CHAPTER 1

INTRODUCTION

1.1 Guiding Principles

To teach a language effectively, we need to know first the linguistic, sociolinguistic, communicative, contextual and situational properties that the learners receive and process in order to learn the language (as in the natural process of mother tongue acquisition), how they receive all this input (through what channels or media), and the psycholinguistic processes involved in transforming input into intake and how this stored data is retrieved later in language production.

Such an argument is redundantly obvious to most language teaching professionals, but in real classroom practice such knowledge is extremely difficult to operationalise into practical techniques and methodology. Thus most would learn the techniques and ignore the guiding concepts and principles behind the techniques. This is even more so with Computer-assisted Language Learning (CALL), when the medium and environment of instruction involve a revolutionary invention called the microcomputer that took the world by storm in the 1980s, and a second wave in the 1990s when microcomputers are connected to allow instant and easy exchange of information.

The reason why language teachers need to be familiar with second language acquisition (SLA) has been pointed out by Ellis (1985):

... unless we know for certain that the teacher's scheme of things really does match the learner's way of going about things, we cannot be sure that the teaching content will contribute directly to language learning. (p. 1)
The point above will be relevant to, and indeed desirable for, all situations of language instruction and is equally relevant if we are to teach in an entirely revolutionary medium either with computers or through computers. Indeed, as language teachers, our beliefs about how language is acquired inform, justify, and sustain our everyday practices of language instruction.

Thus in this study, an attempt will be made to construct a computer-assisted language learning (CALL) pedagogy by identifying first the principles of instructed second language acquisition from SLA research. Next the technological affordances of the current Internet development will be identified. Following this the optimal ways of language instruction through the mediation of computers will be suggested based on the former two points. Finally these will be carried out in real-world situations to evaluate and examine their practicality and language acquisition potentiality.

1.2 Definitions

Michael Levy (1997) defines Computer-assisted Language Learning (CALL) as “the search for and study of applications of the computer in language teaching and learning” (p.1). If this definition is what we take as the guideline in our efforts to find ways of using the computer for language teaching, then it should not stop us from making use of computers that are linked together instead of computers that are standing alone in language education. This is what Kern and Warschauer (2000) mean when they extend the meaning of CALL to include what they call network-based language teaching (NBLT). They define NBLT as “language teaching that involves the use of computers connected to one another in either local or global networks”, and where “human-to-human communication is the focus” (Kern and Warschauer, 2000, p. 1).
With the expressed focus on human-to-human communication through networked computers for NBLT, the definition of what has been called computer-mediated communication (CMC) is in place. Lawley (1994) defines CMC as follows:

I eliminate the communication technologies that rely upon computers for switching technology (such as telephony or compressed video), but do not require the users to interact directly with the computer system via a keyboard or similar computer interface... Given the current state of computer communications and networks, this limits CMC to primarily text-based messaging, while leaving the possibility of incorporating sound, graphics, and video images as the technology becomes more sophisticated. (Lawley, 1994, Computer-Mediated Communication as Culture section, ¶ 1)

While Lawley does not exclude the possibility of including graphics, audio and video as part of CMC, Soukup (2000) has indeed argued for a theory of multimedia CMC. Soukup’s position, when applied to an SLA context, can be detrimental to the language acquisition process, instead of being beneficial for creating an optimal language learning environment. This is because a multi-modal environment can induce learners’ understanding of content without them even paying any attention to the target language and thus prevent a direct impact on the interlanguage of the learner.

Thus for the purpose of this study, I will give a limited definition of CMC, following Lawley (1994), as the direct use of computers in a text-based communication process. The reason to adopt such a position will be clearer in Chapter 2 when the role of input in language acquisition and how comprehension is achieved in real life is examined.

1.3 The Root of Network-Based Language Teaching

NBLT owes much of its existence to the Internet, the worldwide network of networks. The Internet took off suddenly with the introduction of the World Wide Web (WWW) towards the end of 1990 through the work of a computer scientist, Tim
Berners-Lee, from the European Organization for Nuclear Research, also known as CERN (CERN, 2002). Now, the idea of computer networking has spread to all fields, from scientific research to the industries, daily communication to business, and content delivery in education to its use as a communication and teaching tool in language education. How the use of computers has changed around the world is an indication of human creativity in creating new tools and then making better and more efficient use of them in all spheres of their life. Computer is very much a social artefact. It develops out of a need in the human race to connect: the primordial need to communicate with each other and to be involved in social interaction.

The history of the Internet revolves around four distinct aspects. The first is the technological evolution that began with early research on packet switching\textsuperscript{1} and the ARPANET\textsuperscript{2}, and second, the operations and management aspect of a global and complex operational infrastructure. The third is the social aspect, which resulted in a broad community of people working together to create and evolve the technology. Finally there is the commercialisation aspect, resulting in an extremely effective transition of research results into a broadly deployed and available information infrastructure (Leiner et al., 2000). Once all of these are in place, the possibility of new ways of communication is explored and established. This will then quickly find ways into society as a new tool for social communication and interaction, as has been exemplified in the sudden popularity of WWW and the use of personal emails in the last ten years. Leiner et al. also note that the Internet is as much a collection of

\textsuperscript{1} Packet switching is a process of transmitting and routing data in the form of packet segments, as opposed to circuits, which are sent rapidly and sequentially over a channel that is occupied only during the actual transmission of data.

\textsuperscript{2} ARPANET was a wide-area-network initiated by the US Defense Advanced Research Projects Agency (DARPA) connecting four host computers at Stanford Research Institute (SRI), UCLA, UC Santa Barbara and the University of Utah respectively.
communities as a collection of technologies, and its success is largely attributable to its ability to satisfy the basic community needs as well as to make use of the social force in an effective way to push the infrastructure forward. It is out of this social root that NBLT is conceptualised and practised.

1.4 Current CALL Failures

The fact that the Internet and the World Wide Web can be such a success in such a short time raises some fundamental questions about the traditional practice of CALL in the past 40 years. While they all involve the use of computers as a mediating tool, the Internet and the World Wide Web are designed to connect people, in contrast to traditional CALL that has been conceptualised to operate on standalone computers. Though this fundamental difference is obvious to most, it has not triggered a pervasive paradigm shift among many CALL practitioners.

Many blame it on the methods and theories. Liddell's (1994) comment on the situation of CALL developers more or less sums up the general feeling towards the field of CALL:

To those of us involved with developing or implementing CALL, it may often appear that we are indulging in an act of faith, a loose conjugation of method and theory united in electrons ... (p. 163)

Liddell (1994) continues that "the hard educational evidence, in terms of improved learning outcomes, is nowhere to be found in the literature of CALL" (p.164). Burston (1996) is equally critical of current CALL development, putting the blame on the multifarious and shifting nature of SLA theories. How can 40 years of experience fail to come to fruition?

To my mind this is due to the missing "human" element in the traditional CALL activities, the neglect of the fundamental social root of human nature. Traditional CALL invariably adopts an epistemological stance that ignores the social
construction of knowledge, and thus language as a mental tool for social construction. Perhaps it is this epistemological and existential fault that causes the many failures of CALL. It is to this "human" element that we now turn.

1.4.1 The Human Element

When commenting on the status of CALL, Kohn (1994) points out that current CALL is lacking because of poor linguistic modelling, insufficient deployment of natural language processing (NLP) techniques, an emphasis on special-purpose rather than general-purpose technology, and a neglect of the "human" dimension of CALL. Such a call for the "human" dimension is understandable. The human language is meant for communication between human beings. When it is lifted from its original setting and what it is meant for originally in the social activities and communication of the natural world, the meaning is lost. No pedagogical reasons and educational needs will be able to justify such distortion of language use and pedagogy. I believe this is the single most important cause of CALL failure in the past 30 years.

Nevertheless, Kohn is more concerned about the limited deployment of NLP technologies in CALL and that he believes NLP technologies are now available and usable. However, his comments seem more apposite to a change in direction to NBLT in the development of CALL where computer-mediated communication (CMC) is central. The biggest distinction between traditional CALL and NBLT is the presence of the human element in NBLT. When comparing human-computer interaction in non-networked CALL to human-human communication in NBLT, the kind of interactions that a learner has with a computer program seems very much "impoverished" when compared to those of NBLT, as Debski (1997) has rightly pointed out. As far as providing an acquisition rich environment for the learning of a
new language is concerned, NBLT is much more promising than conventional CALL where the use of standalone computers predominates.

In view of the two points Kohn (1994) makes concerning the use of general-purpose technology (such as email) and attention to the human dimension, NBLT is clearly, or at least partially, the answer. While linguistic modelling is still an issue to be finalised, CMC will be the right candidate to shift the technology use from special-purpose to general-purpose and put the human element at the very centre. It cannot be overemphasised that communication is only meaningful when it is carried out through the use of language between two human beings. Communication and interaction with an inanimate machine cannot be seen as authentic communication, regardless of how much artificial intelligence has been programmed into the machine. This is based on the sole reason that a machine does not possess consciousness, something which all human beings possess naturally.

However, what actually constitutes the human element would need to be made explicit before any useful discussion can be possible. At this point, research in the field of sociolinguistics will be able to shed some light on this, especially from the perspective of ethnographic microanalysis, also known as microethnography, and the study of discourse as social interaction.

1.4.1.1 Ethnographic Microanalysis Perspective

The central concern of ethnographic microanalysis is with the immediate ecology and micropolitics of social relations between persons engaged in situations of face-to-face interaction (Erickson, 1996). Even though the focus of studies in the field of ethnographic microanalysis has been on face-to-face interactions, the extrapolation of the ecology and micropolitics of social relations between persons engaging in face-
to-face interaction to interaction in CMC should be unproblematic. Even if there are differences, it will only concern some minor differences in interactional dynamics and the sense of space. It can be argued that CMC, regardless of whether it is synchronous\(^3\) or asynchronous\(^4\), is situated communication, just like all other real world natural communication. In fact, a better term to use in order to reflect the nature of CMC is dispersed situated communication, as the communication carried out in this medium is usually displaced in space and time. Indeed it is this situatedness of communication and interaction that makes all authentic communication authentic, and thus human. CMC is no exception. The only difference is that it is situated in a different space, namely, cyberspace.

As Erickson (1996) points out, the simulated conversation dialogues found in many language lessons appear stilted and sometimes even stereotypical. He sees such simulation as low-fidelity instead of high fidelity simulation, “even if the dialogue text comes from a detailed transcription of naturally occurring speech” (p. 292). He goes on to explain that

> part of what is missing in the prepared dialogue is the *on-line mutual influence* [italics added] that we experience in *naturally occurring* conversation... Another part... is the fluidity of social identification that can occur as *real people* converse face to face... Our social identity of the moment is *situated in the interaction* at hand; we perform it as we go along and we do so *conjointly* with the other interactional partners. (p. 292)

I believe these are what constitute the feel of humanness in human-to-human interaction. It is hard to imagine a computer achieving such social competence while acting as an interactional partner, if it is possible at all. Erickson also points out that

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\(^3\) Synchronous operations happen at the same time and can be either co-located or remote (different place).

\(^4\) Asynchronous operations do not need to happen at the same time and can also be co-located or remote. Though Dix, Finlay, Abowd and Beale (1998, pp. 488-489) argue for using a more accurate term *unsynchronised* when there is no real-time computer connection, in this dissertation the term *asynchronous* is used for the sake of its popularity among NBLT practitioners.
the reason for the labile nature of our situated social identity is that our social identity in an encounter is always potentially multidimensional. He quotes Goffman's observation that we bring many identities to a given encounter and that the aspects of identity we reveal is optional and strategic, yet not necessarily the result of conscious deliberation. Though it is possible to make such options and strategic planning explicit and operational for the computer to simulate, it has not been shown that such a goal is achievable with the current achievement of artificial intelligence, nor is such endeavour worthwhile and cost-effective, when human beings with such abilities are readily available.

1.4.1.2 Intentionality and Purposefulness

When discussing the notion of action in the context of discourse as interaction in society, van Dijk (1997b) points out that the "doings" and "activities" by human beings can be called "acts" only if they are intentional or interpreted by others to be intentional. He continues to add that most such intentional actions are accomplished in order to realise or bring about something else such as other actions, events, situations, or states of mind. In other words, they have goals that make the actions meaningful and the actors appear to be purposeful. We can thus conclude that it is when language or discourse is enacted with such properties that it begins to project humanness through this linguistic channel.

When seen in this light, the communications between humans and computers as conceptualised in the traditional non-networked CALL can hardly be seen as intentional discourse, if actions such as drag and drop and mouse clicks can be called discourse at all. This is true even if the video or audio clips and other skill-and-drill interactive exercises are designed with a specific purpose in mind by experienced
instructional designers. Such well-thought-out interactions are not even close to be interpreted as intentional, as computers lack consciousness, a crucial point that has been made before.

If CALL were to incorporate the human element into its activities, then intentionality and purposefulness will need to be present in all aspects of its activities. Indeed work has begun to create the so-called embodied conversational agents (Cassell, Sullivan, Prevost, & Churchill, 2000) that are capable of demonstrating many of the same properties as humans in face-to-face conversation. Terms such as affective computing haves emerged in the computer science literature to giveand computers can now be endowed with the abilitiesy to recognise, understand and express emotions (Picard, 1997). However, even if all these were achieved their abilities are limited to certain narrow domains, such as a ticket agent, who appears as a talking head on screen in a ticket vending machine. This is obviously inadequate to meet the needs and demands of a language classroom. Furthermore the high cost involved in developing such an agent for pedagogical use would be totally unacceptable to most educators.

1.4.2 Teaching Machine and Communicative Competence

The point made in the last section on the human element is crucial in explaining why CALL in its current form still remains a peripheral interest in the language teaching community as a whole and a domain of the CALL enthusiast (Levy, 1997). It is always easier to convince language teachers into adopting the humanist approach to language teaching than telling them that a machine without its own mind will be able to teach a new language better. Even though the idea that a teaching machine will be able to teach the more repetitive and laborious aspects of language teaching is seductive, most language teachers do not believe that they are
replaceable by machines. On the other hand, what some writers in the 1980s had pointed out was that [non-networked] CALL methodology was “out of step” with current ideas of language teaching and learning (Stevens et al. 1986, p. xi), that ideologies conflicted (Smith 1988, p. 5) and that CALL was not adaptable to modern methodologies (Last 1989, p. 39). It was not a problem in the 1960s and early 1970s when the empiricist theory and audio-lingualism predominated and there appeared to be a perfect match between the qualities of the computer and the requirements of language teaching and learning. Indeed, the audiolingual emphasis on repetition, imitation and simple substitution on the part of the learner and systematic reinforcement on the part of the teacher seemed to be conceptualised with the programmable computer in mind.

The 1980s saw the emergence of the most far-reaching approach to language teaching: Communicative Language Teaching (CLT). Richards and Rodgers (1986, p.66) characterise CLT as an approach which “aims to (a) make communicative competence the goal of language teaching and (b) develop procedures for the teaching of the four language skills that acknowledge the interdependence of language and communication”. It is here when the emphasis on communicative competence and the interdependence of language and communication that computers begin to fall short of our expectation. Last (1989, p.37) commented that “the potentiality of the computer appears all the more restricted as a language teacher if you couple that to the fact that communicative competence is now increasingly playing a central role at all levels of language learning”. Last’s comment is still true to all current non-networked CALL that aim to develop a language teaching software or a self-access language learning package, as the communicative approach is still the dominant approach for most, if not all language teachers.
1.4.3 Software Development and Learning Environment Management

There are other factors that contribute equally to the slow adoption of either network or non-network CALL. I will suggest two: (1) the difficulty in developing CALL software by most language teachers to meet their local situational needs, and (2) concerning NBLT, the complexity of managing the language learning environment.

From the point of view of teacher training, it is almost unthinkable to teach language teachers computer programming languages and programming environments such as Visual Basic or even the so-called more intuitive flowchart environment found in Macromedia’s Authorware. The powerful multimedia development program Macromedia’s Director borrows its metaphor from the world of film and animation and with the introduction of behaviours in Director 6, it now claims to provide codeless development, which means no programming or scripting with computer languages is necessary. Regardless of what the vendors of such development tools claim about their ease of use, they are by all measures beyond the grasp of most language teachers. It is not impossible, of course, and indeed many language teachers, CALL enthusiasts unmistakably, have already done it. However, they are all not the “common” language teachers and general language education does not owe its

5 Macromedia’s Authorware is a software development tool for creating interactive multimedia applications. It is primarily designed to facilitate the creation of computer-based training programs. However, its rich capabilities enable it to be used for many other computer applications. Combining an icon-based approach to programming, a highly integrated interface, and a powerful scripting language, Authorware provides a complete solution for creating and distributing robust software applications.

6 Like Authorware, Director is also a software development tool for creating interactive multimedia applications and an integrating program, but it uses a theatrical metaphor for multimedia creation and integration, a score with frames that represent a timeline and where different multimedia elements can be integrated along the line.

7 Special cast members, besides other cast members such as graphic, text, movie, script, or other element that is a component of a Director movie, that define operations or procedures, providing for scriptless authoring.
existence to such elite teachers. On the other hand, we must recognise that language teaching is very much situated and localised. General-purpose CALL packages developed by commercial software houses usually ignore learner differences and the local learning contexts in order to target as wide a market as possible. Thus the argument that the few elite teachers can develop CALL packages to meet the needs of all learners in all learning environments is just not plausible in practice. Furthermore, there is a deeper problem of how to conceptualise and realise viable language instruction through such artificial learning environments as there is still no consensus among CALL specialists on this issue.

In NBLT, synchronous electronic interaction found in real time conferencing or a chat program can be extremely messy and does not resemble any form of naturally occurring sequential communication. On the other, though asynchronous email interaction such as pen pal projects is one of the most frequently reported activities, the management of such joint projects between two institutions from different countries can be extremely difficult to arrange and co-ordinate. Even if this is possible, to implement such projects for all schools as a national project will be too unwieldy.

1.5 Medium or People?

Clark (1983), after closely examining published findings relating to media effects, unequivocally concludes that “there are no learning benefits to be gained from employing any specific medium to deliver instruction” (p. 445). Eight years later he repeated the study only to arrive at the same result (1991). Clark is correct. What is

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8 This is caused by the problems of interleaving and overlapped messages in synchronous text-based communication due to the lack of cotemporality, which is one of the grounding constraints as described by Clark and Brennan (1991).
important is not the medium. It is the people and what goes between them that matters. And this is exactly the focus of CMC.

1.6 Model of Instruction

In order to build a theoretical model of computer-mediated second language instruction using the electronic medium, some model of second language instruction would need to be adopted. I have argued for the case of NBLT as the setting and context for the development of CALL in the previous section through pointing out what is lacking in the traditional non-networked CALL. This is seen in the arguments for the incorporation of the human element into CALL activities, a change in focus from linguistic accuracy to communicative competence, and other technical and management difficulties. However, the definition of NBLT proposed by Kern and Warschauer (2000) does not specify the nature of activities that should be carried out, nor are the roles of teachers and learners clearly defined. In fact Kern and Warschauer do not intend NBLT to be an instructional model, but rather an instructional environment at this early stage of development. Such a dangling situation is not helpful for anyone who wishes to adopt NBLT. Thus an instructional model with a strong background in SLA research would need to be introduced.

To this end the Communicative Approach as the currently most widely adopted approach to language instruction is chosen as an overarching model of instruction for NBLT, while other more specific principles will be derived from SLA research. This is to ensure a ready adoption by language teachers at large and also a smoother transition if NBLT were to be introduced into an institution and implemented as a campus-wide initiative. This is in line with the goal to introduce a system that is a contiguous part of the more general and wide-covering Asynchronous
Learning Network as proposed by Mayadas (1997), in contrast to the isolated and occasional teaching methods adopted by some elite or technologically driven teachers.

The Communicative Approach to language instruction and learning and the underlying concept of communicative competence will be discussed in detail in the next chapter as a theoretical basis for the implementation of NBLT. However, the communicative approach has problems of its own with some critical comments in recent years as to its interpretations and some expressed reservations about it (for example, see Bax, 1999; Pachler, 2000; Brown, 2001). Thus a recent development in SLA research calls for a return to focus on forms in language teaching, but this time with a strong root in the communicative principle. This would be made clear when the recent development in Form-Focus Instruction is reviewed in the next chapter.

1.7 A Note on Methodology in CALL

It would be important that a note on the notion of methodology be made first as there seems to be some confusion between the methodology and the medium used for instructional delivery in CALL.

As far back as 1986, Jones (1986, p. 171) has aptly pointed out in the title of his paper that “It’s not so much the program, more what you do with it”, and this is with special reference to the importance of methodology in CALL. Warschauer (2000a) also makes a similar point in his ethnographic study of four classes adopting on-line learning as a means to learn a second language, when he comments that

the Internet itself does not constitute a method, any more than books, or blackboards, or libraries constitute a method. Rather, each teacher shaped her teaching according to both her own beliefs and the more general socio-cultural context. (p. 45)

This problem of equating the computer to teaching method has been noted by many CALL researchers, and R. E. Clark has been one of the most articulate. Clark (1994, p. 22) explains that “instructional methods [have] been confounded with media
and that it is the methods which influence learning”. He defines methods as the structural characteristics of tasks for learners that engender the processes and strategies necessary for learning. He also contrasts methods with media, a means of delivering methods to learners. His argument is that any method produced in a media-assisted format can also be delivered by other means. Therefore, media may “influence the cost or speed (efficiency) of learning but methods are causal in learning” (p. 26). However, different media will have different strength and efficiency in the way the methods or the contents are delivered.

Thus, while it is crucial that a viable theory of second language learning be used to inform the adoption of a certain method in CALL, since it is causal, the adoption of the method should be considered with the affordances which the medium can provide so as to bring out the best in both. This methodological issue is especially important as most of the CALL tasks developed since the 1990s make use of general-purpose software such as email, electronic discussions, and materials on the Web not intended for language learning, in line with Kohn’s (1994) call mentioned above.

1.8 Aim of Study

In their extensive review of CALL applications in Canada, the US, and Britain, Ng & Oliver (1987) summarise their findings with the following recommendations:

For meaningful computer application in language learning it is vital that CALL materials be designed on a theoretical basis, founded upon an understanding of language and language learning ...

To play a truly active role in language learning, CALL materials must ultimately be designed for integration into the classroom and with the curriculum. Materials should be integrated with other computerised or non-computerised materials, with class events, and with the overall language program. (pp. 13-14)

It on these recommendations that the current study is based: that there must be a strong theoretical basis for CALL implementation and that CALL should be
integrated into the classroom with the curriculum. To this a third dimension is added: that CALL should be simple to adopt and implement by language teachers in general and not limited to the privileged few.

This study argues for the adoption of NBLT as the way forward for future CALL development. NBLT will be seen to form a contiguous part of the new educational model known as Asynchronous Learning Network (ALN), as defined by Mayadas (1997) of the Alfred P. Sloan Foundation in the United States. A conceptual framework for networked CALL will be constructed by drawing mainly from the literature of second language acquisition (SLA) together with other feeder disciplines such as the study of CMC language use, cyberspace geography and others. Efforts will be made to tie the online activities carried out in this study to Communicative Language Teaching (CLT), the approach that is now prevalent in language instruction. It is important to see that the implementation of whatever forms of NBLT goes hand-in-hand with the general approach to language instruction in normal classroom teaching. This will ensure that most of the language teachers who are trained in CLT are familiar with the underlying principles, even though in NBLT it is now through a different medium.

The study attempts to set computer-mediated second language instruction in the theory and research of instructed SLA, together with other relevant fields, so that language instruction through the use of computers can be carried out on sound principles. However, such computer-mediated instruction (or more appropriately, facilitation) should also be accessible by all (both teachers and learners), easy to implement (even in Malaysian rural schools), involve minimal set up cost, and take into account the current language teachers’ skills and knowledge in Information and Communication Technology (ICT). Thus the construction of a theoretically sound
instructional model will need to be accompanied by logistically feasible and viable implementation of language instruction in terms of real learning contexts, especially those found in Malaysia.

A closely related aim is to argue against the traditional non-networked CALL in favour of NBLT. Such a position arises from the basic stance, in the word of Holliday (1999), that

[1]earning a language involves internalising a very complex set of interlocking systems that allow the user to produce and interpret novel but culturally acceptable utterances in appropriate situations...[T]o produce or understand such utterances, the language user or learner has to interact with other users of the language. No matter to what degree human beings are genetically programmed to acquire languages, humans need to interact in language environments (i.e., with language users) to learn or acquire a language (i.e., to become language users themselves). (Holliday, 1999, p. 181)

Such a view of language learning will necessarily make machine-based teaching as found in the traditional conception of CALL out of place, despite the current achievement of artificial intelligence and computational linguistics.

In view of the last point made above, computer-mediated language instruction will refer to the use of networked computers, either through Local Area Network (LAN) or Wide Area Network (WAN), where the interactional focus is between human beings, through the computer<sup>9</sup>, and not between the computer software and the learners. In this study the online activities will be carried out using asynchronous CMC, such as email, due to its potential language learning benefit of being time independent.<sup>10</sup> Synchronous CMC is seen to be limited in its affordances for language instruction and will not be considered here.

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<sup>9</sup> Even though in this case the learners still interact with the computer where the computer acts as a medium of communication, the focus is on the communicative process with the other learner or the tutor, as pointed out by Kern and Warschauer (2000) in their definition of NBLT above. This is so because the nature of interaction with the general purpose computer software such as the email client through the computer's input/output devices (e.g. mouse, keyboard, monitor) is necessarily at a lower level of interaction compared with the human level communicative processes.

<sup>10</sup> This will be made clear in later chapters, especially when language planning is discussed.
1.9 Framework of Study

The framework of this study will be organised around (1) a qualitative and quantitative empirical analysis and assessment of online pedagogical and language learning activities and (2) a judgemental evaluation of network-based CALL based on asynchronous CMC.

A general theoretical ground for this study will be proposed based on SLA research especially the Input Hypothesis and Output Hypothesis, together with the recent interest in the focus on forms approach. The literature of communicative competence will also be reviewed together with the definition of the notion of cyberspace, for this has special relevance when online language learning environment is discussed. The conception of online language learning environment will then serve as a theoretical basis for the incorporation of ALN with the physical classroom and the general language curriculum.

Insights from these research areas will be used to guide the implementation of online L2 instructional activities in this study, where the value and the processes of the online tutor/learner and learner/learner collaboration/cooperation will be identified and assessed in terms of their contributions to an acquisition-rich environment. These will also serve as assessment criteria to identify the benefits offered by the online asynchronous environment L2 instruction.

The goals of this study are to
1. establish a sound theoretical basis for the implementation of computer-mediated online second language teaching and learning;
2. explore how two forms of online instruction—one-on-one online tutoring and online group discussion—can be used for NBLT through text-based asynchronous CMC;
3. evaluate how effective these two forms of instructions are based on SLA principles;

4. assess to what extent a text-based asynchronous CMC environment can be a conducive environment for second language instruction;

The first goal will be achieved through the discussion of related literature in Chapter 2 that will serve as the basis for further discussion and analysis in Chapter 4. The second goal will be achieved through the analysis of empirical data in Chapter 4 which have been taken from the settings of one-on-one online tutoring and online group discussion. The third and fourth goals will be achieved through the judgemental analysis in the second part of Chapter 4 through an analysis of the nature of email and NBLT, a set of principles based on SLA, ESL, and learning theory literatures, and finally cognitive guidelines for implementing effective task-based instruction.