style          | Predominantly like speech:  
Low level of formality  
Expression of emotion not always self-monitored (flaming) |

Table 2.1 Linguistic Profile of Email (Baron, 2000)

The levelling of conversational playing field is an obvious result of the features of the system (or rather the lack of them) that narrow the available bandwidth and impoverish the communication environment and make it less dependent on traditional markers of social status that have difficulty transferring over to the textual interface of CMC. Giese (1998) has pointed out this paradoxical nature of CMC, where on the one hand it is a liberalising and democratizing environment but on the other hand much of the emotions of the interlocutors are filtered out and thus making it difficult to tell a joke apart from a sarcastic remark. Giese (1998) suggests that such a paradoxical situation is caused by “juxtaposing a communication environment that is immediate and conversational with a communication interface that denies the communicators the signs and symbols they have grown used to using in such an immediate and conversational environment” (Giese, 1998, Textual Adaptations: “Making Do” in an Impoverished Environment section, ¶ 9).

Such a paradox, however, may not be detrimental to the language learning environment. In fact, the very advantage of CMC over other means of communication in encouraging L2 learning rests on such a facilitative paradox.
2.6 Spoken, Written and CMC Discourse

In his study of a large corpus-based comparison between spoken, written and CMC discourse to investigate the oral and written linguistic aspects of CMC, Yates (1996) drew from a Hallidayan model of language use and focussed upon the textual, interpersonal and ideational (Halliday 1978) aspects of speech, writing and CMC. With the textual aspects of CMC discourse he considers the measures of type/token ratios and lexical density. The interpersonal in CMC is explored through the examination of pronoun use and lastly the presentation of the ideational within CMC discourse is considered through an exploration of modal auxiliary use within the CMC corpus. When compared to those of the spoken corpora, it confirms the hybrid nature of CMC discourse.

2.6.1 Comparison of Textuality

Speech is produced in real time and is intended to be consumed and heard in the same rapid and dynamic manner. Writing on the other hand is static, produced by the writer at his own pace and consumed at the speed the reader chooses. With this difference in production, we can expect some differences in the language use. One of them concerns vocabulary use. Chafe and Danielewicz (1987) claim that

[a]s a consequence of these differences, speakers tend to operate with a narrower range of lexical choices than writers. Producing language on the fly, they hardly have time to sift through all of the possible choices they might make, and may typically settle on the first words that occur to them. The result is that the vocabulary of spoken language is more limited in variety. (p. 88)

In considering the textuality of CMC, Yates' (1996) type/token analysis across the media of CMC, writing and speech indicates a clear statistical difference between the three groups. CMC mean type/token ratio is lower but very close to the ratio for writing, while the ratio for speech is much lower than that for writing. This indicates that CMC is more akin to writing than speech in the range of vocabulary used. This
more or less confirms Chafe and Danielewicz’s (1987) claim quoted above in seeing this as a product of the written medium itself where it provides for longer gestation over the content of utterances. However, one can reason that since CMC’s corpus is produced electronically it should bring an even greater set of opportunities to correct, change, restructure and review utterances, and thus a greater variety of vocabulary used in CMC compared to writing. However, it appears that the opportunities are not taken up (Yates, 1996). This perhaps suggests that CMC also resembles speech in the kind of immediacy in production it requires. Despite this, the high type/token ratio of CMC suggests that more gestation time is afforded by the electronic medium, while the immediacy of production is to a certain extent retained.

The lapses of time in CMC language production should prove useful for L2 learners who lack fluency and yet are still motivated enough by the relative immediacy of the medium to communicate without feeling pressed. In fact, in their proposal for a general metacognitive-cognitive model of self-regulated study, Thiede and Dunlosky (1999) suggest that “externalising information required to execute a plan will increase the availability of working-memory resources, which will in turn support the effective execution of a given plan” (p.1036), giving the example that if the required information is presented visually, a more complicated plan can still be effectively executed.

2.6.2 Comparison of Interpersonal Aspect

A language lesson cannot serve its instructional function without effective interpersonal communication between teacher/learner and learner/learner. In his consideration of the interpersonal aspect of CMC, Yates (1996) studies the use of personal reference. He postulates that there should be higher levels of first and second person pronoun use in spoken discourse compared to writing, and indeed this is
shown in his results. What is interesting is that when CMC is compared to the results, it differs markedly in its lower use of third person reference, especially to that of writing. However, in terms of the percentage of first and second person reference, it is closer to speech in overall usage, despite its similarity to writing in terms of overall frequency of pronoun use. Yates specifically points out that CMC makes greater proportional use of first and second person pronouns than either speech or writing. This suggests that CMC is a medium that encourages more involvement from the participants even when compared to a face-to-face environment. Such a result will refute all arguments that say that CMC is less appropriate for personalised interactions and thus less effective in creating an optimal environment for language learning.

2.6.3 Comparison of Modality

There are a number of factors that make communication through language intriguing. One of them is modality. Hodge and Kress (1988) discuss the modality in language by noting that:

In everyday communication it manifestly matters a great deal what weight we attach to an utterance. A statement may be said emphatically, without qualifications, and we know that we are being asked to believe that it is true. Or it may be hedged with “I think”, “it may be that”. Perhaps it is spoken with rising intonation like a question, and we know that the speaker is offering the statement more tentatively. Or it may be said with a laugh or an ironic sarcastic tone, and we know the speaker does not believe the statement at all. (p. 121)

Hodge and Kress term the above as the modality system of language, where the attitude towards a statement made or the content is the focus. They also note that the use of modal auxiliaries manifests such an attitude most notably.

When Yates (1996) considers the use of modals in general, he finds that the usage of modals in CMC is significantly higher than that of either speech or writing, with writing having the lowest usage of all three. When he compares the usage of
modals according to Coates' (1983, p.28-29) semantic grouping of modals (i.e. modals of obligation and necessity, ability and possibility, epistemic possibility, volition and prediction, and hypothetical modals) he finds that the overall relative frequencies of modal usage across the five semantic groups are most similar between speech and CMC. He concludes that CMC corpus contains a considerable degree of discussion in which statements are modalised in one form or another. The similarity of CMC modal use with that of speech agrees with the qualitative results obtained by his earlier study (Yates, 1993) which indicate that the contextual use of modal auxiliaries within CMC is comparable to that of speech.

For Giese (1998), the reason for this similarity is because the usual written communication loop has been reduced from weeks and months to seconds and minutes. So “people do not ‘write’ to their friends on the Internet, they ‘talk’” (Giese, 1998, Textual Adaptations: “Making Do” in an Impoverished Environment section, ¶1). It is precisely this nature of “talking” over the Internet that serves to motivate L2 learners and encourage participation. L2 learners’ feeling of apprehension towards written tasks is a common observation by language teachers. Anything that will change the learners’ perception of written tasks to more positive ones should thus be encouraged and exploited.

2.6.4 Semiotic Field of CMC

From the discussion above, where then should we place CMC? When discussing the semiotic field of CMC, Yates (1996) notes the following:

In the case of CMC discourse, there is no such field beyond the focus of the interaction [italics added], which may be quite diverse and without a singly-defined discursive object. In fact the text of the CMC interaction is the field. Such lack of a defined field may be the explanation for the high levels of modality within CMC discourse. Not only must the text carry the social situation, it must also carry the participants’ relationship to the situation, their perception of the relationships between the knowledge and objects under discussion. (p. 45-46)
In our effort to characterise email, most have tried to do it in terms of what have been experienced in other fields, and this is why most reach the conclusion of the hybridity of email profile, and struggle with the insoluble duality of the written and spoken nature of email. Yates (1996), however, has rightly pointed to the existence of the new field of CMC, and thus email, as a field all by itself with the text as the focus of interaction. The high level of modality within the CMC discourse would thus be a natural adaptation of CMC users to this new form of communication in a new semiotic field made possible through the interface of networked computers. On a similar note, Giese (1998), when discussing the constitution of identity and the presentation of self in newsgroups, which is done solely through text-based discourse, comments that the presentations of self and the declarations of identity are constituted as both text and context in a textual world. What would be interesting then is to identify what this new medium has to offer an L2 learner through its use when the foci of discourse use are reshuffled to suit the need of this new medium, as in the use of modals, or whether the unique nature of the medium can be exploited for L2 language instruction and acquisition.

2.7 Grammar of Speech, Writing and CMC

While the mode of language use in CMC is written, the language used in CMC tends towards spoken language, as the previous section has shown. This may raise some questions for those who see the written and the spoken mediums as having two different grammars. Is the spoken grammar learnt in one medium transferable to the other? What is the grammatical repertoire acquired by the L2 learners if CMC forms part of their learning environment? Thus a brief discussion of the nature of spoken and written grammar is in place here.
The question we would ask here is whether there is a monistic basic grammatical repertoire for both spoken and written language, or whether there are two different grammars, one for each mode. Leech (2000) argues for the view that spoken and written languages utilise the same basic grammatical repertoire, however different they may be implemented, in contrast to the Nottingham school (represented in the work of Carter, Hughes, and McCarthy at the University of Nottingham) which emphasises the differentness of spoken grammar from written grammar. Leech argues that although two varieties of the language (spoken and written language) share the same descriptive grammar (a common repertoire), they are very different in terms of performance grammars. He sees this relation as a scalar one, that written texts are speechlike to a varying degrees, and that spoken texts resemble written texts to varying degrees (as statistically demonstrated by Biber (1988)). He notes that this would be a more plausible account than a “split competence” postulate that suggests that a literate native speaker would make use of different grammars, one for speech and one for writing.

Such a view concurs with Chomsky’s (2000) idea of an I-language, “the generative procedure that forms structural descriptions (SDs), each a complex of phonetic, semantic, and structural properties” (p. 26). For Chomsky, whether a language is spoken or written, it is just a different realisation of the I-language by the performance systems, an epiphenomena of the underlying knowledge. He further postulates that there are only two types of performance systems: articulator-perceptual and conceptual-intentional, which correspond to two interface levels, and he calls the former (which he assumes to be mainly phonetic representation) Phonetic Form and the latter Logical Form. Yip and Matthews (1995) extend Chomsky’s idea to L2 learners’ interlanguages and suggest the notion of I-interlanguage, which
suggests that L2 learners make use of the same innate language system as the native speakers, or when they speak and write their own native languages.

L2 learners’ interlanguages (transitional system reflecting the learner’s current L2 knowledge) are natural languages, according to Adjemian (1976). This position has been reaffirmed by Eckman (1991) in his Interlanguage Structural Conformity Hypothesis, which states that:

The universal generalisations that hold for the primary languages also hold for interlanguages (p. 24).

Thus, it can be concluded, at least tentatively, that L2 learners, like natives speakers, make use of one grammar for both spoken and written language production.

Based on such a view, we can argue that, in terms of linguistic competence, what is learnt through the written medium can be transferred to the spoken medium for language production and comprehension, and vice versa, since they both involve the same grammatical repertoire. Thus despite the hybrid nature of language use in CMC as discussed in the previous section, or indeed the mixed used of language in CMC (in terms of its degrees of "writtenness" and "spokenness"), its use as a medium for language learning should be beneficial because the benefits gained in terms of the grammar acquired are transferable between different media.

2.8 Current Trend of Language Pedagogy

Any CALL implementation will involve all levels of language instruction from the planning of curriculum to the methods and techniques used. It will thus be important that the approach to CALL implementation does not conflict with the current generally accepted practice of language pedagogy. In fact, the lack of fit between the common practice of CALL and the current trend of language pedagogical approach is also part of the reason why CALL has not earned the trust of many
language teachers. It will be useful then to discuss the current trend in language pedagogy and identify a set of principles for CALL implementation that are compatible with it. It will be shown here that NBLT is a better choice over traditional CALL in terms of compatibility with the current language teaching approach.

If there is to be one recognised and generally accepted approach to language teaching, it would be the so called Communicative Language Teaching (CLT), despite difficulty in discussing it due to the eclectic nature of the concept (Pachler, 2000). For Mitchell (1994, p. 33), CLT “is a broad assembly of ideas, from a range of sources...which have together come to be accepted as ‘good practice’ by many contemporary teachers”. She summarises the communicative approach by listing six principles:

1. Classroom activities should maximise opportunities for learners to use the target language for meaningful purposes, with their attention on the messages they are creating and the tasks they are completing, rather than on correctness of language and language structure.

2. Learners trying their best to use the target language creatively and unpredictably are bound to make errors; this is a normal part of language learning, and constant correction is unnecessary, and even counterproductive.

3. Language analysis and grammar explanation may help some learners, but extensive experience of target language use helps everyone!

4. Effective language teaching is responsive to the needs and interests of the individual learner.

5. Effective language learning is an active process, in which the learner takes increasing responsibility for his or her progress.

6. The effective teacher aims to facilitate, not control, the language learning process. (Mitchell 1994, p. 38f.)

The first three are grounded in specific debates about language learning theory while the other three principles have to do with more general educational debates about learning and teaching (Stevick, 1996). It would be important to note that all six principles are well supported and can be supported by the conception of NBLT. These include meaningful language use, selective teacher’s correction, negligible,
responsiveness towards differential students’ needs and interest (ensured by the presence of the human factor argued in the first chapter), assumption and encouragement of learners’ active participation, and finally, facilitation by the teacher instead of control.

One of the most comprehensive lists of CLT features came some time ago from Finocchiaro and Brumfit (1983, pp. 91-93) in a comparison of audiolingual methodology with what they called the Communicative Approach. The close relationship of the Audiolingual Method with non-networked CALL and CLT with NBLT can be seen from the list reproduced below in Table 2.2. The parallel is especially prominent in those features that have been marked with an asterisk.

\textit{Table 2.2 A comparison of Audiolingual Method and Communicative Language Teaching}

<table>
<thead>
<tr>
<th>Audiolingual Method</th>
<th>Communicative Language Teaching</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. * Attends to structure and form more than meaning.</td>
<td>Meaning is paramount.</td>
</tr>
<tr>
<td>2. Demands more memorisation of structure-based dialogues.</td>
<td>Dialogues, if used, centre around communicative functions and are not normally memorised.</td>
</tr>
<tr>
<td>3. * Language items are not necessarily contextualised.</td>
<td>Contextualisation is a basic premise.</td>
</tr>
<tr>
<td>4. * Language learning is learning structures, sounds, or words.</td>
<td>Language learning is learning to communicate.</td>
</tr>
<tr>
<td>5. * Mastery or “overlearning” is sought</td>
<td>Effective communication is sought.</td>
</tr>
<tr>
<td>6. Drilling is a central technique.</td>
<td>Drilling may occur, but peripherally.</td>
</tr>
<tr>
<td>7. Native-speaker-like pronunciation is sought.</td>
<td>Comprehensible pronunciation is sought.</td>
</tr>
<tr>
<td>8. * Grammatical explanation is avoided.</td>
<td>Any device that helps the learners is accepted—varying according to their age, interest, etc.</td>
</tr>
<tr>
<td>9. Communicative activities come only after a long process of rigid drills and exercises.</td>
<td>Attempts to communicate are encouraged from the very beginning.</td>
</tr>
<tr>
<td>10. * The use of the student’s native language is forbidden.</td>
<td>Judicious use of native language is accepted where feasible.</td>
</tr>
<tr>
<td>11. Translation is forbidden at early levels.</td>
<td>Translation may be used where students need or benefit from it.</td>
</tr>
<tr>
<td></td>
<td>Reading and writing are deferred until speech is mastered.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>13. *</td>
<td>The target linguistic system is learned through the overt teaching of the patterns of the system.</td>
</tr>
<tr>
<td>14. *</td>
<td>Linguistic competence is the desired goal.</td>
</tr>
<tr>
<td>15.</td>
<td>Varieties of language are recognised but not emphasised.</td>
</tr>
<tr>
<td>16. *</td>
<td>The sequence of units is determined solely by principles of linguistic complexity.</td>
</tr>
<tr>
<td>17.</td>
<td>The teacher controls the learners and prevents them from doing anything that conflicts with the theory.</td>
</tr>
<tr>
<td>18. *</td>
<td>&quot;Language is habit,&quot; so error must be prevented at all costs.</td>
</tr>
<tr>
<td>19. *</td>
<td>Accuracy, in terms of formal correctness, is a primary goal.</td>
</tr>
<tr>
<td>20. *</td>
<td>Students are expected to interact with the language system, embodied in machines or controlled materials.</td>
</tr>
<tr>
<td>21. *</td>
<td>The teacher is expected to specify the language that students are to use.</td>
</tr>
<tr>
<td>22. *</td>
<td>Intrinsic motivation will spring from an interest in the structure of language.</td>
</tr>
</tbody>
</table>

CALL specialists who have followed the development of CALL along the line of learner-computer interaction and later, especially at the beginning of the last decade, experimented with some form of NBLT that makes use of teacher-learner and learner-learner interaction would see the list above as a list of parallel principles with non-networked CALL (Audiolinguial Method) and networked CALL (Communicative Language Teaching) respectively. One of the key concerns for the proponents of CLT is the development of communicative competence instead of linguistic competence (item 14 in Table 2.2 above) and this is shared by NBLT. Many software developed in the fashion of non-networked CALL, despite claiming to be interactive, draw their interactivity from a limited data bank of pre-programmed, pre-audio-recorded, or pre-video-recorded items, and the tasks do not offer much more than what a series of paper-based grammar drills do (Holliday, 1999). Such a discrepancy in pedagogical
approach and the use of technology for language instruction is indeed one of the major causes of failure for most CALL programs. If CALL is to avoid such lack of fit between the teaching tools and the L2 learning goals, its activities will need to be carefully designed according to the principles of CLT.

2.9 Communicative Competence

Given that communicative competence is the goal of a language classroom that adopts CLT, it should also be the goal of all CALL environments and instruction. Thus it is useful that we discuss what constitutes communicative competence and thereby determine the nature of our CALL activities through NBLT. However this does not necessarily mean that NBLT should be able to help the learners to develop the whole range of language skills. NBLT can only teach best what the networked computer medium can best offer.

2.9.1 Definition of Communicative Competence

The notion of communicative competence, introduced by Hymes (1966), may be broadly defined as what a speaker needs to know to communicate appropriately within a particular speech community. Thus communicative competence involves knowing not only the language code but also “what to say to whom, and how to say it appropriately in any given situation...[and]... the social and cultural knowledge speakers are presumed to have which enables them to use and interpret linguistic forms” (Saville-Troike, 1996, p. 363).

On the other hand, Canale and Swain (1980) propose a three-component framework for communicative competence and which Canale (1983) later extended to a four component competence. These interacting areas of knowledge and skill
include: grammatical competence, sociolinguistic competence, discourse competence, and strategic competence

By far the most detailed description of communication competence is given by Bachman (1990) in his theoretical framework of communicative language ability (CLA). He describes CLA as consisting of “both knowledge, or competence, and the capacity for implementing, or executing that competence in appropriate, contextualised communicative language use” (p.84). This is similar to the “knowledge” and “control” model suggested by Bialystok and Sharwood Smith (1985), which, similar to Bachman’s framework, is based on the distinction between “competence” and “performance”, initially proposed by Chomsky (1965).

In Bachman’s framework of CLA, he includes three components: language competence, strategic competence, and psychophysiological mechanisms. Language competence is further divided into organisational competence and pragmatic competence. He groups morphology, syntax, and vocabulary (grammatical competence) together with cohesion, and organization (textual competence) under the component of organisational competence. Under pragmatic competence he includes sociolinguistic competence and illocutionary competence. Figure 2.6 illustrating the components of language competence is reproduced from Bachman (1990, p. 87):

![Diagram of Bachman’s components of language competence](image-url)
Bachman’s organisational competence consists of grammatical competence that deals with usage and textual competence that deals with discourse level organisation. Pragmatic competence, however, pertains to the “relationships between the [linguistic signals] and [their] referents on the one hand, and the language users and context of communication, on the other” (Bachman, 1990, p. 89, emphasis in the original). Under pragmatic competence he includes speech acts, as proposed by Austin (1962) and Searle (1969), and language functions, from Halliday (1973, 1976), to form illocutionary competence. With sociolinguistic competence he includes sensitivity to differences in dialect or variety, register, naturalness, and ability to interpret cultural references and figures of speech.

An important part of Bachman’s CLA framework is his detailed formulation of the execution of the language competence in language use and is important in the understanding of language planning in the context of CMC which will be discussed in Section 2.10.3. The notion of strategic competence which he develops from Færch and Kasper’s (1983) psycholinguistic model of speech production has been given some sort of equality to language competence compared to the Canale and Swain’s framework. This includes three components: assessment, planning, and execution. The interactions among these components, together with language competencies and the language use context are reproduced in Figure 2.7 from Bachman (1990, p. 103), being itself an extension of Færch and Kasper’s model (1983, p. 25).

On top of that, Rassool (1999), after listing down five major driving forces of the current world, which include, among others, the multimodal nature of the electronic text and its interactivity, writes that “…we require significantly more than just the ability to read and write in a functional way” (p. 202; emphasis in original). Many others, especially Mark Warschauer, have emphasised the importance of
electronic literacy and its incorporation into the education system (Murray, 2000; Shetzer & Warschauer, 2000; Warschauer, 1999, 2000b). It seems that in this information age even Bachman’s conception of communicative language abilities is inadequate.

![Diagram of Bachman's model of language use]

*Figure 2.7 Bachman’s model of language use*

Despite criticism that Bachman’s model lacks a rationale grounded in psycholinguistic mechanisms and processes which can enable such a model to move beyond checklist status (Skehan, 1998), it is good enough to show us the range of
competences involved in communicative language use, especially its emphasis on pragmatic and strategic competences. This will serve as a systematising tool and a performance gauge as to how well a certain CALL activity fares. Thus any model of language teaching, including CALL, would need to take the full range of competences into account. This is because with the usually enormous initial cost involved in implementing a CALL project, it will be hard to justify the cause if the range of targeted language achievement is limited. However with such a comprehensive framework of language abilities such as that suggested by Bachman (1990, see Figure 2.6 above) serving as a performance gauge, most traditional standalone CALL software will seem simplistic and inadequate.

On the other hand, instead of just being a gauge for CALL activities, we will need to measure what the language teachers can achieve in the classroom against Bachman's (1990) framework and identify the areas where face-to-face classroom activities are lacking. One such area that springs to mind for most language teachers will be writing tasks, especially those who have hundreds of students at hand each semester. The difficulties here in organising a writing task are multi-tiered.

The first is that, based on my own teaching experience at both secondary and tertiary levels and experiences communicated to me by many other language teaching colleagues, most second language students abhor writing and getting them motivated in the first place is difficult for most language teachers. The second is to ensure that all extended writing tasks are meaningful, which will by necessity require a real audience. But real audience is difficult to come by in a classroom setting. Thus most will just settle with some simulated scenarios that students will not necessarily share in their life experience and understandably find them difficult to identify with. The third difficulty will be the treatment of completed compositions. Marking them will
defeat all efforts towards authenticity, because in real life communication, we do not usually correct and mark someone else's composition. For those students who yearn for high grades, to get one's composition marked and graded will be motivation in the "wrong" direction. Wrong in the sense that it does not arise out of the need to communicate and to communicate more effectively, but out of a desire for academic achievement, be it formal or informal, given that language is learned for communication. However, this is not the main concern for most teachers. The main concern is how to mark hundreds of compositions every week and whether students will learn from all those demotivating corrections.

Most commentators will also ask how much a student can write each semester given the above situation. Obviously it cannot be a lot. Smith (1988) has lamented on just such a situation:

I thought the answer (to how we learn to write) must be that we learn to write by writing until I reflected upon how little anyone writes in school, even the eager students, and how little feedback is provided... No one writes enough to learn more than a small part of what writers need to know. (p. 19)

In fact one of the claims that Krashen (1994, pp. 59-62) has made against the rival hypotheses (all more or less based on language output) of his Input Hypothesis is that output and error correction do not exist in great quantity, quoting studies such as Applebee, Langer and Mullis (1986) on writing inside or outside of school.

With the difficulties encountered in organising classroom writing tasks in mind, it is my contention, based on the discussion above on CLT and communicative language abilities, that NBLT can provide a way out to accomplish what will be an existential dilemma in a classroom setting.

On the other hand, Crystal (2001) has pointed out that the language of Internet users is in a state of transition and he quotes Wallace (1999) who discusses the false impressions Net participants gain about each other during encounters:
On the Internet we are struggling with a very odd set of tools and pushing them as hard as we can. Homo sapiens are both set in their ways and amazingly adaptable, and right now, all of us are learning some painful and awkward lessons about impression formation online... I look forward to the time when the kinds of "interaction rituals" that Goffman described will be stabilised on the net and the business of forming impressions will be more predictable, reliable, and familiar, and much less prone to those hazardous misperceptions. (p. 36)

Perhaps for L2 learners to cope with the language used on the Internet, a new kind of literacy, i.e. electronic literacy, will need to be met. The best way to do this is to expose our learner to the language use on the Internet, and this is where NBLT comes in.

2.10 Second Language Acquisition

In a study that seeks to formulate an SLA informed instructional approach to teaching an L2 through CMC, it is important to look at some of the important studies in the field of SLA. The first is concerned with comprehension-driven learning that has been put forward and argued consistently by Krashen despite the many criticisms towards his Input Hypothesis, together with its limitations. Next we will look at the theory of Comprehensible Output Hypothesis first suggested by Swain to supplement the inadequacy of Krashen's Input Hypothesis. This would be followed by an important discussion of the role of planning in language production due to its temporal relevance to written production in a time-displaced, asynchronous text-based CMC environment.

2.10.1 Language Input

Krashen (1985) proposes that comprehensible input drives forward the development and change of interlanguage and that the effects of such change carry over to influence production. To put this in Krashen's own words, "speech cannot be taught directly but 'emerges' on its own as a result of building competence via
comprehensible input” (Krashen, 1985, p. 2). Krashen is especially enthusiastic about the achievements of immersion education. Evaluation studies such as Swain and Lapkin (1982) have shown that immersion educated children reach much higher levels of achievement compared to children taught under the traditional methods, that is where an L2 is taught as a subject. In some areas, these children even perform at levels comparable to native-speaker children, especially their receptive skills. Ellis (1994) summarises Krashen’s claims in Input Hypothesis in the following four points:

1. Learners progress along the natural order by understanding input that contains structures a little bit beyond their current level of competence.

2. Although comprehensible input is necessary for acquisition to take place, it is not sufficient, as learners also need to be affectively disposed to ‘let in’ the input they comprehend.

3. Input becomes comprehensible as a result of simplification and with the help of contextual and extralinguistic clues; ‘fine-tuning’ (i.e. ensuring that learners receive input rich in the specific linguistic property they are due to acquire next) is not necessary.

4. Speaking is the result of acquisition, not its cause; learner production does not contribute directly to acquisition. (Ellis, 1994, p. 273)

Even though Krashen’s views have been influential within second language education, there have been some serious attacks on his pure “comprehensible input” position. One of the strongest attacks ironically comes from the Canadian immersion programmes. A later evaluation of the immersion programmes reveals that there is stark contrast in the achievement between receptive and productive skills by the students. Harley and Swain (1984) and Swain (1985) report that immersion-educated children, after many years of instruction, still make persistent errors when speaking and writing, suggesting that the automatic transfer from comprehension to production
as claimed by Krashen does not occur with any certainty. This, to a certain extent, has been accounted for by Skehan (1998), which I will discuss in the next section.

Thus while the value of comprehensible input in driving the development of interlanguage is undeniable, the interpretation of the benefits of comprehension-based methodologies should not be left unqualified (Skehan, 1998).

2.10.1.1 Problem With Comprehension Strategies

Skehan (1998) has tried to account for the failure of the immersion program by looking at comprehension strategies. He argues by drawing on the study by Clark and Clark (1977) on the use of comprehension strategies by native-speakers during listening. Clark and Clark (1977) find that native-speakers make use of syntactic and semantic strategies to recover the meaning of what is heard in a rather improvisatory manner. They argue that native-speaker comprehension is probabilistic in nature and that the sentences heard by them are not exhaustively parsed. Instead, a variety of means or strategies are used to help recover the intended meaning of what is said. This also suggests that they may not rely entirely on a linguistic model to retrieve meaning comprehensively and unambiguously and that their primary strategy, most of the time, is to achieve effectiveness in very fast language processing (Skehan, 1998). Skehan also points to a wider model of comprehension proposed by Anderson and Lynch (1988, p. 13), who suggest that comprehension is dependent on three main sources of knowledge:

\[
\text{Schematic knowledge} \\
\text{Background knowledge—factual knowledge, sociocultural} \\
\text{Procedural knowledge—how knowledge is used in discourse}
\]

\text{Such findings can only suggest that the transfer between language comprehension and production is not complete and should not imply that different systems are used for comprehension and production. This has been made quite clear by the research in syntactic priming. See Pickering, Branigan, Cleland, & Stewart (2000) for a review.}
**Contextual knowledge**

Knowledge of situation—physical setting, participants, etc.
Knowledge of co-text—what has been, will be said

**Systemic knowledge**

Syntactic
Semantic
Morphological


Anderson and Lynch propose that listeners build meaning by drawing on a wider range of resources, including both schematic and contextual knowledge, in contrast to Clark and Clark (1977) micro approaches that are largely concerned with the operation of systemic knowledge. Thus, comprehension is a mixture of bottom-up and top-down processes (Eskey, 1988), where the top-down processes are used to reduce the extent of dependence on the acoustic or visual stimulus involved in comprehending speech or writing respectively, regardless of whether this is seen from the modularity or interactionist position (see Kess, 1992, p. 131; Singleton, 1999, pp. 117-127, for discussions of the distinction). Skehan (1998) thus concludes that:

The comprehension process can be partly detached from the underlying syntactic system and from production. If comprehension draws on effective strategy use and on a capacity to relate input to context, then it may partly be an autonomous skill, whose development does not transfer automatically to other areas... *Effective comprehension may leave the underlying interlanguage system untouched and unscathed* [italics added]. (p. 15)

Skehan continues to point out that second or foreign language learners are people who lack not the schematic or contextual knowledge, but rather the systemic knowledge. Such learners, when faced with comprehension problems, are most likely to mobilise relevant schematic and contextual knowledge in order to compensate for their limitations in systemic knowledge. This necessarily obviates the need to engage the learner’s interlanguage system and deprives it of the chance to develop. In fact, even Krashen (1987, p. 66) himself acknowledges such a possibility.
On the other hand, Frazier and Rayner (1987) find that their subjects delayed the assignment of an analysis for lexically ambiguous sentences which involved syntactic category assignments, until they received disambiguating information. Such a problem in understanding for native speakers due to ambiguous sentences is analogous to a second language learner problem in understanding a sentence, due to their partially developed interlanguage. Following such a line of argument, it seems logical that a second language learner would naturally adopt a delay strategy too, just like native speakers when they face comprehension problem. Since L2 learners lack the systemic knowledge required to initially parse the sentence successfully, the disambiguating information that comes later would most likely be the contextual or schematic knowledge discussed above. In a rich environment, such as that of a face-to-face interaction, where contextual and schematic information is available in abundance, an L2 learner is much more likely to make use of such rich resources to help them understand the message at hand. Such a strategy that makes systemic knowledge unnecessary causes the learner’s interlanguage system to be spared.

Thus it seems plausible that if such schematic or contextual information can be reduced or eliminated, as in text-based CMC (see section 2.4 on Social Presence), so that any comprehension will have to be based solely on the linguistic text and co-text, the learner’s interlanguage will then be forced to engage in the comprehension process and be given a chance to develop accordingly. McConnell (2000) has described the use of language in such a medium as “where words and language are the only means of communicating. Everything else is stripped away, and all we have is language” (p.105).
2.10.1.2 Context Effects in Speech and Writing

A related issue to be discussed here, in support of the use of text-based CMC as an instructional medium as opposed to the face-to-face spoken medium, is context effects.

The general view among experimental psychologists seems to be that reading processes differ from listening processes in terms of the extent to which they use context. In speech perception, context effects are readily obtainable, but in skilled reading, context effects seem elusive (Ellis & Beattie, 1986, p. 222).

Ellis and Beattie (1986, p. 225-226), on the other hand, suggest that the ready decipherability of the printed word as opposed to the relatively impoverished nature of the speech signal favours ‘bottom-up’ rather than ‘top-down’ processing.

Fischler and Bloom (1980), while failing to find facilitatory context effects in reading, did find that responses to words which were anomalous in context were inhibited relative to responses to contextually predictable words. This result can be explained by the specifics of the reading process as opposed to the listening process. Harris and Coltheart (1986) note that in auditory word recognition the sounds of any given word are heard sequentially and this allows for the possibility of interaction between contextual information and recognition processes only after a part of the word has been uttered.\(^\text{18}\) However, this is not the case in visual word recognition where the whole word can be accessed simultaneously.\(^\text{19}\) It is this visual mode that

\(^{18}\) It has been suggested that there are two types of auditory memory with distinct properties: a sensory afterimage lasting several hundred milliseconds after the stimulus onset, which is perceived as a continuation of the stimulus, and a longer form of memory lasting up to 10 or 20 seconds (Cowan, 1997, p. 61). The form of memory used in listening comprehension to allow for the interaction between contextual information and recognition processes is likely to be the longer form of auditory memory.

\(^{19}\) This can be explained by the fact that the extraction of visual information can be very fast, in about 50 ms (Rayner, Inhoff, Morrison, Slowiaczek, and Bertera, 1981), while the speed of normal speech is about 150-200 words per minute (or about 3 words per second in sequential order).
makes the existence of the auditory system that makes use of context to identify words before their production meaningless.

From the discussion above it can be seen that reading of text, in contrast to listening to speech, is a process that is inherently less dependent on contextual information, which necessarily comprises the schematic and contextual knowledge that are used in comprehension as suggested by Anderson and Lynch (1988). It is thus argued that with the use of a written textual medium such as CMC, with its comparative absence of context effects and favouring of bottom-up processing, a natural and medium-intrinsic focus on language form by the learners can be achieved.

Considering the above in the context of language instruction and learning through CMC, it seems that the lack of social cues in a text-based medium that has a very much narrower communication bandwidth and the intrinsic lack of context effect in the written medium can prove to be an advantage instead of a handicap. With the drastically reduced schematic and contextual information available to them, which is further reduced in a written medium, and being at the same time geographically dispersed, learners who communicate through CMC would be left without a choice but to rely on their systemic knowledge for sentence parsing, and thus ensure the engagement of their interlanguage for possible development and growth.

Having the tangible presence of a more enduring textual record as co-text that has been stripped of all verbal or paralinguistic cues can actually induce a focus on the language form on the part of the learner, as has been suggested by Skehan (1998) and discussed in the previous section. Left with the only and somewhat socially

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20 This has been shown by a number of researchers exploring CMC from the "reduced cues" perspective, for example Dubrovsky et al. (1991), Herschel (1994), Hiltz and Turoff (1978), Kiesler and Sproull (1992), Kiesler et al. (1984). They all assume that the inherent characteristics of the CMC environment reduce the amount of nonverbal and contextual communicative cues.
impoverished semiotic code, the learner’s parsing ability of the code will be fully engaged in order to continue to participate in the online social interaction. This will induce a change in the learner’s interlanguage, probably prevent fossilisation and ensure continuous development of the learner’s interlanguage.

2.10.2 Language Output

Long (1985) makes a three-level distinction between conditions for second language learning:

1. Necessary
2. Sufficient
3. Efficient

From this, Ellis (1994) has pointed out that Krashen’s Input Hypothesis is necessary but not sufficient, in that learners also need to be affectively disposed to “let in” the input they comprehend. However, from what we have learnt from the Canadian Immersion Program discussed above, it seems that even if the affective filter is down, input will still not be sufficient. As has been noted by Skehan (1998), comprehension may be an autonomous skill whose development may not transfer to other areas such as language production.

Swain (1985), in her later evaluation of the Canadian Immersion Program, argues that comprehensible input is not sufficient for successful second language acquisition, and this is not because of the affective filter that Krashen himself has proposed, but that L2 learners need ample opportunities to produce comprehensible output in order to be fully proficient. She finds that although immersion students were provided with a rich source of comprehensible input, their interlanguage performance was still clearly identifiable as non-native speakers or writers (Swain, 1984, 1985). She has thus argued that output is independent in many ways from input, in
opposition to Krashen's Input Hypothesis, and proposed the comprehensible output hypothesis. This proposal, developed in Swain (1985, 1993), is later refined by Swain and Lapkin (1995) as follows:

In producing the L2, a learner will on occasion become aware of (i.e., notice) a linguistic problem (brought to his/her attention either by external feedback [e.g., clarification requests] or internal feedback). Noticing a problem ‘pushes’ the learner to modify his/her output. In doing so, the learner may sometimes be forced into a more syntactic processing mode than might occur in comprehension. Thus, output may set ‘noticing’ in train, triggering mental processes that lead to modified output. (Swain & Lapkin, 1995, 372-373)

The act of producing the target language can be a mechanism that helps learners to notice a gap in their interlanguage system and pushes them to operate in a more syntactic mode, leading the learner to produce modified output, in an effort to fill the gap or to obtain more relevant feedback to help fill the gap. The mainly semantic decoding operation in comprehension does not allow many such conscious processing of form to occur. Swain and Lapkin (1995) also argue that even without implicit or explicit external feedback provided from an interlocutor about the learners’ output, learners may still, on occasion, notice a gap in their own knowledge when they encounter a problem in trying to produce the L2. From such a point of view, any pedagogical approach that encourages learners to produce a large amount of output during their course of learning will help the students to improve their interlanguage, even without external pressure for accuracy. On the other hand, Nobuyoshi and Ellis (1993) suggest that pushing learners to improve the accuracy of their production results not only in immediate improved performance but also gains in accuracy over time. Language output by the learners is thus an important link to ensure acquisition.

Nobuyoshi and Ellis (1993) suggest two meanings of acquisition: (1) acquisition as the internalisation of new forms, and (2) acquisition as the increase in control over forms that have already been internalised. They suggest that pushing
learners to modify their output results in acquisition of the second type, that is, acquisition as an increase in ability to deploy existing grammatical knowledge more accurately and perhaps more fluently. The second meaning of acquisition that focuses on the process of acquisition rather than on the end product of acquisition is particularly relevant when a grammatical subsystem such as the tense-aspect system is being investigated, as in the use of past tense form studied by Nobuyoshi and Ellis (1993). This strongly contrasts with the acquisition of vocabulary, which can have instant acquisition result after the first exposure. Thus, any single form-meaning association involving the tense-aspect system cannot be seen as being fully acquired until the entire tense-aspect system has been acquired (Bardovi-Harlig, 2000, p. 95), and this is unlikely to be achieved without multiple exposures and opportunities for use over long periods of time. One important implication that arises from such a process view of acquisition is that if an L2 learner were to master any aspect of the target language, sustained and repeated exposures will need to be continually made available by the instructional environment. However, this is rarely the case in a normal language classroom, probably due to time limitation and instructional design.

2.10.2.1 Roles of Language Output

Skehan (1998), expanding on the suggestions by Swain (1985) and others, suggests six roles for output:

1. To generate better input
2. To force syntactic processing
3. To test hypotheses
4. To develop automaticity
5. To develop discourse skills
6. To develop a personal voice (pp. 16-19)
To generate better input

Although Krashen claims that speaking does not contribute directly to acquisition, he does allow for an indirect contribution. He writes:

...output aids acquisition indirectly by encouraging CI (comprehensible input), via conversation. When you speak it invites others to talk to you. Moreover, as you speak your output provides your conversational partner with information about your competence and whether he or she is communicating successfully. This information helps your conversational partner adjust the input to make it more comprehensible. (Krashen, 1989, p. 456)

Output is important as a signalling device to negotiate better input. There will be no way for someone to gauge the language command of an L2 learner if the learner does not produce any language using his/her limited interlanguage. This will make it impossible for the input to be fine-tuned for the L2 learner and to ensure comprehensibility.

To force syntactic processing

Output will cause an inadvertent focus on form because the product and final outcome of language output is linguistic form that carries the intended meaning. As Cook (1996, p. 81) has expressed it, the ability to decode language, that is, the ability to understand the meaning conveyed by a particular sentence, is not the same as code breaking, that is, discovering the linguistic systems which carry that meaning. A known code is used to decode a message, just like what a native speaker will do. To break an unknown code, the code itself will need to be worked out in order to discover what meaning it carries, through the form-meaning matching process. For an L2 learner, it is this code breaking, and usually with the precondition of noticing the “gap” in the learner’s interlanguage by the learner, that makes acquisition possible.

In addition, Swain and Lapkin (1995) also point out that other than triggering an external search for a suitable target language linguistic “model” to patch the gap,
output may also trigger an analysis of existing internal linguistic resources (see Figure 2.8 below, adapted from Swain & Lapkin, 1995, p. 388).

![Diagram of output and second language learning]

*Figure 2.8 Output and second language learning*

The noticing triggered by output₁ can be carried out through feedback from internal or external channels. These feedbacks are then analysed for their syntactic properties before functioning as linguistic models for the subsequent output (output₂).

Such an active attention to linguistic solutions can only happen if a gap is noticed in the interlanguage, i.e. no solution can be offered by the current state of interlanguage. If the learner is incapable of noticing the gaps in his or her interlanguage, what we have would be a typical case of fossilisation.

Washburn (1994) shows that the difference between the linguistic behaviours of fossilised and nonfossilised learners is quantitative rather than qualitative. The fossilised speakers appear to have no Zone of Proximal Development (ZPD)²¹ and thus are not able to operate on the input clues provided by tutors or other more capable peers. We can thus say that if a learner is made to always *actively attend*²² to

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²¹ The difference between what the child, or novice, is capable of when acting alone and what he or she is capable of when acting under the guidance of a more experienced other is referred to as the zone of proximal activity, which is defined by Vygotsky as follows: "It is the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p. 86).

²² Tomlin and Villa (1994) distinguish between the alerting, orienting, and detection functions of attention during the allocation of selective attention. Orientation, the active attention, is what is meant here. According to them, orientation concerns the allocation of resources based on expectations about the particular class of incoming sensory information, and involves activation of some higher level...
linguistic solutions in either the internal or external feedbacks they receive, through noticing of gaps during the output process, their ZPD, in Vygotsky (1978) terms, will be made to increase too. This indicates that the interlanguage system of the learner is kept permeable and open to change, and thus making acquisition of new linguistic items possible.

To test hypotheses

Schachter (1984) has suggested that output provides the opportunity to test hypotheses—to try out means of expression and see if they work. Skehan (1998) sees this testing of hypotheses through output as a more active way of controlling one’s learning as the learner does not have to depend on the input of others who are more competent to work as a model of comparison. It allows the speaker, and writer for that matter, to control the agenda, to take risks and look for feedback through confirmation checks, for example, on areas of uncertainty in a developing interlanguage grammar (Swain, 1985, 1995). Thus the desired feedback for a specific point can be engineered through selective language output.

To develop automaticity

Output provides the opportunity both for meaningful practice of one’s linguistic resources and for developing automaticity in their use (McLaughlin, Rossman & McLeod, 1983). This conforms to Nobuyoshi’s and Ellis’s (1993) second meaning of acquisition (see section 2.10.2 above), where acquisition is defined as the

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schema or plan of action and events. They point out that prior experience may predispose learners to attend, for example, to form or meaning in processing a stimulus. Thus noticing a gap in an L2 learner interlanguage will orient the learners to allocate special resources to attend to a particular class of incoming sensory information, based on the specific linguistic need and expectation. See Robinson (1995) for a comprehensive review of the relationship between attention, memory, and the “Noticing” hypothesis.
increase in control over forms that have already been internalised. The emphasis here is on language performance and fluency.

In the comprehension process, the cognitive process is from form to meaning. In language use, however, the process is reversed where meaning is encoded into form through the internalised forms. To be efficient in language use, the language output process would need to be carried out frequently, proceduralised and finally automatised through further practice (Anderson, 1993). This is especially so for the generative rule-based system of language production that is very much slower compared to an exemplar-based system where language is accumulated as wholes (see Skehan, 1998, p. 53-55, for a brief discussion).

To develop discourse skills

Brown and Yule (1983) have claimed that much ELT work focuses excessively on short turns and this results in learners' inability to take part in extended discourse. Current developments in discourse analysis have shown that there is much more to be learnt in order to become an effective communicator. The conceptions of language competence by Savignon (1997), Canale and Swain (1980), and Bachman (1990), reviewed above, have all pointed to the extensive range of competences to be acquired, including discourse competence, before one can be said to be competent in a particular language.

Carter (1998) has specifically called for the achievement of discourse literacy, which he defines as the ability to read and write extended texts fluently and accurately, as well as to actively reconstruct and deconstruct texts. Language users who are discourse literate, Carter claims, are also sensitive to the ways individuals can be manipulated and controlled by language, which will then be a source of empowerment for users, allowing them to better articulate their own positions within
particular fields of discourse. It is argued that discourse skills can only be acquired by actually participating in discourse. If meaning-making is a jointly collaborative activity, no learning is possible through passive input. The exact intricacies of how a discourse works out in actual practice and how our cognitive and linguistic resources are put to work must be actively experienced in an interactive, extended, and dialogic activity.

To develop a personal voice

The human language system is an open system that can be manipulated to work according to one’s intended meanings. To rely entirely on others’ input and the ways meaning are constructed by others is to deny learners their personal manner of speaking. Similar to the point referred to above on discourse manipulation and control (Carter, 1998), L2 learners need to learn how to steer a conversation along routes of interest to them and find ways to express individual meanings in their own words, so as to show character and personality through their own choice of language. Such a goal would be impossible without constant situated output by the learner.

2.10.3 Planning

Given that our attentional resources are limited, looking from an information-processing perspective, it is easy to see what crucial role planning plays in the quality of L2 language output, especially in developing automaticity and when learners are forced to process language syntactically. This is of particular relevance here in this study as our focus here is on time-displaced asynchronous CMC, where language planning is a built-in feature to be readily exploited by language teachers.

Mehnert (1998) has shown that to achieve the different aims (fluency, accuracy, complexity), the following uses of planning time seem optimal:
Fluency: Planning intervals of up to 10 minutes have a progressively greater effect, but the increase in the effect tends to diminish as more planning time is allocated.

Accuracy: The impact of planning on accuracy seems to come in the very early part of planning time. Periods as little as one minute lead to an effect, and this effect is not increased as more planning time is allocated.

Complexity: Planning time of 10 minutes seems optimal here, and time periods shorter than this do not seem to exert a very strong effect.

On the other hand, Foster and Skehan (1996) show that planning produces improvements in fluency, accuracy, and complexity but there are selective effects based on planning conditions. When learners are given time to plan but no guidance as to how the time might be used, as in a natural setting, it leads to strong accuracy effect. If learners are given guidance on how to use their planning time, the complexity score increases. This means that in a more autonomous setting, learners seem to focus on form and prepare their language use. Giving suggestions to learners will effect a meaning focus for the learners and thus push them to greater language complexity, regardless of the accuracy of the form used. With these findings from Mehnert (1998) and Foster and Skehan (1996), different planning conditions can be incorporated into pedagogical tasks that have mixed levels of guidance to achieve a balanced development in second language acquisition.

The importance and effect of planning is made clear from studies of native speaker speech production. The average native speaker, Pawley and Syder (1983) suggest, knows hundreds of thousands of lexicalised sentence stems and these are then available as a repertoire of elements to be used in an ongoing conversation to achieve real-time fluency. In addition, they propose that the planning unit for speech
is not very long by advancing their “one clause at a time hypothesis”, to suggest that
native speakers only plan ahead this length of time to avoid having to engage in
extensive structural planning while speaking, and assume that problems from the next
clause will be sorted out when it gets closer.

In concluding studies on speech production, Skehan (1998) posits that
producing speech seems to be much more a case of improvising on a clause-by-clause
basis\textsuperscript{23}, using lexical elements wherever possible to minimise processing demands.
This can explain the instant effect of planning on accuracy as obtained by Mehnert for
L2 learners. Since L2 learners do not have a huge repertoire of lexicalised sentence
stems for real-time retrieval, one minute could be all the time the subjects need to
process a clause. However, even a one-minute planning time is too long for all face-
to-face conversation. Thus, for the sake of practising for automaticity in output and
when syntactic processing is necessary for output, the plan-as-you-type situation
afforded by an asynchronous environment could be more conducive than an
environment that requires real-time response. The latter can at best be a plan-all-and-
produce-all kind of language production, as in giving a prepared speech without the
benefit of a script or participation in a real-time face-to-face forum, where language
planning on-the-fly is unrealistic.

2.11 Focus on Form

Since Form-Focused Instruction (FFI) is still widely practiced among
language teachers despite the development of Communicative Language Teaching, it

\textsuperscript{23} This is can be explained from a cognitive point of view. Given the limited attentional resources
available and the limited capacity of working memory, only a clause-by-clause processing is possible.
Thus due to the slow language processing speed of an L2 learner who has only a limited interlanguage
grammar, even a clause-by-clause processing will be difficult, if not impossible. In real-time
conversation, a few seconds delay in speech production will disrupt the flow and meaning of a
conversation.
would be important to review the latest development of FFI and see if FFI can be unproblematically transported to NBLT and perhaps enhanced by, and manifested in new forms through the new electronic medium.

Concluding from 30 years of research into Form-Focused Instruction (FFI), Ellis (2001) lists two pervasive findings: (1) FFI, especially of the more explicit kind, is effective in promoting language learning, and (2) FFI does not alter the natural processes of acquisition.

A comparison between FFI and Meaning-Focused Instruction (MFI) will be useful here, especially when NBLT is intrinsically meaning-based. FFI contrasts with MFI in that there is some attempt to draw learners’ attention to linguistic form while MFI requires learners to attend only to the content of what they want to communicate (Ellis, 2001, p. 13). Ellis (2000) has argued that the essential difference between FFI and MFI is how language is viewed (as an object or tool) and the role the learner is invited to play (as student or user). If the language is viewed as an object, the focus of attention will be on the language as an object to be analysed and learned. If viewed as a tool, the focus will be on how the intended meaning can be conveyed through the linguistic mental tool. Since a language student’s goal is to learn the target language, language will be viewed as an object, as opposed to a user, who will see it as a tool for communication. Thus, by definition, language will be seen as a tool and the role of the learner a user in NBLT, due to NBLT’s focus on human-to-human communication (Kern & Warschauer, 2000). From this distinction between FFI and MFI, NBLT will be seen as a form of MFI. However, as will be seen in the next section, there are types of FFI that have a focus on meaning instead of forms per se, and can be seen as part of the framework of MFI.
Another thing to note is that attention to lexical forms and the meaning they realise, where words are treated as objects to be learnt, constitutes form-focused instruction (Ellis, 2001). Thus "form" involves more than grammar, and includes lexical items.

2.11.1 Types of FFI

There have been a number of recent attempts to develop taxonomies of pedagogic options in FFI (e.g., Ellis, 1997; Doughty & Williams, 1998; Long, 1988, 1991). Long (1988, 1991) uses a binary distinction and differentiates between focus-on-form and focus-on-forms. Long's definition identifies two essential characteristics of focus-on-form: (1) Attention to form occurs in a lesson where the overriding focus is meaning or communication, and (2) attention to form arises incidentally in response to communicative need.

Recently, however, a number of researchers (Doughty & Varela, 1998; Long et al., 1998; Williams and Evans, 1998) have ignored the second defining characteristic of focus-on-form, i.e. that it should be incidental, including Long himself (see Long & Robinson, 1998). This reconceptualisation is seen in Doughty and Williams (1998c), where three definitional features are given: (1) the need for learner engagement with meaning to precede attention to the code; (2) the importance of analysing learners' linguistic needs to identify the forms that require treatment; and (3) the need for the treatment to be brief and unobtrusive. Ellis (2001) points out that (2) is not compatible with Long's initial definition as it assumes a planned rather than an incidental approach to form, and is therefore synthetic. He sees such a difference to be significant in that with planned focus-on-form, the instruction will be intensive, in the sense that learners will have the opportunity to attend to a single, preselected form many times. This contrasts with incidental focus-on-form where the instruction will
be extensive, covering a range of linguistic forms (grammatical, lexical, phonological, pragmatic). Thus Ellis (2001) revises his earlier binary distinctions to include three broad types, according to (a) where the primary focus of attention is to be placed and (b) how attention to form is distributed in the instruction. This is shown in Table 2.3:

<table>
<thead>
<tr>
<th>Type of FFI</th>
<th>Primary Focus</th>
<th>Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Focus-on-form</td>
<td>Form</td>
<td>Intensive</td>
</tr>
<tr>
<td>2. Planned focus-on-form</td>
<td>Meaning</td>
<td>Intensive</td>
</tr>
<tr>
<td>3. Incidental focus-on-form</td>
<td>Meaning</td>
<td>Extensive</td>
</tr>
</tbody>
</table>

This study will only cover the third form of FFI, namely incidental focus-on-form. From the studies of classroom processes, Ellis (2001) derives two kinds of incidental focus-on-form: pre-emptive and reactive. This will be briefly discussed in the next two sections.

2.11.2 Pre-emptive Focus-On-Form

In pre-emptive focus-on-form, the teacher or a learner takes time out from a communicative or meaning focused activity to initiate attention to a form that is perceived to be problematic even though no production error in the use of the form or difficulty with message comprehension has arisen (Ellis, 2001). Such time-outs involve the teacher and learner briefly switching from viewing language as a tool and functioning as a user to viewing language as an object and functioning as a student. Since this is not triggered externally by the situation but self-initiated, a clear intention on the part of the teacher to teach or on the part of the student to learn a particular form will need to be in place.
Ellis, Basturkmen, and Loewen (2001) who examined teacher- and learner-initiated attention to form in communicative ESL lessons, find that this occurs as frequently as reactive focus-on-form (discussed next).

2.11.3 Reactive Focus-On-Form

Reactive focus-on-form consists of the negative feedback teachers provide in response to learners’ actual or perceived errors. The feedback given here are reactions to errors made by learners and is thus externally triggered. The feedback includes various ways of providing implicit and explicit negative feedback and is best viewed as a continuum with options being more or less implicit or explicit. This distinction is considered important because it potentially affects noticing by learners of a particular linguistic form and has been shown to influence whether learners notice the errors in form and uptake the correct ones (Lyster, 1998; Oliver, 2000; Ellis et al., 2001).

Since reactive focus-on-form relies on negative feedback, we will now discuss the two types of feedback used to initiate a focus on form between the teacher and the learner. They are implicit and explicit negative feedback.

2.11.3.1 Implicit Negative Feedback

One important form of implicit negative feedback is recast, which is a reformulation of all or part of the learner’s deviant utterance. Lyster and Ranta (1997) show that teachers in immersion classrooms rely extensively on recasts. There are a number of studies that show that recasts assist acquisition (Long, Inagaki, & Ortega, 1998; Mackey & Philip, 1998). They are identified as valuable sources of input to language learners because they provide linguistic models that are contingent on the learners’ own language use and are thus likely to serve as input that is particularly salient and appropriate for language acquisition.
However, since recasts are not overt corrections, it may be difficult to identify the functions of recasts as either confirmation of meaning or feedback on form for the learner. Recast can only serve as negative evidence only when language learners perceive recasts as corrective feedback. Nicholas, Lightbown and Spada (2001), in their extensive review of the literature on recasts, conclude that recasts “appear to be most effective in contexts where it is clear to the learner that the recast is a reaction to the accuracy of the form, not the content, of the original utterance” (p. 720). It is thus important that if any recast is intended as negative feedback by the teacher, the function of recasts should be made clear either in the choice of words or through other means, such as typography, if it involves CMC.

Other forms of implicit negative feedback include requests for clarification and repetitions (often with learner’s error highlighted by intonation). Lyster’s (1998) study of negative feedback in immersion classrooms found that uptake is more likely to occur after requests for clarification (RFC) than after recasts. This is due to the fact that RFCs are executed in the form of questions and require a reply while recasts do not. Obviously such a requirement for reply makes RFCs more explicit and pressing and thus calls for more uptakes by the learner.

2.11.3.2 Explicit Negative Feedback

Explicit negative feedback, as Ellis (2001) has pointed out, is dispreferred in all types of FFI. This is especially so in Type 2 and Type 3 FFI because explicit negative feedback is obviously too obtrusive in approaches where meaning is given precedence.

Lyster and Ranta (1997) identify a number of explicit options. “Explicit correction” occurs when a teacher clearly indicates that the learner has said something
wrong and provides the correct form. "Metalinguistic feedback" consists of "comments, information, or questions related to the well-formedness of the student's utterance" (p. 47). "Elicitation" constitutes an attempt to directly elicit the correct form from students.

Such explicitness in feedback can possibly pose a problem in the meaning-focus orientation of NBLT. However, it remains to be seen whether the lack of social cues in CMC will make such feedback more tolerable. If so, the attention demanded by its explicitness will help the learner to notice the gap immediately and ensure learning, with the effect of the negative external affective feedback (Stevick, 1999) attenuated by the electronic medium.

2.11.4 Articulation Of Written Language

In spoken language, much of the meaning of the words being uttered are expressed through the tone of voice, pitch, loudness, and so on. Prosody, particularly intonation, can be used to show illocutionary force. However, other than in advertisement, such equivalence in articulation is rarely found in the written text of everyday communication, perhaps due to the limitations of the medium.

With the increased use of the electronic media as a means for personal communication in the last decade, as seen in email and other electronic messaging services of the Internet, this is changing rapidly. Various textual emphases have been devised for use in such a mode of communication as the need for more expressive and effective communication increases with the intensity of interpersonal communication. This is typically done through capitalising, italicising, use of underscore before and
after the emphasised word and other exotic custom-made symbols as seen in various forms of smileys\textsuperscript{24}.

Such use of graphic devices is particularly explored in the studies of typography. Undoubtedly, the use of graphic devices and space to articulate text greatly influences how written language is interpreted by readers (Olson, 1994). Italic type for example can be used for a number of communicative functions depending on context, including distinction, differentiation, and emphasis (Walker, 2001). Such articulation as used in typography is no more different from what is found in the current practice of CMC. With the now prevalent use of HTML\textsuperscript{25} in email that allows a wider range of textual formatting, subtler meanings are made possible. In an L2 instructional context, this is useful in that certain linguistic aspects that need the students' attention can be highlighted with subtle nuances by the instructor. This will provide L2 instructors with an extra tool for use in the online classroom, in addition to the discursive means.

2.11.5 Uptake

From the interactionist perspective of language acquisition, one of the prime indicators of language acquisition is whether the linguistic features put under focus by the instructor are taken up by the students in later exchanges. Due to the underlying interactionist approach to language teaching in NBLT, we will now discuss the significance of student uptake.

Feedback given by the teacher is usually followed by some sort of response by the students. Allwright (1984) uses the term “uptake” to refer to what learners are able

\textsuperscript{24} A symbol created using a combination of keyboard characters, often in the form :-) keyed by a computer user to communicate feelings such as pleasure, approval, or humour. Also called emoticon.

\textsuperscript{25} Hypertext Mark-up Language, a standardised system for tagging text files to achieve font, colour, graphic, and hyperlink effects on World Wide Web pages (Pearsall, 1998).
to report learning during or at the end of the lesson. Lyster, however, uses it to refer to learners’ response to the feedback they receive from teachers on their own efforts to communicate. Lyster and Ranta (1997, p. 49) defines uptake as follows:

Uptake ... refers to a student’s utterance that immediately follows the teacher’s feedback and that constitutes a reaction in some way to the teacher’s intention to draw attention to some aspect of the student’s initial utterance (this overall intention is clear to the student although the teacher’s specific focus may not be).

Ellis, Basturkmen, and Loewen (2001) take a broader perspective in defining the construct of uptake to include situations even when the previous move does not involve corrective feedback, such as in student-initiated focus on form. They propose the definition of uptake as follows:

1. Uptake is a student move.
2. The move is optional (i.e., a focus on form does not obligate the student to provide an uptake move).
3. The uptake move occurs in episodes where learners have demonstrated a gap in their knowledge (e.g., by making an error, by asking a question, or by failing to answer a teacher’s question).
4. The uptake move occurs as a reaction to some preceding move in which another participant (usually the teacher) either explicitly or implicitly provides information about a linguistic feature. (Ellis, Basturkmen, and Loewen, 2001, p. 286)

It should be noted that uptake does not constitute intake, or acquisition of a particular language property immediately. To show evidence of acquisition, the learner would need to demonstrate independent and autonomous use of the feature on subsequent occasions without any prompting (Ellis, Basturkmen, and Loewen, 2001). However, as Lyster and Ranta (1997) have pointed out, uptake helps learners to “practice” using certain linguistic items and thus may help them to automatise the retrieval of the specific items. Thus, if this is true, then any uptake by learners will contribute to the acquisition of the particular linguistic items, in the sense that it increases the control over already internalised forms (Nobuyoshi & Ellis, 1993).
Swain (1985, 1995) has argued for the need for “pushed output” for learners to achieve a high level of linguistic competence as it obliges learners to shift from semantic processing to syntactic processing. It also enables them to revise faulty hypotheses about the target language, based on feedback they receive. Since such output is “pushed”, it will mean that there should be something that triggers it. The triggers here can either be the explicit or implicit corrective information that is received by the learner. Thus uptake, being a reaction to a corrective move, can be seen as one type of pushed output and may subsequently create the conditions needed for language acquisition to occur.

2.12 Social Cultural Origin of Written Text

In discussing the literacy curriculum, Webster, Beveridge and Reed (1996), quoting Christie (1987) and Cope and Kalantzis (1993), doubt the view that a greater taught awareness of generic characteristics in writing will on its own improve children’s literacy. They argue that

generic characteristics of any given text are less powerful determinants of children’s literacy development than social interactions around those texts.... Genre theory runs the risk of overemphasising the linguistic evidence of different text types at the expense of social context factors, which written genres may reflect, but rarely construct. (p. 24)

Perhaps it is due to the very nature of written text, both as a social artefact that acts as a tool for recording and a tangible embodiment of spoken language, that most tend to think of written text in linguistic terms instead of its social and interactional value. But the fact that text is a social artefact and has a social origin should make any argument such as that by Webster, Beveridge and Reed above compelling. A written text that is stripped of its social context is a making of pure linguistic analysis and does not reflect the reality of what written text actually embodies. A quick reading of any personal letter or email would prove such a contention. Thus, CMC as a digitised
and much faster means of written communication should also be seen in this light, and perhaps even more so with its increased speed of transmission that makes it possible to emulate real-time conversation.